

The Relationship between Distance Students' Health Risk and
Health-Promoting Behaviours, Stress, Strain, Coping and
Academic Outcomes

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A thesis submitted in fulfilment of the requirements for the award of

Doctor of Philosophy

University of Southern Queensland

Submitted 2013

Certification of Thesis

I certify that the work contained in this thesis is original and that it contains no material written by another person, except where otherwise acknowledged. I also certify that the material has not been previously published, except where otherwise acknowledged, or submitted for any other award at any other higher education institution.

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Abstract

Studying by distance can pose both social and academic challenges for students. The unique experience of distance study as well as balancing family and work may contribute to students' stress and strains, and subsequently influence their ability to cope. In turn, this has the potential to contribute to, or exacerbate health and social problems. Previous research with on-campus students has found that students' engagement in health-promoting behaviours may mediate stressors and strains. Despite this, little is known about the relationships between health behaviours, stressors, strains and coping, and academic outcomes, specifically in relation to distance students.

The purpose of this doctoral research was fourfold: (a) to examine the relationship between distance students' health risk and health-promoting behaviours and stressors, strains, coping and academic outcomes, (b) to examine the cohort differences between distance students and on-campus students in relation to study variables, (c) to explore distance students' perceptions of their stressors, strains and coping, and the role of health behaviours in coping, and (d) to explore distance students' perceptions of the university's role in supporting their health. Two models formed the basis of this research; the health promotion model, and the transactional model of stress and coping.

This study was designed with two main phases using a mixed-method design, each involving students from the University of Southern Queensland (USQ). Phase 1 consisted of two quantitative stages. First, an online health survey was pilot tested with 73 USQ Nursing students. The intention was to test the reliability and validity of study measures and obtain feedback from students about the survey tool itself. The pilot testing phase informed the development of an online health survey implemented in the second quantitative stage.

Second, students across discipline areas, faculties and program levels completed an online health survey. This included 766 students including 270 on-campus and 496 distance

students. The main aim of this study was to examine the relationships between socio-demographic variables, general health and psychological variables on students' engagement in health behaviours. Additionally, the study examined the role that stressors, strains and coping played in predicting student academic outcomes.

The results indicated that age did not correlate across many study variables, and little difference was found between on-campus and distance students with respect to gender. Psychological distress was a significant predictor of stress, strain and coping and academic outcomes; whereas health-promoting behaviours related more strongly with student coping. A theoretical model was developed to test which health variables best predicted student stress, strain, coping and academic outcomes. The model indicated that whilst health-promoting behaviours did not have a direct relationship with academic outcomes, they did account for a large amount of variance in student coping, mediating between student stress and strain, regardless of study mode.

Phase 2 used a qualitative approach involving seven distance students. Semi-structured interviews were used to explore the experiences of distance students, with a specific focus on health and coping. Of interest was how they saw the role of health-promoting behaviours in their coping. Furthermore, these interviews sought to explore distance students' perceptions of the role of the university in supporting their health.

The findings from the qualitative research indicated a variety of challenges related to distance study, including social and academic stressors and strains. For example, students discussed the challenges around time pressures in juggling demands of family, work and study, and navigating the online environment. Despite these challenges, students often used proactive strategies such as time management strategies and health-promoting behaviours, as part of their coping repertoire to buffer the effects of stress.

Given the importance of health-promoting behaviours (nutrition, physical activity, stress management, spiritual growth, interpersonal relations, and health responsibility) in distance students' coping, these should be activity promoted. This should include the development of online strategies which enhance these behaviours within the context of overall student coping, information and advice built into students' transition strategies to their online study, and the provision of information and advice by USQ Student Services. This was supported by distance students themselves perceived the university to play a key role in supporting their health, specifically including the provision of health information, support services, recreational opportunities, and support with academic issues within an online learning environment.

Overall, this study has contributed to the body of knowledge by providing new insights into the role that health-promoting behaviours play in stress, strain and coping and academic outcomes for distance students. This presents an alternative view of how positive influences such as engaging in healthy behaviours, may influence students' ability to cope, and in turn their academic outcomes. This knowledge also contributes to new insights into how these behaviours may contribute to a positive study and work life balance.

Acknowledgements

Foremost, I would like to acknowledge the contributions of my two supervisors (Professor Cath Rogers-Clark and Professor Lorelle Burton), who are both strong and inspiring women. You each brought to the table different approaches, knowledge and skills; however each of your strengths greatly contributed to this work. Cath, I would like to acknowledge your patience, kindness and support. Your availability and ability to provide constructive, wise and thoughtful feedback throughout my jumble, was greatly appreciated. Lorelle, your advice, knowledge, support, and ability to see a clear direction in this thesis, has been an asset. Your attention to detail, and thorough and critical feedback, enabled me to produce a far better product than I could imagine.

Thank you to the USQ students who participated in this study, particularly those who participated in the interviews. I truly appreciated your time in sharing your thoughts, and I took strength from your motivation and tenacity to complete your studies. I hope that I have done justice to your experiences.

I am grateful for the help of Nigel Summers and Justine Fritsch for their role in ensuring a quality student-centred survey, and Ken Askin and Denise Manners from Psychology Technology Services. A special mention too, to Alison McDonald from the USQ Graphics Department for her work on my thesis. Thank you to Avril Baynes and Laura Black for their proofing and editing services.

Whilst there were many USQ academic staff along the way that provided support and assistance, I would like to thank in particular, Professor Tony Machin and Professor Peter Terry for their practical help and advice, and Dr Jayln Rose for her kind and encouraging words from beginning to end. For all things statistical, I really appreciated the hands-on support from Dr Rachel King, and in the earlier stages, Dr David Lalor. Thank you to Dr

Rob Eley and Dr Delwar Hossain, from the Centre for Rural and Remote Area Health for their feedback and advice when needed.

To my friends who have provided encouragement and support along the way, thank you. In particular Associate Professor Peter McIlveen for your support, and Catherine and Robert Cheek who were always welcome distractions from study.

I thank my parents for believing in me and telling me “this would all be worth it”, and in particular Mum, who was always there to lend a helping hand when needed most. I hope that I have done you both proud. To my parents-in-law, Gladys and Charlie, thank you for your practical and emotional support, and to my extended family, for your well wishes and thoughts.

To my two beautiful children, Alicia and Benjamin, thank you for your constant encouragement. This study was as much for you as it was for me. Like me, in life you may face your own Kearney’s Spring, or Millennium Cave, and I have every faith that you will be able to “make the distance” in whatever you decide to do. I will now try to be less “hissy”.

To my husband and best friend, Gavin, you have provided the staunchest support. Your unrelenting faith in my ability to complete this study, kept me going when I doubted myself. For every “hey Gav” question, every “stats date”, every wipe of my tears, every reassuring cuddle and pep talk, I deeply thank you. I will never forget your willingness to listen to my turmoil and ideas, even when you may not have always felt like it, or had the time. I believe that this experience has strengthened us, and that we can take on anything. Love has been the winner here.

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Chapter 1: Introduction

Distance learning has become part of the fabric of educational systems in both developed and developing countries. Within a higher education context, the opportunities to provide greater access to education is seen to lessen inequalities in education attainment in relation to age, gender and geographical distance, as well as enhancing the international dimension of the education experience (United Nations Educational, Scientific and Cultural Organisation, 2002). Underlying these concepts is a common belief that access to knowledge and learning is a universal right and a “key right of a global community” (International Council for Open and Distance Education, 2009).

The advent of distance education in a higher education context has meant greater opportunities with those from various backgrounds and circumstances to access education at a tertiary institution. For example, significant social and employment changes for women in Australia has seen a rise in participation rates since the 1950s when only one in five university students were female, compared with 57% of female students in higher education in 2011 (Australian Bureau of Statistics, 2012). In fact, in Australian regional universities, students are more likely to be female, older than their peers in metropolitan areas, caring for dependants, and studying part time by distance or multi-modal study (Richardson & Friedman, 2010).

The globalisation and internationalisation of higher education has also seen a greater expansion of distance education to students around the world. The University of Southern Queensland (USQ) for example, is the second largest provider of distance education in Australia and currently provides distance education to students in approximately 100 countries.

Being able to study flexibly using online materials, at one’s own pace, is an attractive option for a growing cohort of tertiary students (O’Brien, Keogh, & Neenan, 2009). Students

studying by distance are typically over the age of 25 (Fuller, Kuhne, & Frey, 2011; Moore & Kearsley, 1996; Stone, 2012) compared with traditional on-campus students. They are also more likely to be female, studying part time, and have family and work commitments which may potentially impact on their study experience (Department of Industry, Innovation, Science, Research, and Tertiary Education, 2013; Krause, Hartley, James, & McInnis, 2005). These students frequently decide to enrol in online or distance education courses because these better “fit” within their work and family lives (Bird & Morgan, 2003).

Whilst studying by distance has its advantages, it can pose both social and academic challenges. Socially, distance students often face the need to balance their study with work and family life; in addition, the nature of distance study may cause students to feel isolated and disconnected with peers and lecturers (Cousineau, Goldstein, & Franko, 2004; Dearnley, 2003; Pym, 1992). Academically, distance students may be returning to study after having some time away from formal study, and may face difficulties in utilising new technologies associated with online learning methods. The strains associated with both social and academic stressors, such as role and financial strains, are seen as contributing factors to higher student attrition rates and poorer academic outcomes than for students studying full time and on campus (Mancuso-Murphy, 2007; O'Brien et al., 2009). In addition, the strain of study may result in physiological and psychological outcomes. For example, students studying for long periods of time on computers can increase the risk of functional limitations (Hupert, Amick, Fossel, Coley, Robertson, & Katz, 2004), and prolonged mental or emotional exhaustion increases the risk of burnout in students (Morgan & de Bruin, 2010; Pomaki, Supeli, & Verhoeven, 2007).

The stressors and strains which students face, and their ability to cope with these, may be mediated or exacerbated by a student's health behaviours. For example, research with on-campus students has found that getting adequate sleep can have a positive influence on grade

point average (Trochel, Barnes, & Egget, 2000), and heavy internet use can decrease physical activity (Kim et al., 2010). High levels of student stress have been found to negatively affect concentration, thus affecting learning (Pierceall & Keim, 2007). In addition, credit card debt and stress is predictive of students engaging in a range of health-risk behaviours including poor diet, poor stress management, and binge drinking (Nelson, Lust, Story, & Ehlinger, 2008). Avoidance coping strategies such as alcohol consumption may also be a means by which students attempt to reduce stress (Britton, 2004; Kausar, 2010; Lenz, 2010).

Studies related to the health of university students focus largely on health-risk behaviours of younger on-campus students, such as alcohol and drug consumption, and high risk sexual behaviour (Caldeira et al., 2009; De Martini & Carey, 2009; De Visser, Smith, & Richters, 2005). Given the characteristics of distance students, the context of their health behaviours is variable and may be quite different from that of traditionally younger, on-campus students. A consideration of health behaviours of distance students has been missing from the literature, and the current study aimed to redress this imbalance.

Responding effectively to the health needs of distance students requires an understanding of the social context within which these health behaviours occur. For distance students, this means exploring how these behaviours are influenced by their home and study environment, and in turn, how they might impact on their academic performance (Dearnley, 2003). There is currently no literature which relates to how distance students perceive the relationship between their health and learning, nor how they perceive universities playing a role in supporting and improving their health. This may be due to a number of reasons.

Firstly, much of the research in distance education has been heavily focused on micro levels education issues. A review by Zawacki-Richter, Backer, and Vogt (2009) found that of published articles (2000 to 2008) on distance education, over 50% were related to issues such as instructional design, learner characteristics, and interactions and communication

within learning communities, and educational technology. Only 3.3% of papers were specifically related to learner support, and no published papers were found to relate to the health and welfare of distance education students. There was also found to be a lack of qualitative research in relation to distance students cited.

Secondly, much of the health behaviour research in higher education has been focused more towards health risk behaviours often on single issues such as smoking or alcohol consumption, taking a more biomedical approach (Epler, Sher, Loomis, & O'Malley, 2009; Reger, Williams, Kolar, Smith, & Douglas, 2002). Whilst a more holistic model of viewing health and wellbeing within universities has been developed such as the Health Promoting University (Dooris, 2001), this appears to be implicitly focused towards an on-campus perspective. With no frameworks or guidelines for higher education for distance students' health and wellbeing, much of the provision of support is provided within the context of university student health and welfare services or centres, without overarching university wide strategies to improve health and wellbeing.

Dooris, Dowding, Thompson and Wynne (as cited in Tsouros, Dowding, Thompson, & Dooris, 1998) first recognised that universities were significant social organisations, capable of creating environments that support and improve staff and students' health and wellbeing. As such, it is important for universities to recognise and address health issues to ensure that health and support services are "geared" to meet student needs. This can be reflected by developing strategies such as peer support programs, healthy policies, embedding concepts of health within curricula across discipline areas, and developing sustainable links within the community to address health needs (Dooris, 2001; Zimmer, Hill, & Sonnad, 2003). Not only are universities well placed to address and provide interventions for student health-risk behaviours, they can also promote positive health and wellbeing behaviours.

Study Setting

The setting for this study was the University of Southern Queensland (USQ). The history of USQ on the Darling Downs has been grounded in community participation. In 1960, locals in Toowoomba and surrounding areas advocated for a higher education institution on the Darling Downs. After much lobbying and government and local support, in 1967 the Queensland Institute of Technology (Darling Downs) was established. At this time courses were offered in engineering, science, and business studies (at Diploma and Certificate levels). In 1971, the institute became the Darling Downs Institute of Advanced Education (DDIAE), with a greater array of courses being offered and overarching control by a college council. At this time, distance education became a major focus and in 1980, external enrolments exceeded on-campus enrolments. Furthermore, USQ became a major leader in providing education to many off-shore international students. Research began to flourish in the late 1980s and early 1990s which coincided with the appointment of professors, major infrastructure development, and the institution gaining full university status in 1992.

Today, the university continues to build a strong research profile, and has a broad range of connections at local, regional, national and international levels. The university provides educational programs to students across Australia and off-shore, in collaboration with international partners. Over the last 30 years, student enrolments have increased significantly. In 1982, there were 4,297 students enrolled compared with 27,229 in 2012 (USQ, 2012). USQ is considered a “dual-mode institution with triple option teaching modes (on-campus, distance, and online), and is currently seen as the second largest distance education provider in Australia” (Sankey, 2006).

Research Problem

Whilst much is known about the health beliefs, behaviours and issues of younger, more traditional on-campus university students, there is a lack of information about the health and wellbeing of distance students. Despite the fact that most students in Australia study on campus, distance students are a growing cohort within tertiary education. In 2008, there were 117,419 domestic students in Australia studying externally, compared with 142,911 in 2011 (Department of Industry, Innovation, Science, Research, and Tertiary Education, 2013). Women outweighed the number of males in Australia studying externally (92,773) compared to 50,138 male students (Department of Industry, Innovation, Science, Research, and Tertiary Education, 2013). In 2010, of all higher education students studying by distance, 79% studied on a part-time basis (Australian Bureau of Statistics, 2012b).

Increasing the number of mature-age students in Australia is a recommendation by the Bradley Review, with a national target of at least 40% of 25 to 34 year olds attaining a qualification at bachelor level or above by 2020 (Bradley, Noonan, Nugent, & Scales, 2008). This is relevant to distance education, with many older students deciding to study higher degrees via flexible modes of delivery. There is recognition that particularly for mature age students that they often commence their study from alternate career and study pathways, and require modes of study that increase their flexibility (Richardson & Friedman, 2010). Often having had a break from study, these students require support in transitioning to study and juggling the demands of study with their lives.

Despite a growing number of students accessing their study by distance, there is still much to learn about how they interact with technology (Palmer, 2012), and their transition and support needs (Bird & Morgan, 2003; Burton, Lawrence, Summers, Gibbings, & Noble, 2013). Many students face social and academic challenges during their studies (Cragg, Andrusyszyn, & Fraser, 2005; Dunn, 2005; Muilenburg & Berge, 2005). It is important to

understand the context of these challenges, by considering how they may impact on stress and strain and affect their ability to cope, as well as what impact this may have on their health and health behaviours. Health-promoting behaviours may promote student wellbeing and have a positive impact on students' abilities to study successfully; however, little is known about the extent to which distance students engage in these behaviours. Furthermore, little is known about health-risk behaviours of distance students, which is significant given that some health behaviours have shown to impact negatively on academic performance (Gaultney, 2010; McCabe, Knight, Teter, & Wechsler, 2005) and student retention (Ansari & Stock, 2010; Coates & Ransom, 2011).

It is important to understand the prevalence of health behaviours of distance students, understand the context in which these may occur, and the factors which increase the likelihood of students being able to adopt positive health behaviours. Moreover, many health promoting and health-risk behaviours are amenable to change.

For example, tailored health promotion messages to college students may increase physical activity self-efficacy (Jung & Heald, 2009) or reduce smoking through smoking cessation interventions (Obermayer, Riley, Asif, & Jean-Mary, 2004) and reduce hazardous alcohol consumption via web based interventions with college students (Dournas & Andersen, 2009). However, these studies generally involve younger on-campus students in their research and thus the findings may not be translated to mature-age student populations, particularly those studying externally to the university.

USQ's vision is "to be recognised as a world leader in open and flexible higher education" (USQ, 2010). Distance students at USQ make up approximately 75% of the student cohort, with growing trends for increases in mature-age students accessing tertiary study (Burton, Taylor, Dowling, & Lawrence, 2009). New alliances with the Open Education Resource University, ensures that those students who due to circumstance, geography or

poverty, cannot physically attend a USQ campus, will be able to access education opportunities via online learning (USQ, 2012). Given that approximately one third of USQ's students come from lower socioeconomic postcodes, providing inclusive education will remain a key focus in the future (USQ, 2012).

Given the continued growth in distance education and the diversity in student cohorts, it is important to understand how best to support and address health issues of students studying by distance, it is important to understand their perceptions of the issues, areas of need, and ways in which students themselves think that their health and wellbeing could be supported. This has yet to be explored with distance students and as such, was the focus of this study.

Study Design

This study was grounded from a socio-ecological perspective which acknowledges that a range of determinants can influence students' health and wellbeing. Both the health promotion model and the transactional model of stress and coping provided the theoretical underpinnings which guided this research. It was critical to choose appropriate research designs from theoretical and philosophical points of view. As student health and wellbeing is affected and influenced by a complex array of variables, it was decided that a mixed-method approach that used both qualitative and quantitative approaches would best address the research questions. This research consisted of two phases.

In the first stage of Phase 1, a sample of USQ Nursing students pilot tested an online health survey, with the intention determining which variables should be carried forward for further analysis with a larger USQ sample in the second stage of Phase 1. In addition, an evaluation of the online health survey resulted in feedback from students about the clarity and ease of use of the survey tool itself, which was later used for refinement of the measures and methods in Study 1.

The second stage of Phase 1 (Study 1) involved on-campus and distance students from different levels of their program such as undergraduate and postgraduate and different faculties. This study intended to examine which health variables best predicted student stress, strain, coping and academic outcomes.

Phase 2 of the research used a qualitative methodology aimed at explaining the nature of the relationships found in Phase 1, from an in-depth students' perspective, and also explore more broadly, how students perceived their study, their circumstances, and their health. This study aimed to provide a deeper insight into distance students' experiences and how they cope, and how students perceived the University's role in improving their health and wellbeing.

Significance of the Study

From a broad perspective, the university sector is moving towards, and embracing, sustainable models. This involves ensuring that services are directed to where they are needed most and have the potential for long term benefits for students and the wider community. First of all, this requires an understanding of the issues facing distance students from both social and learning perspectives, and also how their experiences may influence their health and wellbeing.

In terms of health behaviours, there is no current literature that has explored both health-risk behaviours and health-promoting behaviours of distance students, nor has the impact of these behaviours on academic outcomes been explored. Secondly, failure to address health and wellbeing issues may not only have negative implications for student welfare, but may negatively influence student retention. Given the increased numbers of students studying by distance or external mode, this is especially relevant to USQ, where the majority of students are studying by distance.

Whilst most research about the health behaviours of university students has focused on health-risk behaviours, this research values a holistic strength-based approach. This approach acknowledges the capacity of students to adopt positive strategies which assist them to adapt to their circumstances and environment (Fleming & Parker, 2006). Students themselves are important in identifying strategies that may improve health within a university environment, given their firsthand experience of academic and social stressors and strains. As there are many opportunities within a university setting to promote and improve health, these student perspectives are critical in ensuring the future success of university-based interventions.

In summary, this research is significant for its exploration of the determinants of distance students' health and wellbeing. Given the growing number of students entering higher education, particularly women who juggle many work and family responsibilities, it was necessary to consider how these influences may affect their study and their health and wellbeing. Fundamental to this process is exploring health and wellbeing from a holistic perspective. To this end, student perspectives were considered more broadly than their physical health. Their health and wellbeing was also considered within mental, social, and spiritual dimensions.

Research Aims

- Aim 1: To examine the cohort differences between distance students and on-campus students in relation to health risk and health-promoting behaviours, stress, strain, coping and academic outcomes.
- Aim 2: To examine distance students' health risk and health-promoting behaviours and the relationships of these behaviours with stress, strain, coping and academic outcomes.

Aim 3: To explore the role of health-promoting behaviours within the context of distance students' stressors, strains and ways of coping.

Aim 4: To explore distance students' perceptions of the role/s and responsibilities of the university in supporting their health and wellbeing.

Key Terms

The general term *on-campus student* is used frequently in this thesis. This refers to a person who studies the majority of their program on campus at USQ in one of three locations (Toowoomba, Fraser Coast or Springfield), via face-to-face delivery. This does not include those students who choose to study by multiple modes.

In addition, the term *distance student* is also used. A distant student is one who studies the majority of their program, externally (off-campus). For the purposes of this research, distance students have been described as those studying by distance, external and/or online mode. They may include students residing in Australia, or those outside Australia (i.e., international distance students studying via USQ international partner organisations). In this thesis, the term *distance student* does not refer to students studying by flexible delivery or multimodal delivery. Characteristics of distance students are discussed in further detail in Chapter 2, in terms of demographics and learning. Terms such as “non traditional” or “mature age” may also be used interchangeably as often distance students fit with these descriptions in the literature. Finally, distance *education* has been defined by USQ as a term used traditionally to describe the study undertaken by students studying externally to the university. Distance education can accommodate students who cannot attend on-campus teaching/learning activities because of physical distance, or commitments such as work or family. A full list of key terms related to this research; appear as a glossary in Appendix A. These relate to USQ's descriptions of academic terms, students, and key variables.

Thesis Structure

Following this introductory chapter, *Chapter 2* provides a review of the literature in relation to distance education, and challenges facing distance students. This chapter also provides a summary of previous research in relation to health behaviours of university students and their relationship with student stress and strain, and ability to cope. *Chapter 3* outlines the methodology, an overview of the theoretical frameworks and mixed-method research approaches. *Chapter 4* describes the methods used in Study 1, including a discussion of the methods and procedures, description of key variables, and results. This chapter summarises the results of Study 1 and discusses the implications for Study 2. *Chapter 5* discusses the methodology and results of Study 2, including in-depth descriptions based on distance students' experiences. *Chapter 6* provides a discussion of the overall contributions of the study findings to existing literature, and provides recommendations as to how students' health can be supported, within a higher education context.

Chapter 2: Literature Review

“If you have health, you probably will be happy, and if you have health and happiness, you have all the wealth you need, even if it is not all you want.”

(Elbert Hubbard 1856-1915, American writer)

Chapter Introduction

This chapter provides a comprehensive review of the literature that informs this study. The review is centred on three core themes including (a) the context of distance education and its challenges for the distance student, (b) student health and wellbeing, including health risk and health-promoting behaviours, and (c) student stressors, strains and coping, academic outcomes and relationships with student health and wellbeing.

Firstly, to understand the health behaviours of university students, including health and health-promoting behaviours, one must view the student within both social and academic contexts. Within an academic context, this requires an understanding of distance education approaches and the challenges commonly faced by the distance student, including many intrinsic and extrinsic factors. Within a social context, an understanding of intrinsic factors (such as how one perceives their social and academic stressors and strains and how they cope), and extrinsic factors (such as the influence of family and friends), paves the way for exploring how these factors may influence their health and wellbeing.

Secondly, universities themselves are considered important settings in which students' health and wellbeing can be promoted and supported. This chapter introduces key concepts in relation to health and wellbeing, and outlines health promotion within a university context. Promoting good health within universities is considered beneficial, not only for students, but for staff and the wider community.

Increasing numbers of mature-age students accessing higher education, particularly those studying by distance (Department of Industry, Innovation, Science, Research, and Tertiary Education, 2013), may experience different challenges embarking on tertiary study, due to different social circumstances than that of younger school leavers (Gershuny & Rainey, 2006; Lowe & Gayle, 2007). Consequently, the strains experienced by juggling family and work described in the literature (Gershuny & Rainey, 2006; Steele, Lauder, Caperchione, & Anastasi, 2005), may impact on students' health and wellbeing, and may contribute to some students leaving study prematurely (Carroll, Ng, & Birch, 2009; Nichols, 2010).

In summary, various multidimensional influences may impact on students' health and wellbeing. This chapter provides the context for academic and social challenges and how the interactions between the student and their environment may inhibit or support a healthy lifestyle. Students' health and wellbeing is therefore considered from a socio-ecological viewpoint, considering that students' health is a product of these internal and external influences.

The Context of Distance Higher Education

Distance education has been defined generally as “any formal approach to instruction in which the majority of instruction occurs while educator and learner are not in each other's physical presence” (Mehrotra, Hollister, & McGahey, 2001, p. 1). Most commonly, this “absence of physical presence” or “geographical distance” is also described as the main difference between traditional on-campus and distance study (Liu, Gomez, Khan, & Yen, 2007; Von Prummer, 2000).

USQ defines distance (external study) as:

A mode of study which involves arrangements whereby lesson materials, assignments, etc. are delivered to students, either by post or courier service or via the internet, and for which any associated attendance at the university is of an incidental, irregular, special or voluntary nature. (USQ, 2013d)

Historically, learning at a distance has been occurring in other countries since the 1800s via correspondence (Kember, 1995; Mehrotra et al., 2001). In Australia, correspondence schools, such as the School of the Air for isolated children in rural and remote areas, and the use of two-way radio, began the distance education revolution (Mehrotra et al., 2001; Mitchell, 2009; Stacey, 2005). The need to educate children by distance drove the need for teacher education, which was possible via correspondence from the early 1910s, with the first print based correspondence course being available from the University of Queensland in 1911.

The growth of teachers colleges, poorer economic conditions, and a decrease in higher education enrolments, accompanied by the increased need for women to engage in part-time distance education (particularly in terms of teaching), found the Labour government in the 1970s putting distance education on the higher education agenda. In 1975, there were (17,000) external students which grew in 1982 to (334,000) students. Most courses at this time were offered in the areas of teaching and business. Improvements in the social position of women in Australia and the need for women to obtain higher education qualifications in female dominated professions, such as teaching and nursing, meant an increase in demand in courses where women could work and study (Stacey, 2005).

An overall increasing growth and demand in a range of programs, resulted in much duplication, and the Australian government began moves to better coordinate higher distance

education, commissioning a committee to oversee the sector and also moving towards creating opportunities for greater equity for students (Stacey, 2005). The emphasis changed in the 1970s to 1980s to lifelong learning, and the notion of dual-mode universities became the norm in Australia, addressing the need for more flexible delivery beyond the traditional on-campus experience.

The establishment of a national consortium of universities offering distance education occurred in 1993 and in 2002, the Australasian Council on Open, Distance and E-Learning was established which has seen greater collaboration between Australian and New Zealand universities, including sharing of courseware and communication systems (Stacey, 2005; White, 1982). Over the last 20 years, changes in fee-paying and government subsidies, for example, HECS funded places, has meant fluctuations in student numbers (Norton, 2012). Not only has distance education opened up access for a domestic market, but has also provided increased opportunities for the enrolment of overseas students. The Australian Bureau of Statistics (2011b) reported that in 2009, one in five students in Australia were international students, with Australia leading OECD countries in terms of international student enrolments. In addition, “Australia’s share of the international student market increased from 5% in 2000 to 7% in 2009, making Australia the third largest provider of international education services in 2009, behind the United States (18%), and the United Kingdom (10%; Australian Bureau of Statistics, 2011b).

Advances in technology, and increases in the proliferation of research into computer based instructions, online learning and e-learning have all contributed to changes in distance higher education. The “knowledge economy” makes higher education vital to Australia’s prosperity”, with 2% of expenditure attributable to higher education (Norton, 2012).

Moore and Kearsley (2012) describe five generations in relation to how distance education has evolved over time. These include: correspondence (1st generation), broadcast,

radio and television (2nd generation), open universities (3rd generation), teleconferencing (4th generation) and internet/web (5th generation). The historical roots of distance education have meant philosophically, that students engage in largely independent and autonomous study.

Traditionally, distance education models and pedagogy view students within a “geographical” lens. This means that distance students are seen as “external” to the university, and the students’ point of access to learning is usually via mailed study material. This model of distance education often involves the mass production of educational material designed to be efficient and described as an *industrial model* (Moore & Anderson, 2003; Pym, 1992) or *course production model* (Simpson, 2002). The focus essentially is on instructional material being developed and designed for students, in which students engage autonomously with the material, resulting in minimal contact between student and teacher.

Whilst some universities may still use this traditional model of distance education, others have embraced changing pedagogy, towards andragogy, where the student is seen to be an active participant in their learning. As a result, the student becomes less reliant on the teacher (Kember, 1995). Moreover, distance education is now more reflective of the need to create meaningful learning interactions between students and teachers, as well as ensuring adequate academic and social supports are available throughout their student journey (Boyle, Kwon, Ross, & Simpson, 2010; Simpson, 2002). This is more akin to Moore’s model which focused on transactional processes for learning, rather than instructional pedagogy alone (Moore & Anderson, 2003).

Moore’s seminal work in the development of the transactional distance theory has formed the basis for many of the distance education approaches seen today (Benson & Samarwickrema, 2009; Kang & Gyorke, 2008). The significance of this theory is conceptualising the various constructs of distance within an educational context. It is suggested that geographical distance can also cause psychological and social distance.

Termed *transactional distance*, this type of social and psychological distance can impact on students' learning and is essentially related to three main factors: the teacher, the learner and the means of communication between them (Moore & Anderson, 2003).

The application of this theory views the teacher and student interacting with each other within the structure of the course, where the student is supported to engage autonomously with learning, thus creating opportunities for dialogue. Teaching efforts are designed to reduce the transactional distance between the learner and the teacher, and to reduce any chance of potential misunderstandings. Essentially, the greater the dialogue between the teacher and student, the less transactional distance should occur (Gorsky & Caspi, 2005; Kang & Gyorke, 2008; Moore & Anderson, 2003).

Kennedy (2002) further describes other dimensions of distance which may impact on the learner as a result of the geographical divide. These include cognitive distances (gap in understanding that one person has compared with another), role distances (the gap in status between student and teacher), and access distances (a form of social geographical distance, such as access to library and tutors).

The practicality of linking the student and university together is mediated by various forms of technology and online learning materials. In fact, much of the higher education literature in relation to distance education is interspersed with other terms such as online learning, open learning, e-learning, computer-mediated learning and flexible or blended learning, which represents the online aspect now associated with many distance education programs (Collins, 2008; Kember, 1995; Mehrotra et al., 2001; Rudestam & Schoenholtz-Read, 2002; Simpson, 2002).

Given that the concept of decreasing transactional distance has been found to be important, many distance education providers approach and design programs to address the social construct of distance. When universities consider bridging this educational or

psychological distance, the pedagogy used is focused towards social interventions which foster engagement with the materials and connecting students, their peers and teachers in online environments (Kennedy, 2002; Mehrotra et al., 2001).

Moore and Kearsley (1996) conceptually summarised the elements of distance education systems, which encompassed the main components and processes of distance education institutions and programs, which is illustrated as Figure 1 (Moore & Kearsley, 1996, p.9). This figure highlights the interactions between the student (their needs and learning environment), the organisation, and the instructor

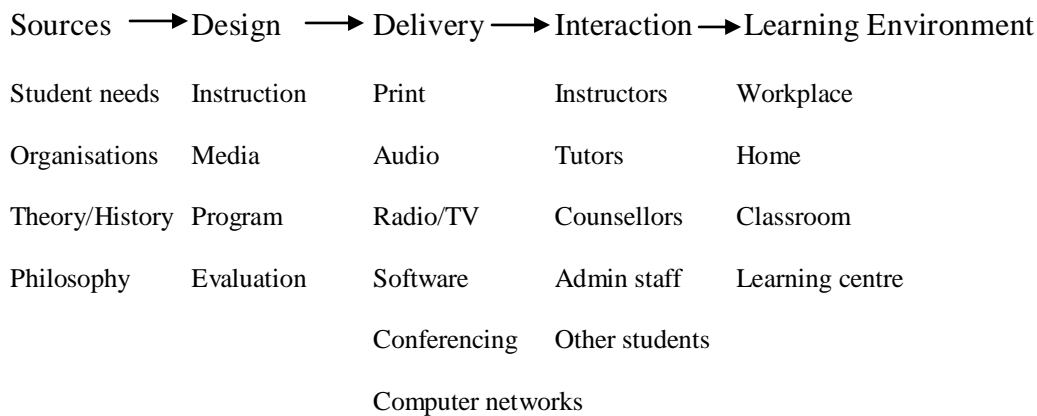


Figure 1. Systems Model of Distance Education

Distance education has seen continued growth. This has been due partly to a number of political and social changes, resulting in a greater value being placed on better access to higher education (Bradley, Noonan, Nugent, & Scales, 2008; Mehrotra et al., 2001; Rudestam & Schoenholtz-Read, 2002; Von Prummer, 2000). Accessing higher education by distance is often viewed as receiving an opportunity or “second chance”, for those who would otherwise have difficulty accessing traditional face-to-face study. This is described as being particularly relevant for women living at home with young children, those living in regional, rural and remote areas, students with physical disabilities for whom on-campus study may be

difficult, and those within institutions, such as correctional facilities (Collins, 2008; Lyall & McNamara, 2000; Mitchell, 2009, Richardson & Friedman, 2010; Von Prummer, 2000).

The advent of technology has also resulted in significant changes in the way that students can access and engage with learning material. Computer-based instruction, and the use of media such as wikis and podcasts, and software such as Second Life, via synchronous and asynchronous methods, all facilitate access to engaging and stimulating learning material, within non-threatening environments (Benson & Samarwickrema, 2009; Krause, McEwen, & Blinco, 2009; Mehrotra et al., 2001; Rudestam & Schoenholtz-Read, 2002).

In addition to the social changes which have occurred in accessing higher education, other factors have also impacted on the growth of distance education. These include: (a) an increasing emphasis on career advancement, (b) greater demand for flexible scheduling by those unable to fit within a traditional educational day, (c) growing markets for personal fulfilment courses, (d) greater emphasis on life-long learning, (e) professional need to keep skills and knowledge current, (f) greater shift towards student-centred learning, (g) greater awareness of differences in student learning needs, and (h) variations in students' willingness to participate in on-campus classes (Mehrotra et al., 2001; Von Prummer, 2000; Watts & Waraker, 2008).

There are certainly a number of advantages for students studying by distance, including better access to higher education for those who otherwise may find traditional university education unattainable. Furthermore, it offers opportunities for people to further their career aspirations or to engage in life-long learning, whilst remaining in paid employment (Rudestam & Schoenholtz-Read, 2002; Von Prummer, 2000; Watts & Waraker, 2008).

Challenges of distance education. Whilst there appear to be many advantages of studying by distance, this mode of study is not without its criticisms. It has been argued that this it may not be able to offer the richness of face-to-face instruction and interactions. It also suffers from an inability to offer the same degree of supports and resources, and carries associated high costs of infrastructure expenditure and staff training (Collins, 2008; Mehrotra et al., 2001).

In relation to recent distance education approaches, support models are akin to “after sales service models”. In these models, a successful student is seen as a product of a combination of several factors, namely learning materials and student support, in which the student receives access to a range of academic or non-academic supports (Kember, 1995; Simpson, 2002). Simpson (2002) argued that student support is vital in ensuring student retention, by addressing social isolation problems due to perceived distance, and ensuring that the educational approach is democratised in design, rather than authoritarian.

If students are viewed simply as receivers of a “product” where interaction should be kept minimal, then there may be limited opportunity to understand students’ needs and to develop symbiotic relationships. Whilst it should be acknowledged that not all students face challenges when studying by distance, the literature does provide some perspectives on how students may experience their study within both an academic and a social context. Students’ perceptions of themselves, the learning material, their teacher, peers, and the university, may all play an important role in how students learn and engage in their study. The more that transactional distance is perceived by the student, the greater the potential to experience isolation. How distance education is approached, including how relationships are formed, may greatly impact on how academic learning and support is facilitated (Mancuso-Murphy, 2007; Rudestam & Schoenholtz-Read, 2002).

While all university students may potentially experience stressors and strains related to their study, there are a number of challenges uniquely faced by distance students. One of the major challenges for students studying by distance is transitioning to the online environment (Dzakiria, 2008; Muilenburg & Berge, 2005). The online environment is such a broad concept, but often is categorised by computer mediated learning methods (either synchronous or asynchronous), accessing electronic resources, and the use of networked student learning groups (Rudestam & Schoenholtz-Read, 2002). Given the digital environment, students also need to have the necessary computer or technology skills to engage in online study. A lack of these skills is frequently cited as a stressor for students, and can be a contributing factor in student dropout (Lee & Choi, 2011).

Access to this technology is essential for student success; however many students have difficulty in either accessing or purchasing their own computer, or simply upgrading software (Willems, 2005). In addition, students also require adequate computer literacy skills, and must be able to reliably access the internet (including capacity and speed). Recent statistics in Australia indicate improvements (such as the national broadband network) in internet connectivity, with over 98% of internet connections being broadband. The most prevalent internet technology in Australia is mobile wireless broadband, with approximately 6 million mobile wireless connections (Australian Bureau of Statistics, 2013).

Despite improvements, students still report difficulties with internet access with their studies (Beckman, 2010; Kenny, 2002; Owens, Hardcastle, & Richardson, 2009; Willems, 2005). In terms of internet access, many rural and regional students experience great disadvantages due to poor broadband connectivity. Many people living in rural and remote areas can experience a 40% reduction in broadband access, compared with that of metropolitan areas (Australian Bureau of Statistics, 2007) and may pay more for their internet connection (Australian Bureau of Statistics, 2010).

One study of remote Australian students, found common difficulties due to broadband and satellite connectivity with slow transmission speeds, making downloading lectures and printed material difficult and communication via synchronous discussion difficult (Owens et al., 2009). Furthermore, students accessing their studies by distance in developing countries may have difficulties in accessing online material due to variable connectivity, resulting in an inability to download or stream material (Beckman, 2010). Such challenges experienced by distance students may increase anxiety, which may have a negative effect on student learning and wellbeing (Kenny, 2002; Mancuso-Murphy, 2000; Sit, Chung, Chow, & Wong, 2005).

Moreover, there may be hidden costs associated with study, which may result in financial stress and strain for students (Devlin, James, & Grigg, 2008; Lewis, Dickson-Swift, Talbot, & Snow, 2007). Much of the literature centres around the costs associated with accessing the online environment, for example, having to pay for an internet connection, which may prohibit engagement in lengthy online discussions and forum involvement (Nagel, Blignaut, & Cronje, 2009). It is arguable that students are expected to bear the costs with purchasing and upgrading computers and printers, handheld mobile devices, printing, and paying for high-speed internet costs, which may place further financial pressure on them (Willems, 2005).

Furthermore, engaging in part-time study may mean for many students a reduction in income, extending beyond the burden from other course related fees and expenses and may be associated with students missing classes to attend work (Devlin et al., 2008), thus affecting student engagement and attrition (Bird & Morgan, 2003; Devlin et al., 2008). Some students may also be required to attend residential schools or sit formal exams, which may also take time away from work and other commitments, as well as for some, the associated costs with travel, meals and accommodation. Given that many students who study at regional higher

education institutions come from low socio-economic backgrounds, financially, distance study may be a significant stressor (Richardson & Friedman, 2010).

In the context of health behaviours, having an understanding of these types of financial pressures is helpful when linking the effects to health behaviours and academic performance. To alleviate this financial pressure, some students may increase their work hours, which may in turn have negative effects on health and wellbeing. For example, students who work more than 20 hours a week have an increased likelihood of engaging in unhealthy behaviours, such as binge drinking, which may affect a student's ability to study, thus lowering their academic performance (Miller, Danner, & Staten, 2008).

The nature of distance study generally requires students to be less dependent on academic staff, thereby showing self-control and becoming self-managers of their study (Von Prummer, 2000). This self-autonomy is demonstrated when the student takes self-responsibility to engage with the learning materials. Much of the interest in higher education research has been focused on what predicts this degree of self-autonomy and other characteristics which predict academic performance and engagement. This includes research into aspects such as learning styles (Richardson, 2010), personality characteristics, such as, motivation (Offir, Bezalel, & Barth, 2007), academic engagement (Richardson & Newby, 2006) academic achievement (Offir et al., 2007) and the presence of learning difficulties which may impact on study success (West, 2011).

This self-autonomy is often described as skill in being able to "fit" study around one's personal life, which in turn may lead to greater time management efficiencies (Hagel & Shaw, 2006; Lyall & McNamara, 2000). It is arguable, however, that this increased flexibility does not always lead to better time management skills. In fact, many distance students may experience frustration with aspects such as problems with computers, leading to time inefficiencies (Owens et al., 2009). The realities of online learning, including the need for

adequate technical and computer skills, and online material often being too large to be downloaded efficiently (Andrews & Tynan, 2012; Dzakiria, 2008; Maring, Costello, & Plack, 2008; Owens et al., 2009; Willems, 2005), is a common source of frustration.

The attraction of distance study being more flexible to fit around home life, and the perceived creation of more time, may in fact contribute to additional pressures on students (Raddon, 2007). In this context, the responsibility for learning by distance occurs within the private sphere. The challenges of studying from home, are most commonly described in relation to female students (Von Prummer, 2000; Watts & Waraker, 2008), despite the fact that many men may equally experience this.

Von Prummer (2000) argued that women need to create both a physical and psychological space to study. With women experiencing disparities in the gender-related division of labour, particularly in relation to domestic duties (including caring for children or elderly relatives), these competing demands often take precedence over study, and women commonly feel that this restricts their studies (Von Prummer, 2000). It is therefore argued that this may set women up for failure (Cragg et al., 2005) and perpetuate traditional gender-related role patterns (Von Prummer, 2000).

Whilst the idea of study for women may be emancipatory, women nevertheless need to create environments conducive to study (Von Prummer, 2000; Willems, 2005).

Von Prummer (2000) described this domestic learning environment as follows:

The distance student is less likely to have a room of her own, where she can study in peace and concentrate on her academic work. She is more likely to be constantly interrupted and to be exhausted by the double or triple load she carries because of her many roles as homemaker, mother, student, and possibly carer of elderly or sick relatives, employee, volunteer, all of which are demanding and time-consuming. (pp. 78-79)

Students' negative emotions, such as feeling frustrated, can play an important role in the learning process, and can interfere with students' academic motivation and engagement in the learning process (Zembylas, 2008). For example, students choosing to study by distance may not be psychologically ready to undertake this form of learning (Dzakiria, 2008). Students may experience difficulties adjusting to an online learning environment without direct personal supervision from teachers. Students may also struggle with the need to be self-motivated to engage in learning tasks, and may experience difficulties in receiving teacher feedback, which inhibits their ability to gauge progress (Dzakiria, 2008; Muilenburg & Berge, 2005; Samarawickrema, 2005). The need to build student relationships and to offer timely and effective support is also seen as critical for academic success (Cameron, Roxburgh, Taylor, & Lauder, 2011; McLeod & Barbara, 2005; Nelson, 2007).

Within a social constructivist approach, learning is viewed as a product of social processes. This means that an affective domain of learning (how people interact and learn with and from each other) is also necessary for effective cognitive learning (Simpson, 2002). This approach is reflected in changes in online pedagogy, which embrace both the cognitive and affective components. This may be reflected in course design or student support, in that students whilst being self-autonomous to a degree, are far more connected with their peers and teachers to learn from shared experiences (Kim, Kwon, & Cho, 2011; Simpson, 2002; West, 2011).

Social connectedness has been found to be a mediating factor between stress and psychological distress (Aanes, Mittelmark, & Hetland, 2010), and as such, there is an increasing emphasis on the need to facilitate the social dimension of distance students' learning. This can be enhanced for example, with strategies such as online social interaction opportunities with peers and academics to facilitate socialisation, peer support and effective communication (Dzakiria, 2008; Mancuso-Murphy, 2007; Muilenburg & Berge, 2005; Sit et

al., 2005). Evidence of this affective aspect is often seen via technology media such as wikis, podcasts and social networking sites to build social relationships, and to bridge the “distance divide” (Boyle et al., 2010). The lack of social connectedness, or the affective component of study, can make studying by distance a potentially lonely experience (Forrester, Motteram, Parkinson, & Slaouti, 2005; Watts & Waraker, 2008). Furthermore, the lack of transition programs specifically designed for distance students may also contribute to the lack of connectedness with the university, and affect the student’s overall transition into study (Forrester et al., 2005; Scagnoli, 2001).

Distance students’ characteristics. According to Kantansis (2002) there are a variety of ways within Australia in which the term *student* may be contextualised or described. These may be in relation to gender, prior school experience, permanent home residence, citizenship, liability status (e.g., Higher Education Contribution Scheme), equity category (e.g., disability, non-English speaking background), enrolment type (e.g., full time, part time), course type (e.g., undergraduate), and basis of admission (e.g., school leaver or mature age).

With respect to how distance students are described within the higher education literature, there does not appear to be one distinct definition; however there do appear to be commonalities. Within an academic context, distance students are described as spending little time if any on campus, and predominantly use online technologies to access and engage with learning materials (Australian Council for Educational Research, 2012; Moore & Kearsley, 1996). Consequently, reference to distance students is often used interchangeably with reference to *online learners* or *external students* (see Appendix A). In addition, distance students may also be further categorised as domestic or international distance students (see Appendix A). Most distance students in Australia are domestic, given the greater proportion of these students (142,911) compared with international overseas students (11,713;

Department of Industry, Innovation, Science, Research, and Tertiary Education, 2013). In 2013, most domestic distance students were enrolled in the following fields of study: society and culture, management and commerce, education and health (Department of Industry, Innovation, Science, Research, and Tertiary Education, 2013).

In terms of age, whilst not a homogenous group, distance students often fit with descriptions of mature-age students (Fuller et al., 2011; Mancuso-Murphy, 2007), “non-traditional students” (Bennett, Evans, & Riedle, 2007; Sankey, 2006), or “adult learners” (McGivney, 2004). It is acknowledged that not all distance students will fit within these descriptions, as seen with rising numbers of younger students also taking advantage of distance study (Deka & McMurry, 2006; Open University, 2013). Nevertheless, most higher education literature indicates that distance students more often fit within the demographic descriptions of mature-age students (Fuller et al., 2011; Mancuso-Murphy, 2007).

Similar trends are found elsewhere in the world. Characteristics of distance students in the United States indicates that of 67 post-secondary institutions, the average age of students was 37 years, 55% of students were male as opposed to 45% female, 93% of students had access to the internet, and 34% of students had their tuition paid by their employers (Moore & Kearsley, 2011, p. 152). In the United Kingdom, the average age of a new undergraduate studying online was 31 years, with 9% of students over the age of 50, and 71% of students overall either working full or part time during study (Open University, 2013).

In Australia, finding data on ages of distance students is problematic. An extensive search of higher education statistics by the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education (2013) found no available data that matched age with various modes of study. Despite this, other statistics of Australian higher education students (from private and public institutions) indicated that 55.7% of students

were female, 70.4% of students study full-time, domestic students account for 72.8% of all students, and 1% of students enrolled in 2011, self-identified as Indigenous (Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education , 2013b). Domestic students in Australia study externally and usually study part time (110,830) rather than full-time (32,081), and were more likely to be female (Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, 2013b).

Open Universities Australia's demographics were also similar. More than half of students enrolled in online distance courses were female and over the age of 21, spoke English (and English was first language), lived in major Australian cities, and were employed full time or part time. In addition, one in ten were in full-time home duties, one in ten were seeking work, under half came from families where neither parent had tertiary qualifications, five per cent had a disability, and one quarter came from a lower socio-economic background, thus indicating the opportunities for widening access to higher education (Stone, 2012).

At USQ, distance students are more likely to be between the ages of 30-40, as opposed to on-campus students who are typically between 20-25 years (USQ, 2011). Most students at USQ study by distance, and are enrolled part time (16,126) rather than full time (3,097). Table 1 represents a breakdown of male and female part-time distance students in 2010 at USQ (USQ, 2011).

Table 1

Gender and Enrolment Type of Distance Students at USQ (2010)

Age years	Female Students		Male Students	
	Part time	Full time	Part time	Full time
<18	175	22	115	11
18-20	570	166	533	108
20-25	1737	697	1543	563
25-30	1689	321	1627	295
30-40	2416	349	2461	278
40-50	1279	124	1135	105
50-60	436	28	296	25
60 ⁺	56	2	58	3
Total	8,358	1,709	7,768	1,388

As indicated in Table 1, more females at USQ study part time (8,358) compared to males (7,768), with most students regardless of gender, studying between the ages of 30-40 years (USQ, 2011). Those studying by distance full time are more likely to be between 20-25 years. Therefore, understanding distance students requires an appreciation of the issues and challenges of mature-age learners.

Typically, mature-age students are likely to have had a break from study since high school (Bean & Metzner, 1985) and are typically older (i.e., over the age of 21 years; Burton & Ropolo, 2008; Burton, Taylor, Dowling, & Lawrence, 2009), than traditional school-leavers. In addition, mature age students typically study part time (enrolled in less than six courses per year), live off campus, and balance work and family responsibilities with study

(Fozdar, Kuman, & Kannan, 2006; Gilardi & Guglielmetti, 2011; Hermon & Davis, 2004; O'Brien et al., 2009; Russell et al., 2007; Taniguchi & Kaufman, 2005).

From a developmental and social perspective, mature-age students tend to be more inclined to commence study for personal fulfilment and career aspirations, whilst tailoring study commitments around work and family (Bauman et al., 2004; Hermon & Davis, 2004; Schaefer, 2009). Mature-age students are also described as being less influenced by peer groups, and generally are more motivated and focused towards meeting their academic goals than traditional students (Bean & Metzner, 1985; Bye, Pushkar, & Conway, 2007; Sorey & Duggan, 2008). They are more likely to have a greater sense of personal control, and have a higher self-efficacy and problem solving ability than traditional students (Bye et al., 2007). These characteristics have been identified as being positive factors in academic performance and progression (Bye et al., 2007; Hermon & Davis, 2004).

Whilst undergoing their study, mature-age students may go through a number of transition phases, including the development of skills and coping strategies (Drury, Francis, & Chapman, 2008; Watts & Waraker, 2008). For example, an Australian study involving nursing students found that other than requiring a strong motivation to study, the students needed to develop coping skills to help balance family and study commitments. It was found that a stable home life was critical for success in completing their studies, which included feelings of support by loved ones (Drury et al., 2008). These students sometimes experienced role conflict whilst attempting to forge a new identity. This may have resulted in conflict with perceived traditional gendered role stereotypes and their new identity as a student (Zembylas, 2008).

Mature-age students may also be described as being potentially vulnerable in terms of student retention and progression and may “drop out” of university due to a range of factors. These factors are often categorised as intrinsic (student-related) factors and/or extrinsic

(institutional factors). Intrinsic factors are described as issues such as sickness, study, family, or work balance issues, whereas extrinsic factors are related to course content, method of delivery, and course support (Coates & Ransom, 2011; Lee & Choi, 2011; Liu et al., 2007; Pierrakeas, Xenos, Panagiotakopoulos, & Vergidis, 2004). Distance students' attrition rates have been cited higher than that of traditional on-campus students (Barefoot, 2004; Dray, Lowenthal, Miskiewicz, Ruiz-Primo, & Marczynski, 2011), with some suggesting estimates between 10-40% of students enrolled in distance education prematurely leaving their studies (Angelino, Williams, & Natvig, 2007; Liu et al., 2007).

Many academic issues are common for all students regardless of study mode at the commencement of their study (e.g., unsure how to learn, unfamiliar with the pace and style of teaching, intimidated by the amount of work required). In addition, many students feel unprepared about studying by distance and have limited expectations (Moore & Kearsley, 1996). For example, some students may not anticipate working with other students or interactively with their lecturer (Baxter, 2012).

For students undertaking distance study, many have not been exposed to this type of mode previously. Many have misconceptions that somehow these programs may be 'easier' or require less work than traditional face-to-face programs. Students also may not understand their role in taking responsibility for their learning, and that they need to be proactive rather reactive (e.g., waiting for a prompt from their lecturer to begin their study tasks). These misconceptions may contribute to students feeling like they might not be keeping up and result in study disengagement and dissatisfaction (Moore & Kearsley, 1996).

In terms of adjusting to study, Kantanis (2002) summarised transition issues experienced by mature-age students to tertiary studies. These are listed as follows:

- lack of orientation programs suitably tailored for mature students;
- immediate necessity for computer literacy;

- attendance on a part-time basis;
- lack of confidence in their communicative competence regarding academic writing and oral presentations;
- ambiguous interaction with staff;
- ambivalent interaction and integration with school-leaver students in lectures, tutorials and practicals;
- heightened awareness of limited time – wanting every minute of university to “count”;
- fear of humiliation by school-leaver students – especially regarding ostracism due to age, potential difficulty understanding content and nature of assessment tasks;
- partner and/or family response to student’s desire to return to study;
- need to convince partner and/or family that study is “work”;
- friends’ response to a student’s desire to return to study;
- employer and work colleague response to student’s desire to return to study; and
- increased financial pressures, having relinquished full-time paid employment.

Despite this list being developed to highlight issues of mature-age students in general, many of these issues, except for the interaction and integration with school-leavers in an on-campus setting, would be applicable for distance students (Bird & Morgan, 2003; Cragg et al., 2005; Di Paolo, Hills, & Mahrre, 2009).

In terms of psychological attributes, mature-age students, as compared with their younger counterparts, have different motivations to study. Mature-age students want to prove their self-worth, are interested in learning skills to help others and make a difference, and tend to study for interest rather than performance (Bennett et al., 2007; Di Paolo, Hills, &

Mahrira, 2009; McCune, Housell, Christie, Cree, & Tett, 2010). First-generation older distance students in the UK have been found to aspire to acquiring knowledge that they can apply to their family life (Di Paolo et al., 2009). The motivation to study and to fit study around family meant for students that they needed to develop highly effective time management skills to fit study with their social circumstances.

In another study related to psychological attributes, personality variables such as extraversion, agreeableness, conscientiousness, emotional stability, intellect, and learning approaches (i.e., deep or surface) were compared between first year engineering students studying either on-campus or by distance (Burton & Dowling, 2010). This study found that distance students, who were older than on-campus students, were not different in their learning approaches, however scored more highly on conscientiousness and intellect than their younger on-campus counterparts. Conscientiousness was found to be an overall positive predictor of academic success in first year engineering, $r = .18, p < .05$. The advantages of being conscientious as a student, means that they are more likely to be persistent motivated and organised with their study (Burton & Nelson, 2006). These findings may indicate that older students have the advantage of being more conscientious with their studies which in turn may contribute to better academic performance.

In terms of main sources of student stress, adult learners have cited work or employment as being more stressful than personal or study issues (Giancola, Grawitch, & Borchert, 2009; Hermon & Davis, 2004). The reality for many higher education students is that they need to be in paid employment whilst studying. Approximately 37% of external students work more than 30 hours paid employment each week (Coates & Ransom, 2011). Whilst employment has many positives, such as becoming independent, receiving an income, acquiring job skills, and receiving social contact (Bradley, 2006), the challenges balancing work, study and family responsibilities are often cited as reasons for dropping out of

university or requiring significant support (Bean & Metzger, 1985; Coates & Ransom, 2011; Robot ham, 2008; Taniguchi & Kaufman, 2005; Tones, Fraser, Elder, & White, 2009).

In summary, the distance education context, including how the learner is encouraged and supported, as well as other social, technological and psychological factors, can play a part in shaping the student experience. The context is intertwined and complex, varying with each subjective student experience. For students choosing to study externally, the challenges associated often with being mature-age, may be further exacerbated by the tyranny of distance. A lack of study confidence and uncertainties around how study would fit with one's life, all have the potential to make the transition to distance study difficult. Having an understanding of issues in relation to concepts of distance and how students view themselves in relation to others, provides a context for determining how students may experience stressors and strains, and also how they may cope while studying.

The Concept of Health

Despite the concept of *health* being commonly referred to in the literature, there is no single accepted definition. Having “good health” or “being healthy” can mean different things to different people, and can be greatly influenced by one's own social and cultural understandings and previous illness experiences. Therefore, individuals create their own perceptions of health. These perceptions often form the foundation for how people make sense of their health and the extent to which they engage or do not engage in healthy behaviours. These lay understandings of health are important for those working towards improving the health of others. With respect to student health and wellbeing, understanding students' perspectives of their health are fundamental to being able to improve it. For example, student's perceptions about access to healthy food within the university environment may pave the way for improvement in services (Goodhart et al., 2006; Pedersen & Ketcham, 2009).

Beyond lay perceptions of health, a more formal concept of health views it as a resource. This holistic notion encompasses more than having a physical reserve. Having good health can allow individuals to cope with their everyday physical and social environment, depending on both social and personal resources (Denny & Earle, 2009). Holistically, health is viewed as incorporating a balance between biological, psychological, and social dimensions (Kelleher & MacDougall, 2009; Taylor, Foster, & Fleming, 2008).

From another perspective, health can also be viewed as a non-static state, which may fluctuate with periods of stability, instability or actualisation (Pender, Murdaugh, & Parsons, 2011). Actualisation occurs when a person has the ability to achieve a good state of health, enabling them to reach their full potential. This means that for students, their health may not remain the same throughout the course of their study. Being healthy can also be defined in terms of the strength of one's positive social relationships with others (Pender et al., 2011).

Thus, good health is seen as more than being well. The World Health Organisation defines health as, "a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity" (World Health Organisation, 2011), therefore health is viewed as both holistic and positive.

With respect to this study, promoting students' health and wellbeing is based upon positive and holistic notions. It does not assume that if students are not unwell, that they necessarily feel healthy. This is evidenced by the range of variables explored in this study, which are based on holistic dimensions of health, including social, mental, physical, spiritual and emotional health. Emphasis is on health-promoting behaviours, and not solely on health-risk behaviours.

Wellbeing. The concept of *wellbeing* itself appears to be closely linked with the concept of health. Often when student health and wellbeing is discussed in the literature, the construct of wellbeing seems to be added onto the construct of health, without being defined

or described by the authors distinctly, nor is it necessarily measured as a construct in its own right (Rosenthal, Russell, & Thomson, 2008). Wellness seems also to be defined in a similar way to health, such as the World Health Organisation's definition of health (La Fontained, Nielsen, & Parsons, 2006).

The concept of wellbeing is often described interchangeably with other terms in the literature, such as wellness and subjective wellbeing. Wellbeing is often categorised within domains such as psychological wellbeing, social wellbeing or emotional wellbeing. Each of these domains may also contain sub themes or constructs. For example, social wellbeing may involve aspects such as one's quality of their relationships and their appraisal of their acceptance within society (Negovan, 2010).

Whilst some may view wellbeing as a single entity or as an outcome, much of the health psychology literature describes it as a multidimensional concept. Subjective wellbeing, for example, can be seen as having both affective and negative aspects, seen as both *hedonistic*, where it is viewed as a sense of happiness and pleasure with an absence of pain. In contrast *eudemonic* wellbeing, views wellbeing as a process of trying to achieve one's full potential and functioning (Neoga, 2010). Individuals will often self-evaluate their lives in terms of their relationships with others, their direction or purpose in life, and general satisfaction with components of their life. One's appraisal of the balance between various dimensions of life consequently leads to an overall sense of wellbeing.

One of the many conceptual models for understanding the dimensions of wellbeing is the Wheel of Wellness (Myers, Sweeney, & Witmer, 2000). The Wheel of Wellness developed from a 1991 model, defines wellbeing as "a way of life orientated toward optimal health and wellbeing, in which body, mind and spirit are integrated within the human and natural community" (Myers et al., 2000, p. 252).

According to this model, wellness is based upon a set of characteristics across a lifespan which create wellness. Wellness is influenced by a number of life forces and extrinsic forces which may impact either positively or negatively on one's sense of wellbeing. Because the components of the wheel are interrelated and interconnected, change that occurs in one area may have an effect in another area, either negatively or positively. Within a counselling context, individuals are often encouraged to make positive changes by actively taking steps to bring their life back into balance (Myers et al., 2000). Wellness therefore is seen to be both positive and non-static. It is a process of balance throughout one's life, rather than being viewed as an overall outcome.

Within the higher education sector, there is expanding literature on the effects of wellbeing on health behaviours and academic outcomes. Research indicates that higher levels of psychological distress are associated with lower levels of wellbeing. Berwick, Koutsopoulou, Miles, Slaa, and Barkham's (2010) study found that psychological wellbeing fluctuated throughout a student's degree. Students' psychological wellbeing decreased after pre-registration, until the commencement of studies in first semester. Between year one and year three, there was a 30% decrease in psychological wellbeing. Additionally, higher levels of anxiety were experienced in semester one, across years one and three, and levels of depression were highest in year three (Berwick et al., 2010). Compared with preadmission data, students' levels of distress did not return to pre-university levels, indicating deteriorating psychological wellbeing over the course of their degree (Berwick et al., 2010).

In contrast, Stallman's (2010) study, found that first year students had less psychological distress than subsequent year students, and that postgraduate students had even lower levels of distress than both first year and subsequent year undergraduates. It is surmised that postgraduate students may have more highly developed coping and problem solving skills, based on previous study and life experiences, and have a greater self-efficacy

in being able to confidently deal with problems, compared with younger students (Stallman, 2010). Given the differences between year of study and level of program, this provides further support to the idea that the student body is not homogenous, and that distress may be experienced differently across the student body. Moreover, a key issue for both traditional and non-traditional students is to take into account transition issues affecting academic progression and overall study success (Christie, Tett, Cree, Hounsell, & McCune, 2008; Krause & Coates, 2008).

High levels of psychological distress have been found both to lower academic performance, and also to increase problems in functioning, often resulting in a period of reduced ability to perform in their work or study (Stallman, 2008, 2010). In addition, higher levels of distress have been found to be negatively correlated with help-seeking behaviours among university students (Stallman, 2010). Of concern is that amongst students experiencing high levels of distress, approximately one third of students do not seek professional help during their studies (Stallman, 2010).

These findings have important implications for universities providing support during peak times throughout the year and for different cohorts of students. Given that psychological wellbeing seems to be poorer when at university, compared with wellbeing prior to commencing university, strategies to help students deal with the challenges of academic life are warranted.

A poor sense of wellbeing may be associated with health-risk behaviours. For example, higher levels of psychological distress have been found to be significantly correlated with an increased number of sexual partners (Burris, Brechting, Salsman, & Carlson, 2009). This may increase the risk of unwanted pregnancy, and sexually transmitted infections. It is arguable that students may use these risky behaviours as a coping mechanism for other stressors and strains (Burris et al., 2009). This is further supported by Schwartz et

al. (2011), who found that poor psychological wellbeing was associated with a higher frequency of sexual risk behaviours such as casual sex, $0.50, p < .001, 95\% \text{ CI } [0.40, 0.61]$.

Lower levels of wellbeing have also been associated with dangerous drug use (including hard drugs and inhalants), and the misuse of prescription drugs. It is interesting to note that having a higher sense of wellbeing appears to be a protective factor for men more than for women, particularly in relation to using harder drugs (Schwartz et al., 2011).

Of the various constructs of wellbeing, eudaimonic wellbeing appears to be more predictive as a protective factor for many health-risk behaviours than subjective or psychological wellbeing (Schwartz et al., 2011). This may be due to the fact that students who consider their lives as fulfilling and satisfying are less likely to resort to health-risk behaviours to relieve boredom, or use them as a negative way to cope with a problem in their life. This has implications for not only health-risk behaviours, but also for academic outcomes. Students who are balanced in each wellness dimension, may be more likely to perform better in terms of their grade point average (Horton & Snyder, 2009), than those who feel less balanced.

In terms of wellness and health-promoting behaviours, Gieck and Olsen's (2007) study explored self-efficacy and knowledge of wellness factors as predictors of positive exercise behaviours in obese and sedentary students via an 11-week walking program. In this context, self-efficacy and knowledge was related specifically to certain health behaviours (e.g., physical activity), and whether students felt they had the knowledge and confidence to engage in the behaviours. As a result of the weekly program, there were increases in knowledge of wellness and feelings of self-efficacy. Those with increases in knowledge of wellness and feelings of self-efficacy in turn were able to increase their physical activity levels (e.g., resistance training), and to decrease their body fat after one month (Gieck & Olsen, 2007). At a one month post-test of knowledge related to class topics (e.g., hydration,

stretching, emotional wellness), t-tests indicated that all students increased significantly their knowledge and had sustained this for the one month period. These findings should be considered with caution, given the lack of clarity around the study measures as such, the high drop-out rate from participants who exited the study prematurely (particularly males), and the short time period following the intervention which may not indicate longer term sustained change.

In summary, having a balanced sense of wellness or wellbeing, appears to be socially and academically protective, and negatively associated with health-risk behaviours.

Wellbeing is a multidimensional construct which needs to be considered for all students, regardless of study mode, having important implications for university health promotion and support services provided to students.

Socio-ecological models for health promotion. There is no one single definition of health promotion and sometimes the terms *health education* and *health promotion* are used interchangeably in the literature. Health promotion is described “the process of enabling people to increase control over and to improve their health” (Pender et al., 2011). Others, however, have described it as combinations of health education and activities to strengthen the skills and capabilities of groups to make sustainable change, which may include organisational, environmental, economic and socio-cultural changes (Keleher, MacDougall, & Murphy, 2007; Linsley, Kane, & Owen, 2011). The basic premise is that health promotion aims to influence the broader social context of health behaviour (Glanz, Rimer, & Viswanath, 2008).

This approach requires the recognition that health is greatly influenced by the reciprocal interaction between a person and their environment. The determinants of one’s health are seen to be a combination of influences from social, political, economic, environmental, genetic, and behavioural factors (Keleher et al., 2009). These interactions can

be greatly influenced also within specific environments, or settings, in which people work, live and play (Keleher et al., 2007).

Socio-ecological models of health promotion therefore focus not only on individual factors towards promoting health, but also on factors within the social and physical environment which may affect health. In this context, the social and academic environments are seen to be significant in shaping an individual's health and wellbeing, and to affect how one responds to and copes with the environment. To improve health at a population based level, it is well recognised that many interventions from multiple levels are required to initiate and sustain behaviour change (Baum, 2008; Glanz et al., 2008; Linsley et al., 2011).

Socio-ecological models of health promotion have been used within workplaces to improve physical activity (Pronk & Kottke, 2009), in schools to address obesity (Lee, Ho, & Keung, 2010), within higher education in understanding alcohol beliefs and behaviours (Barry, 2007), and exploring barriers to physical activity (Gyurcsik, Spink, Bray, Chad & Kwan, 2006). Often these models are utilised as a foundation for a settings-based approach to health promotion.

McLeroy, Bibeau, Steckler, and Glanz's (1988) ecological model for health promotion advocates that interventions to improve health should consider interventions at interpersonal, organisational, community and public policy levels. These include *interpersonal factors*, such as attitudes, behaviour and skills, *interpersonal process and primary groups*, such as formal and informal social networks, *institutional factors*, such as organisational structures and processes and health program diffusion, *community factors* between organisations and informal networks, and *public policy* within a local, state and national context. Implicit within the ecological model of health promotion is that any of these factors could be the focus of targeted interventions to modify behaviour (McLeroy et al., 1988).

Socio-ecological models of health consider the distal factors that influence health, such as social conditions, rather than purely individualistic approaches to health promotion. Within this framework, it is argued that effective university-wide health promotion require a staged, planned approach, based on ecological understandings of health promotion. This acknowledges the multiple and complex array of social conditions within which health behaviours occur. This is fundamental in developing the future strategies which are both multidimensional and participatory (Baum, 2008; Fleming & Parker, 2006).

In the context of this study, for universities to consider ways to improve student health and wellbeing they must firstly have the necessary understanding of the extent to which health may be affected and of the issues which may be amenable to change. Within an organisational context, it is important to understand students' perceptions of the role the university may play in improving their health. Therefore exploring students' health and wellbeing should be in the context of ecological perspectives, which acknowledge the multitude of factors which can in combination impact on the student (Byrd & McKinney, 2012). Understanding health from a socio-ecological perspective provides the context for understanding how health can be supported within a university environment, such as seen within a health promoting university approach.

The health promoting university. As previously discussed, placing health within the context of environment, views health as an interaction between physical and social worlds. It is well recognised that many of these influences or *determinants of health* lie outside the realm of the health system as such, where we work, play and live. One of the guiding principles in promoting health within a settings approach is to actively engage with the community of interest and to empower them to make positive changes (Baum, 2008; Tsouros et al., 1998).

Universities have been considered an important setting for health promotion, much like schools, workplaces and cities (Doherty & Dooris, 2006; Kwan, Arbour-Nicitopoulos, Lowe, Taman, & Faulkner, 2010). The concept of the *health promoting university*, founded on a healthy settings approach, is one which considers the complex interplay between individuals and the broader social, economic, political and physical environment, but within the context of a university system (Baum, 2008; Doherty & Dooris, 2006; Dooris, 2001, 2002; Tsouros et al., 1998; Whitehead, 2004). It acknowledges that student learning is at the core of academic institutions, and that health promotion should serve to support students, and create healthy learning environments (American College Health Association, 2005).

Most health related interventions and strategies in higher education have focused on 18-24 year olds often in relation to topics such as mental health, sexual health, physical activity, and healthy eating. The widening participation agenda, as well as an emphasis on recruitment and retention of students, has seen the quality of the overall student experience given more priority (Dooris & Doherty, 2010).

The concept of the health promoting university was derived from other World Health Organisation's settings-based approaches, including Healthy Cities, Healthy Schools and Healthy Hospitals. An inaugural health promoting universities conference was first held by the University of Lancaster in 1996, followed by a World Health Organisation round table the subsequent year, which saw the development of a strategic approach to health promoting universities.

The health promoting university has been described as follows:

The concept of the health promoting university means conducting more health education and health promotion for students and staff. It means integrating health into the culture, processes and policies of the university. It means understanding and dealing with health in a different way and developing an action framework that blends

such factors as empowerment, dialogue, choice and participation with goals for equity, sustainability and a health-conducive living, working and learning environment. (Tsouros et al., 1998, p. 11)

The value of improving health within a university may not only protect and promote the health of students and staff, but can also integrate the concept of health across faculties and disciplines within teaching and research, and have the capacity to develop closer connections with the community through health-focused initiatives and supports. Whitehead (2004) stated that “the major role of any university is the incorporation of health-related strategies that seek to overcome the institutional barriers to health, whilst mobilising the necessary community resources to support this aim” (p. 467).

This is not to detract from the aim of universities as learning institutions, but infers that health promotion programs and interventions must take a more holistic approach. This means that strategies need to be considered beyond that of a traditional medical/preventative framework, that is, solely behavioural or individual based health education, to considering factors which may drive behaviour in the first instance. This may extend to developing or strengthening local community partnerships to support students beyond services provided by the university, or changing assessment practices to foster better mental health (Dooris & Doherty, 2009).

Incorporating philosophies of health within the university setting requires organisational, management and systems strategies, to facilitate a healthy university environment. This is a whole-of-university perspective, influenced by policies, procedures and systems which articulate a general ethos of student health and wellbeing. This may, amongst other things, incorporate explicit values of diversity and equity (Dooris, 2001, 2002; Whitehead, 2004).

Described as social ecosystems, universities influence student health and wellbeing, through policies such as sustainable business practices, administrative processes that minimise frustration, learning and teaching such as curriculum changes to include health promotion courses and electives and paying attention to the physical environment, for example, creating healthy menus, all of which may influence students' health and wellbeing (Dooris, 2001).

A simplified model for conceptualising the Healthy Settings Approach to Higher Education is provided as Figure 2 (Dooris, Cawood, Doherty, & Powell, 2010. p. 6) and an expanded version of the model provided in Appendix B (Dooris et al., 2010. p. 7).



Figure 2. Healthy Settings Approach to Higher Education

Figure 2 represents the processes involved in creating a whole of university approach to health. The overarching philosophy is based upon aspects such as equality and diversity, empowerment and partnerships. A healthy university should also consider both higher education drivers, for example, student recruitment and retention, and public health drivers, for example inequalities and mental wellbeing. Each stage requires input and processes from

operational planning and management, including implementation plans. The model also includes ways in which the whole of system approach may be measured in terms of deliverables, such as higher quality health and welfare services, and impacts, such as improved business performance and productivity, and staff and student retention; Dooris et al., 2010).

There are a number of Australian universities which have embraced the Health Promoting Universities framework including the University of the Sunshine Coast, the University of Adelaide and the University of Western Australia (e.g., the “Fit for Study Framework”). Some of the interventions from these universities include dedicated websites for student health and wellbeing, seminars, and collaborative research partnerships between the university and other health agencies.

The motivation for universities to support healthy students could be driven from a number of perspectives. Arguably they are first and foremost institutions associated with learning and research. Nevertheless, they are also major employers, but are also places where people seek support and socialise (Tsouros et al., 1998).

The retention and recruitment of students is a continuing pressure in universities. It is acknowledged that the “student experience” is more than teaching and learning alone, and that ensuring student wellbeing is also important. This extends to students being able to not only remain at university, but to perform academically and adjust to study (Dooris & Doherty, 2010; Trockel et al., 2000).

Moreover, universities may play a key role in not only inspiring personal growth but in developing and building active citizens (Dooris & Doherty, 2009). This extends to higher education’s role in local and regional communities, where higher education can play a significant role in health and economic success. Leaders nurtured within the university can also play a key role in advocating and leading change in the future (Dooris & Doherty, 2009).

Creating supportive environments for students may also be good for staff. This may have a flow-on effect on staff morale and engagement, increased staff satisfaction, decreased turnover, and higher productivity (Dooris & Doherty, 2009; Nohammer, Stummer, & Schusterschitz, 2011). Finally, sustainable development, climate change, and health are inextricably linked. This is seen to be good not only for social development, but also for economic development (Dooris & Doherty, 2010; Orme & Dooris, 2010). More broadly universities can also play a key role in increasing public understanding of the links between climate change and global health (Orme & Dooris, 2010).

In summary, universities are considered important settings to promote and support student health and wellbeing. Incorporating elements of a health promoting university framework sees universities as systems, in which health promoting initiatives can be supported through their processes and ethos. This framework views health holistically, and requires multiple strategies to improve health.

Challenges supporting students' health and wellbeing in a university

environment. One of the major challenges for universities, as in any large organisation, is the process of change. Changing towards a health promoting university model requires a rethink about how the university “does business”. Some of the challenges towards universities becoming more health focused are that (a) the health projects may be viewed as “yet another project”, (b) management may prefer “not to get involved”, preferring to take a conservative approach to health issues, and (c) the lack of acknowledgement that the university as a system may be influencing student health and wellbeing by way of policies, practices and decision making (Baum, 2008; Byrd & McKinney, 2012; Doherty & Dooris, 2006; Dooris, 2001; Dooris & Doherty, 2010).

Much of the literature on university health promotion is derived from the United States, from large networks of universities supporting student health and wellbeing, such as

the American College Health Association. This association is a lead organisation in college health and has developed national college health documents such as *Healthy Campus 2010*, the *Standards for Practice for Health Promotion in Higher Education*, and the *General Statement of Ethical Principles and Guidelines* all of which provide a framework for addressing student health within a holistic perspective (American College Health Association, 2005).

In the United Kingdom, the health promoting universities approach has been gaining momentum, with moves to develop a national programme. In 2006, a Teaching Public Health Network was established which acknowledged the importance of universities as healthy settings (Dooris & Doherty, 2010). Guidelines for Mental Health Promotion in Higher Education also developed in the UK by the University Mental Health Advisors Network, has been designed as a source of guidance in developing policies, procedures and activities to promote positive mental health (Crouch, Scarffe, & Davis, n.d).

However, within Australia no such guidelines exist, nor is there a visible health-promoting university movement. More broadly, there is little published evidence of student health considered part of a broader positive concept of health within a university environment, which considers multi-strategy approaches.

In addition, there appears to be limited literature and an evidence base related to health promotion within Australian higher education. Whilst some emerging literature does exist in relation to Australian students, it has a biomedical focus (Reger et al., 2002). Previous research has explored the prevalence of health behaviours such as psychological distress related to young on-campus students (Stallman, 2008, 2010) suicidal ideation, anxiety and depression (Wilson & Deane, 2010), tobacco smoking, (Howatt et al., 2010) alcohol consumption (Epler et al., 2009; Utpala-Kumar & Deane, 2010) attitudes and knowledge about risk behaviours such as smoking (Clark, McCann, Rowe, & Lazenbatt, 2004) or

preventative behaviours such as active commuting (Cole et al., 2008) or emergency contraception (Calabretto, 2009).

The problem with these single issues is that often addressing them alone does not address the underlying social and physical environment which may shape the student's behaviour (Doherty & Dooris, 2006; Whitehead, 2004). Traditional individually focused health education programs tend to assume that people have the capacity to make the necessary changes to improve their health, without taking into account how their social circumstances may also influence health behaviours (Keleher, 2007; Thombs, Dotterer, Olds, Sharp, & Raub, 2004). For example, risk-taking behaviours such as binge drinking and unsafe sexual practices has been found to be more prevalent in co-educational residential environments than in same-sex residential colleges (Willougby & Carroll, 2009) and the culture of drinking games in college can encourage binge drinking behaviour and sexual behaviour (Pedersen & La Brie, 2007). Therefore, any single strategy approaches to reduce alcohol consumption may be ineffective in addressing the many underlying social factors which contribute to these behaviours (Croom et al., 2009).

In addition, orientation processes for distance students (when in existence) often lack an "affective component" (socially connecting students via welcoming activities) and hence students may feel further distanced from the university, thus affecting mental health (Forrester et al., 2005). For on-campus students, aspects such as the physical environment including students' access to recreational programs can be barriers to physical activity (Leslie, Mounsey, & Owen, 1998; Pedersen & Ketcham, 2009) and cheap bar prices may encourage binge drinking (Dunne & Somerset, 2004). Without taking into account the extrinsic factors which may influence student health and wellbeing, this can lead to victim blaming, where the student is seen to be solely responsible for poor health choices.

Addressing student health issues appears to be considered largely within the context of the range of health services provided to students, typically within on campus based student services sections. Some student health centres have been established within universities where they operate as an academic medical centre. In this case, they are designed for university students to gain practical experience within clinics. As a result many of the student health issues targeted towards students are focused on vaccine and immunisation requirements, infection control or reducing the risk of blood borne pathogens exposure (Veaser, Hembree, & Bonner, 2008).

University services should however be reflective of the broad range of supports which assist students throughout the course of their study, which may include counselling and careers development. Within this context, another challenge for university health promotion is to ensure that student services' staff responsible for health promotion, are competently trained and receive ongoing professional development (Davidson, 2008; Whitehead, 2004).

Typically, non-academic student services include: medical and health services, health education, legal help, counselling and career support, support for international students, accommodation, employment options and advocacy services (Perozzi & O'Brien, 2010). Student services provide a broad range of services, such as scholarships and financial assistance, counselling support, student representation, health and medical services, disability resources, careers and employment support, study equity support and accommodation assistance. This range of services commonly reflected in the higher education literature, is indicative of the recognition of the broad range of supports needed to support students whilst studying (Perozzi & O'Brien, 2010; Russell, Thomson, & Rosenthal, 2008).

However, it should not be assumed that simply because the services exist, students are aware of them, know how to access them, or will access them (Dunn, 2005; Russell et al., 2008; Ryan, Shochet, & Stallman, 2010; Schweitzer, 1996; Yorgason, Linville, & Zitzman,

2008). Furthermore, a study involving 1202 postgraduate and undergraduate students found that almost half of all students surveyed, reported having not received any type of health information from the university, such as information on smoking, violence prevention, pregnancy prevention and the importance of physical activity (Kwan et al., 2010). It has previously been found that although many on-campus students know how to access help for course-related issues, they generally lack knowledge and awareness of how to access help for problems such as financial difficulties, sexual harassment, and emotional distress (Schweitzer, 1996).

If this is an issue for on-campus students, of concern is how distance students similarly experience this. Specifically in terms of distance students, there is sparse literature either in relation to the health and wellbeing needs of distance students, or to the range of services available to them. There is some evidence that students may not always access traditional on-campus student supports, often perceiving them as an “after-thought” to their study experience, or simply not being aware that they exist (Scheer & Lockee, 2003). In terms of attrition, distance students tend not to cite reasons to drop out of study due to the lack of student support services; however, they may perceive them as enablers, along with their own personal motivation (Nichols, 2010).

It is argued that services and interventions need to be better tailored for increasing numbers of non-traditional students studying by distance education, given that their needs are quite distinct from those of traditional students (Christie et al., 2008; Dzakiria, 2008; La Padula, 2003; Scheer & Lockee, 2003). Whilst considered integral to students’ university experience, the accessibility of these types of services to those studying off campus is certainly an issue. La Padula (2003) stated that, “one of the biggest gaps in online education is an institution’s inability to provide time and location independent access to a complete array of student support services” (p. 120). It is arguable that this may be due to viewing

distance students as “ancillary” or “marginal”, and that the students are somehow “different from the norm” (La Padula, 2003). Therefore, they may not be seen as part of core business to the university (Kennedy, 2002).

La Padula’s (2003) study found that of students studying online, more than half expressed a need to obtain assistance and support with careers guidance, parenting and time management, and access to an online psychologist for mental health issues. This is further supported by Bauman et al. (2004), who found that non-traditional students reported being likely or very likely to seek career counselling services, given that many students returned to university for career purposes (Bauman et al., 2004).

Thinking about improving one’s health whilst studying may not be high on a student’s list of priorities. They might not see a relationship between their health and their study (Dooris, 2001). Students may also resist health promotion messages (Crossley, 2002) as they become almost immune to the overuse of messages about the need to be healthy. Improving one’s health, therefore, may only be considered when ill health is experienced or when it impacts on their study. Moreover, if students themselves do not perceive a relationship between their health and their academic journey, then valuing an improvement in their health may not take precedence in their thoughts.

Another challenge facing health promotion in universities is ensuring that strategies aimed at improving students’ health, are in fact student-centred, and that students themselves have been involved in part of the planning process. Few studies have either conducted research with students or elicited their views on health issues within universities. Despite this, one study involved university students in a Photovoice project, which involved taking photos of images which represented their concerns around the university. The students identified key issues such as lack of access to condoms and sexual health information, and the lack of nutritious campus food (Goodhart et al., 2006).

Dunne and Somerset (2004) obtained undergraduate and graduate students' views in the UK on their perceived health needs and views on university health promotion. Students themselves reported three main reasons for health needs: adjustment to life at university, health-related lifestyle behaviours and the provision of student support services, such as dental and medical services (Dunne & Somerset, 2004). The key health issues raised by students were in relation to alcohol, drugs, healthy eating and mental health. One of the limitations of the study is that focus groups were largely held with young students under the age of 25. Despite attempts by the researchers to involve a more representative student sample, the students' issues in the focus groups may be unlikely to represent those of mature-age students, or those studying externally. If health initiatives are created as a "top down approach" by management, participation by students may be limited (Baum, 2008). Therefore engaging students and staff together in the process of change is critical.

Moreover, there is evidence that holistic strength based approaches can be effective with students. For example, problem solving programs may help students adjust to university, decrease stress and promote goal setting (Beccaria, 2010; MacCann, Fogarty, & Roberts, 2010), supporting work/life balance through developing positive coping strategies (Higgins, Wharf, Yew, Bratseth, & Morley, 2009; Stallman, 2010) and developing positive social relationships through peer interventions (Boyle et al., 2010; Mayne & Wu, 2011).

How health messages are delivered can be an important factor. Research indicates that students may prefer health information to be given in a more light-hearted way to engage with the overall health message. Sensitive issues such as sexual health may be more acceptable if presented in alternative learning formats, so that students can explore in their own time, via emails and websites, thus minimising embarrassment (Dunne & Somerset, 2004). Health centre staff themselves have been cited as a common believable source of health information and may address many of these sensitive issues (Kwan et al., 2010).

In summary, many of the factors that influence students' health and wellbeing are often invisible, and are a complex interplay between the natural and built environment and other social, political and economic determinants of health extrinsic and intrinsic to the university. Challenges exist for supporting students' health and wellbeing beyond individualistic and biomedical approaches to address health-risk behaviours. Many supports for students exist in traditional student services; however they may not adequately address the needs of the whole student cohort including those studying by distance.

Health-Promoting Behaviours

Health-promoting behaviours are broadly defined as, "self-initiated actions directed toward enhancing an individual's level of health and wellbeing" (Felton, Parsons & Bartoces, 1997, p. 363). Health-promoting behaviours such as stress management, improving social networks, engaging in physical activity, and eating a balanced diet can all help to reduce chronic disease and improve overall health and wellbeing (Allen, 2010; Boshoff, Dollman, & Magarey, 2007; Kwong & Kwan, 2007, Pender et al., 2011).

Health-promoting behaviours have been well researched within both community and clinical populations (Arras, Ogletree & Welshimer, 2006; Kwong & Kwan, 2007; Lo, 2009; Pender et al., 2011; Wilson, 2005; Yoo, Slack, & Holl, 2010). A number of demographic variables have been found to be predictive of health-promoting behaviours, such as age, marital status, gender, employment status and level of education.

Age has also been shown to be a significant predictor of health-promoting behaviours (Eshah, 2010; Gill & Loh, 2010; Kreutz, Ginsborg, & Williamon, 2009; Pirincci, Rahman, Durmus, & Erdem, 2008). Arras et al. (2006) found that men over the age of 45 years engage in more stress management and health responsibility behaviours (Arras et al., 2006). Being married also seems to positively predict health-promoting behaviour (Al-Kandari, Vidal, &

Thomas, 2008; Gill & Loh, 2010), in that married people are more likely to engage in health-promoting behaviours than those not married.

In terms of gender as a predictor of health-promoting behaviours, studies have found mixed results. Whilst some research indicates that women tend to engage overall in more health-promoting behaviours (Al-Kandari et al., 2008; Felton et al., 1997; Trockel et al., 2000), some studies have found no gender differences (Hui, 2002; Pirincci et al., 2008).

Where differences have been found, there appear to be differences in the types of behaviour. For example, women may be more inclined to engage in behaviours such as: refraining from smoking and drinking, sleeping adequate hours and eating breakfast. Men, on the other hand, are more likely to engage in behaviours such as exercise, maintaining their healthy weight and not snacking (Soffer, 2010).

Demographic variables, education level and being employed are positively correlated with health-promoting behaviours (Arras et al., 2006; Gill & Loh, 2010). Arras et al. (2006) found that 66% of the total variance in total health-promoting behaviours can be accounted for by age, education, income, self-reported health and self-efficacy beliefs.

In addition to demographic variables, a number of psychological variables also predict health-promoting behaviours. These include self-reported health, health value, self-efficacy, positive affect and satisfaction with life. Self-reported health is the self-perception of one's overall health status, and is commonly used in large scale population-based surveys as an indicator of health status. It can be influenced by an individual's health history, lifestyle and demographics. Individuals with higher self-reported health state fewer barriers to adopting health-promoting behaviours (Arras et al., 2006; Sohng, Sohng, & Yeom, 2002). In contrast, those with poor self-reported physical health tended to show higher rates of psychological distress (Australian Institute of Health and Welfare, 2010).

In terms of health-promoting behaviours, individuals who rate their health as good or excellent are more likely to have a healthy weight, to have never smoked, and to eat four or more serves of vegetables each day (Australian Institute of Health and Welfare, 2010). Poor self-reported health may also increase one's likelihood of accessing health information from the internet; however, this is likely to be due to those seeking descriptions of conditions and information about treatment and management (Reinfeld-Kirkman, Kalucy, & Roeger, 2010).

It is argued that the use of self-reported health status should not be used as a sole indicator of perceived health status. Rather, self-reported health should be considered within the context of the demographics of the population, for example, age, gender, race, ethnicity and education (Banerjee, Perry, Tran, & Arafat, 2010). With respect to age, self-reported health status tends to decrease with age (Australian Institute of Health and Welfare, 2012). Other socio-economic variables including education, income and occupation have also been found to have an inverse relationship with self-reported health. People with lower incomes, lower levels of educational attainment, and working in unskilled occupations are more likely to report poor health (Australian Institute of Health and Welfare, 2012).

In terms of preventative health behaviours, health value has been identified as one of many *motivational mechanisms*, along with perceived health status and self-efficacy, which can influence the uptake and sustainability of health-promoting behaviours (Jackson, Tucker, & Herman, 2007). Placing a positive value on health predicts engagement in health-promoting behaviours in college populations more than the influence of family or friends (Jackson et al., 2007). Health value is commonly described as the degree to which a person considers it important to be in good health (Kristiansen, 1985; Reifman, Barnes, Dintcheff, Uhteg, & Farrell, 2001; Ritt-Olson et al., 2004).

Health value appears to be influenced by self-efficacy, which is positively correlated with health-promoting behaviours (Bandura, 2004; Lau, Hartman, & Ware, 1986). Thus,

people who place a high value on their health are more likely to engage in behaviours to prevent ill health (Lau et al., 1986). The significance and relationship of health value has been explored in the context of both health-preventative behaviours (Kristiansen, 1985) and health-risk behaviours (Chernoff & Davison, 1999). The value placed on health, as well as perceptions of one's ability to plan and carry out a course of action (self-efficacy), are considered two important behaviour-specific cognitions that influence the adoption of health-promoting behaviours (Karademas & Kalantzi-Azizi, 2004).

The likelihood of adopting a health-promoting behaviour is also regulated by emotions, in that a healthy behaviour can elicit an emotional reaction or affect, and if positive, is more likely to be repeated (Pender et al., 2011). Conversely, having a positive affect or mood may increase the likelihood of being open to adopting new behaviours by being responsive to health promotion messages (Riet, Ruiter, Werrij, Candel, & Vries, 2010). Having a positive affect is therefore described as the extent to which a person feels enthusiastic, active and alert. In contrast, an individual who experiences higher levels of negative affect feels anger, guilt, fear or nervousness (Watson, Clark, & Tellegen, 1988).

Research has found relationships between positive affect and health outcomes, from both biological and social processes. From a biological perspective, positive affect may reduce cortisol levels and blood pressure, which in turn may decrease the risk of cardiovascular disease (Chesney et al., 2005; Steptoe, Dockray, & Wardle, 2009). From a social perspective, positive, happy people tend to report greater social connectedness, engage in more adaptive coping, and perceive positive social support. They may also be more likely to engage in positive health-promoting behaviours and have better self-reported health (Kelsey, McEvoy De Villis, Begum, Belton, & Hooten, 2006; Steptoe et al., 2009). This also relates to the construct of life satisfaction. Being satisfied with one's life, has been shown to positively predict health-promoting behaviours, increase a sense of wellbeing, which in turn

predicts healthy behaviours (Becker, Glascoff, & Mitchell, 2007; Grant, Wardle & Steptoe, 2009; Wang, 2001).

There have been numerous citations in the literature of the relationship between health-promoting behaviours and stress, strain and coping. Often, research is focused on three main interactions: (a) the relationship between variables such as stress or mindfulness on health-promoting behaviours (Khubchandani, Nagy, Watkins, Nagy, & Balls, 2009; Roberts & Danoff-Burg, 2010), (b) the effect of health-promoting behaviours as mediators between stress and coping, or as a buffer between other variables, such as role strain and somatic complaints (Pomaki et al., 2007), or (c) the effect of coping on health-promoting behaviours, with health-promoting behaviours as an outcome variable (Bianchi, Zea, Poppen, Reisen, & Echeverry, 2004).

In essence, health-promoting behaviours have been found to be negatively correlated with stress. As such, high levels of stress may decrease the engagement in health-promoting behaviours (Cress & Lampman, 2007; Gill & Loh, 2010; Khubchandani et al., 2009; Soffer, 2010). For example, Soffer (2010) measured stress in relation to job and study stress, family stress such as marital strain and general stress. Particularly in relation to predicting stress, general stress had a significant, though minimal effect, between gender and the types of health-promoting behaviours. Although women tended to engage in more health-promoting behaviours than men, they were more likely to refrain from adopting health-promoting behaviours when stressed.

Secondly, as a buffer for stress, health-promoting behaviours have also been found to decrease psychological distress and act as a mediator for role strain (Pomaki et al., 2007). In terms of strain, in particular role strain, caregivers have been found to have lower levels of engagement in health-promoting behaviours than non-caregivers (Acton, 2002; Lo, 2009).

Health-promoting behaviours of university students. Within the context of higher education, there is an emerging body of literature exploring the concept of health-promoting behaviours, recognising the value of students' health and wellbeing. Studies, however, tend to focus on the extent to which students engage in health-promoting behaviours, either at one particular point in their academic progression, or longitudinally, from the beginning to the end of their study. In addition, most studies have been conducted in countries other than Australia such as Kuwait, United States, Turkey, Hong Kong, Istanbul, Canada, Jordan, United States and the United Kingdom. There has only been one Australian study that the researcher is aware of, which has explored health-promoting behaviours in university students.

Moonmuang (2005) explored the extent to which Australian males (18-41 years) engaged in health-promoting behaviours, and how these behaviours related to daily stressors. This study found that there was a significant negative correlation between stress, using the Daily Stress Inventory (Brantley & Jones, 1989), and total health-promoting behaviours (HPLPII). In addition, there were significant negative correlations between stress and the following subscales of interpersonal relations ($r = -.24, p = .01$), spiritual growth ($r = -.15, p = .02$), and stress management ($r = -.14, p = .03$). To date there have been no studies in Australia which have examined health-promoting behaviours of female students, nor compared on-campus and distance students.

The health promotion literature in higher education tends to focus on undergraduate students studying in a health-related field, between the ages of 17-25 years, who are single, and often supported financially by family (Al-Kandari & Vidal, 2007; Peker & Bermek, 2011). Most commonly however, studies have been conducted on nursing students in on-campus environments (Abdu-Moghli, Khalaf, & Barghoti, 2010; Al-Kandari & Vidal, 2007; Al-Kandari et al., 2008; Haddad, Kane, Rajacich, Cameron, & Al-Ma'aitah, 2004). First, this

focus may be due to nursing academics having a strong interest in health-promoting behaviours. Secondly, nursing programs often contain large numbers of readily accessible and diverse students. Thirdly, the survey instruments are often developed from health disciplines such as nursing.

Most studies exploring health-promoting behaviours of university students have done so within the domains of health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations and stress management, using younger traditional students (Al-Kandari & Vidal, 2007; Haddad et al., 2004; Hui, 2002; Kreutz et al., 2009; Lee & Loke, 2005; Peker & Bermek, 2011; Soffer, 2010), however findings are inconsistent. Despite younger students found to be more likely to engage in physical activity than mature-age students, mature-aged students have been found to engage in higher levels of self-care (Hermon & Davis, 2004; Myers & Mobley, 2004).

In relation to gender, whilst some studies have found differences between health behaviours of men and women, in relation to physical activity levels and health responsibility (Al-Kandari & Vidal, 2007; Soffer, 2010), others have found no significant statistical differences (Lee & Loke, 2005). Despite this, some consistent findings have emerged. Female students tend to engage in less physical activity and have poorer nutritional habits than males; however, they are also more confident than males in discussing problems with others (Soffer, 2010). Additionally, older students appear also to engage in more positive health behaviours such as stress management, and hold more positive beliefs about health in general, than younger students (Al-Kandari & Vidal, 2007; Kreutz et al., 2009; Lee & Loke, 2005; Moyle et al., 2007).

Few studies have examined the relationship between health-promoting behaviours and academic performance, or adjustment to college (Al-Kandari & Vidal, 2007; Anderson & Ongsoco, 2010; Ansari & Stock, 2010; Becker et al., 2009). In terms of grade point average

(GPA) and wellness, Becker et al. (2009) surveyed 2140 predominantly young freshman, on-campus females, using a “salutogenic wellness” promotion scale. In this context, salutogenesis refers to the origins of health in contrast to pathogenesis, which emphasises a positive view of health (Becker et al., 2009).

Although the students’ discipline area was not stated in the demographics of the study, the degree to which students engaged in actions within social, emotional, intellectual, vocational and environmental domains appeared to be widespread across the university. Whilst Becker et al. (2009) found that the various wellness measures positively correlated with GPA (total scale $r = .13$, $p < .001$), this was greatly influenced by a vocation construct, for example, value of work and study, with a minimal effect size noted ($r = .26$, $p < .001$).

Trockel et al. (2000) studied first year undergraduate students in the United States in relation to exercise, sleep habits, nutrition, mental health and stress management, time management, social support and spiritual health, and analysed the effects on GPA. Findings indicated that studying spiritually orientated material, eating breakfast and using a planner to organise time, all positively predicted GPA. However, the findings may be questionable given that it was not clear which measures were used in the survey, and whether these measures were reliable and valid. Furthermore, there was no clear indication of the extent to which GPA had been affected by the various health variables (Trockel et al., 2000).

Al-Kandari and Vidal’s (2007) study examined non-bachelor nursing students, aged 17-35 years, and found no clear relationship between health-promoting behaviours and academic performance ($r = .05$, $p > .05$). Eating a healthy diet has also been found to positively predict GPA, as well as other factors such as time management and decreasing leisure time (George, Dixon, Stensal, Gelb, & Pheri, 2008). George et al. (2008) found that a healthy diet was one of seven main predictors of GPA ($\beta = .124$, $p = .041$, $r = .30$, $p < .001$).

It is acknowledged that health-promoting behaviours are conducive to students' good health and wellbeing, however previous research is inconclusive regarding the exact nature of the relationship between these behaviours and academic outcomes. Engaging in health-promoting behaviours such as regular exercise and getting adequate sleep, may moderate the effects of stress and decrease depressive symptoms and somatic complaints (Pomaki et al., 2007). Further research in this area is warranted.

Satisfactory and positive social support has previously been found to provide a buffer for stress in university students, which in turn, may decrease the risk of mental health problems (Hirsch & Barton, 2011; Tajalli, Sobhi, & Ganbaripناه, 2010). Conversely, social support may positively predict engagement in health-promoting behaviours (Jackson et al., 2007; Mohamadian et al., 2011), or may assist in the transition to study and coping with the demands of balancing study and family (Steele et al., 2005).

In summary, a number of demographic and psychological variables have been found to predict the likelihood of a person adopting a health-promoting behaviour. These variables may be influenced by psychological characteristics and dispositions, but are also influenced by many social relationships, for example how one perceives their level of social support. The exploration of these student behaviours is becoming more widespread in tertiary settings; however, most include younger female samples, who are predominantly studying nursing or a health-related field. Given the limited literature in relation to health-promoting behaviours, particularly with mature aged university students, and the lack of research with distance students specifically, any comparability with the current literature on health promoting behaviours is problematic. Whilst health-promoting behaviours are generally considered important for general health and wellbeing, there is limited evidence of the relationship with student outcomes, such as GPA and intention to leave. This study aims to redress this imbalance.

Health-Risk Behaviours

A health risk factor can be defined as “health-related behaviours and conditions that can increase the risk of a health disorder or other unwanted condition or event, and they include both modifiable and non-modifiable factors” (O'Brien, 2005, p. 2). Most risk factors are broadly considered as behavioural, biomedical, environmental, and socio-economic.

Much of the literature on health risks with university students tends to focus on health-risk behaviours such as sexual risk behaviours, poor nutrition, physical inactivity, and alcohol and drug consumption and sleep disorders (Ansari & Stock, 2010; Burriss et al., 2009). For example, Rohrer, Cole, and Schulze's (2012) study with online students found that cigarette smoking lowered the odds of good self-reported health (OR = 0.27, $p < .001$), CI [.11, .70] and distress also lowered good self-reported health (OR = 0.08, $p < .05$), CI [.01, .64].

Ansari and Stock's (2010) study examined the associations between health awareness, health behaviour, subjective health status, satisfaction with their education experience, with three educational outcomes (i.e., actual mark, perceived own performance, and importance of achieving good grades). Placing an importance on achieving good grades was found to be negatively correlated with binge drinking (Ansari & Stock, 2010). In another study, optimism was found to be the strongest predictor of reducing psychological distress in university students (Burriss et al., 2009).

Much like health-promoting behaviours, health-risk behaviours can be influenced by cognitive, motivational, situational and/or social factors. For example, mood states such as negative affect have been found to increase self-reporting of physical symptoms in a college population (Jorgensen & Richards, 1989), increase psychological distress (Decker & Borgen, 1993) and increase the risk of a depressed mood state (Steptoe, O'Donnell, Marmot, & Wardle, 2008). Peer pressure has been related to the uptake of negative health behaviours, such as increased alcohol consumption by university students (Pedersen & La Brie, 2007). In

general, many negative health behaviours, such as drug and alcohol use or making unhealthy food choices, are often designed to enhance mood or deal with stress, therefore leading to maladaptive behaviours (Schleicher, Harris, Catley, & Nazir, 2009; Steptoe et al., 2009).

Generally, the behaviours seen to be most significant in terms of disease burden in Australia include tobacco smoking, physical inactivity, poor nutrition and alcohol misuse (Australian Institute of Health and Welfare, 2012). These behaviours were also chosen to be included in this research, because of the growing evidence that these behaviours may be amenable to positive change through organisational interventions (Bellew, 2008).

There is a substantial body of literature concerning the high prevalence of health-risk behaviours such as alcohol misuse and sexual risk of younger, on-campus university students (Davey, Davey, & Obst, 2002; Pedersen & La Brie, 2007; Rickwood, George, Parker, & Mikhailovich, 2011). However, there is little evidence that these health-risk behaviours contribute to disease burden in Australia for non-traditional students. Additionally, there is little evidence for distance students or online students, and this study aims to redress this imbalance.

Providing interventions to reduce health-risk behaviours in young people is important. However, failure to consider mature age students may result in significant negative health outcomes. For example, Gillman, Kim, Alder, and Durrant (2006), found that many students studying and living off campus had an increased risk of suicidal ideation; thus the on-campus study experience may, in part, offer protective social interactions and relationships for these at risk students (Gillman et al., 2006).

Mental health is considered a significant health concern with university students (Storrie, Ahern, & Tuckett, 2010). Recent prevalence statistics in Australia indicate that approximately one in five people experienced a mental health disorder within the previous 12 months (Australian Bureau of Statistics, 2008). Mental health disorders are often categorised

as mood (depression), anxiety (social phobias) and substance use (alcohol misuse) disorders. Anxiety related disorders are the most common amongst the disorders, with women typically experiencing higher levels than men. Substance use is often more common in men than women, and with younger people between the ages of 16 and 24. In addition, those with a mental health disorder are more likely to experience higher levels of psychological distress (Stallman, 2010). In terms of mental health, nursing students have reported factors such as learning difficulties, stress, relationship difficulties and depression and anxiety, as all being factors which may impede their academic performance (Kernan & Wheat, 2008).

Higher levels of psychological distress have been found in university students than in the general population (Cvetkovski, Reavley, & Jorm, 2012; Stallman, 2010), hence negatively impact on academic performance (Stallman, 2010). Higher amounts of psychological distress may increase the risk of students considering leaving their studies before completion (Watson et al., 2009). Even competitiveness experienced between students in programs of study such as Law, has been found to increase levels of distress in students, resulting in a decreased sense of wellbeing (Stallman, 2012b). Failing to address psychological distress in students may contribute to an increase in mental health problems such as anxiety and depression, which in turn may affect a student's academic performance (Stallman, 2010).

Developmental challenges for young students culminating from increased freedom, increased decision-making away from home, potential conflict with family beliefs, and pressures to do well have all been found to increase levels of psychological distress (Stallman, 2008). For international students, cultural and language barriers may contribute to poor mental health and social isolation (Hyun, Quinn, Madon, & Lustig, 2007).

There is growing evidence of how health behaviours can negatively impact on students' GPA. In terms of academic performance, factors such as poor sleeping patterns,

excessive daytime sleepiness and inconsistent wake-up times, can be predictive of lower academic performance (Ansari & Stock, 2010; Gaultney, 2010; Kernan & Wheat, 2008; Trockel et al., 2000). Additionally, being sleep deprived can lead to fatigue and confusion (Pilcher & Walters, 1997). Sleep problems also appear to be more prevalent for those with a low GPA (Gaultney, 2010) and affect more women than men (Buboltz, Brown, & Soper, 2001; Forquer, Camden, Gabriau, & Johnson, 2008; Gaultney, 2010).

In terms of sexual health, risk behaviours such as unprotected sex (not wearing a condom), having multiple and frequent partners, places the student at an increased risk of contracting a sexually transmitted infection or having an unwanted pregnancy (Scholly, Katz, Gascoigne, & Holck, 2005). This may have the potential to not only compromise students' academic success, but result in life-altering changes (Scholly et al., 2005).

Student Stress

The term *stress* has a common usage in modern life, with references to feeling or being stressed, and factors that can lead to stress. Whilst stress may be perceived in negative ways, for example, experiencing major events in one's life such as a death in the family, stress may also be associated with positive events such as travelling on a holiday. Furthermore, there are individuals that report that they function better with a degree of stress, which may aid performance. The phenomenon of stress has been widely researched with many perspectives from biophysical sciences, biochemistry, learning theory, developmental psychology, sociology and anthropology (Aldwin, 2007). Depending on the field of study, may also dictate how stress it will be measured.

The term *stressor* (the factor that causes the stress) may often relate to academic or social pressures. Jones and Creed (2012) describe a stressor as "an event that appears likely to an observer to produce stress" (p. 213). Stressors more broadly may be defined as catastrophes (e.g., natural disasters), significant life changes (e.g., loss of a job), daily hassles

(e.g., traffic congestion; Myers, 2005) or living in an aversive physical environment (Aldwin, 2007).

In fact, Ryan's (2009) study of 161 male and female college students, found that daily hassles such as parking and standing in long lines (66%) are perceived as more stressful than academic failure (40%). Ryan (2009) surmised that these minor hassles were frequently experienced on a daily basis, and that students may have little control over the events leading to increased stress levels. Whilst an accumulation of these daily hassles may contribute to ongoing stress, they may also be symptomatic of other role related stressors. Jones and Creedy (2012) differentiated hassles from stressors by defining hassles as "minor events that cause irritation, or aggravate existing health conditions" (p. 217) as opposed to stress which is considered "a perceived imbalance between demands and resources" (p. 214).

Student stress is important for two reasons. Higher levels of negative stress may affect students' academic performance and experience of study (American College Health Association, 2008; Kernan & Wheat, 2008; Ward Struthers, Perry, & Menec, 2000). Stress can also contribute negatively to health and wellbeing and increase engagement in health-risk behaviours (Chiauzzi, Brevard, Thurn, Decembrele, & Lord, 2008; Hudd et al., 2000). For working adults, high perceived stress has been associated with decreased physical activity levels and increased fat consumption (Ng & Jeffrey, 2003).

Theoretically, stress can be viewed as both a *response* and a *stimulus*, with stress viewed as the result of a *transaction* occurring between an individual and their immediate environment (Aldwin, 2007; Lazarus & Folkman, 1984). How an individual perceives stress and how they respond to it, involves a range of cognitive, affective and coping factors (Rice, 2000). Lazarus and Folkman (1984) described this transaction as involving the process of cognitive appraisal, in which there is "an evaluation of a particular encounter, and its various facets, with respect to its significance for wellbeing" (p. 31). For example, a student might

perceive a mock exam as a positive opportunity to revise learning before an exam; another student might perceive it as a negative event which highlights knowledge deficits and consequently this student experiences high levels of stress. The duration, rapidity of onset of the stress, and fluctuations of stress are all important in the stress process (Aldwin, 2007).

Many stress studies have had a strong vocational element, for example, studying the stress of nursing students, and others studying in health or social care related fields (including psychology). Often these studies use a quantitative approach where stress is measured using specific stress inventories; however this assumes that the measures are representative of the common stress situations faced by the modern day student. One criticism is that previous research has often failed to consider the individual variations of how students appraise and respond to their stress (Robotham, 2008).

Whilst there may be an assumption that stress may be a part of modern day life, and that commencing study may contribute to stress levels, it is widely recognised that university students experience significantly higher rates of stress when studying. This is despite students also having the opportunity to experience eustress (positive stress) at university (Robotham, 2008). Robotham (2008) conducted a literature review of studies in relation to stress and higher education and found that most stressors centred around stressors related to studying (e.g., deadlines, fear of failure), examinations, transition, studying in a different country, and financial issues (e.g., taking part-time employment to pay for costs with study, and living expenses).

Cultural influences may alter students' perceptions and reactions to academic stressors. In a comparative study of Chinese and American college students, Chinese students perceived low learning efficiency and competition as being the top academic stressors, whereas American college students were more stressed about examinations (Li, Lin, Bray, & Kehle, 2005; Misra & Castillo, 2004).

Academically, students' stressors are commonly related to examinations, assignments, coursework and interactions with academic staff (Jovic et al., 2012). Additional stressors such as clinical stressors, for example being exposed to patient suffering or death, can be experienced by specific disciplines, including nursing and medical students (Gibbons, Dempster, & Moutray, 2009; Jimenez, Navia-Osorio, & Diaz, 2010; Jovic et al., 2012).

For distance students specifically, a number of stressors have been cited in the literature. These include feelings of isolation (Cousineau et al., 2004; Dearnley, 2003; Forrester et al., 2005; Kwon, Han, Bang, & Armstrong, 2010), difficulties adjusting to technology and lack of computer skills (Andrews & Tynan, 2012; Dzakiria, 2008; Goode, 2010; Lee & Choi, 2011), feeling overloaded with discussion forums (Peters & Hewitt, 2010), transitioning to online study (Fey, Emery, & Flora, 2008; Forrester et al., 2005; Scagnoli, 2001) and challenges around developing student role identity (Watts & Waraker, 2008). In addition, distance students often find challenges in "putting their ideas out there". Often discussion forums require comments and content knowledge, and being online may make students feel insecure and critiqued by other students and their lecturer (Peters & Hewitt, 2010).

Students' age may also be a factor in experiencing stress. Younger school-leaver students may experience stress related to transitioning to the university environment, and adjusting to living away from home, whereas older students may experience stress related to having to give up work or reduce work hours to support their study, and juggling multiple demands (Bennett et al., 2007; Giancola et al., 2009; Robotham, 2008). Generally in the Australian population, approximately 12% of Australians report stress in the severe range, with young adults (18-25 years) experiencing higher levels of anxiety and depression than in the general population (Casey, 2011).

The most common stressors for Australians were financial issues followed by personal health and the health of others. Interestingly, the most common ways in which adults dealt with stress was spending time with friends (60%), listening to music (55%) and watching television (55%). Some age differences occurred with younger Australians choosing more self-orientation or hedonistic means of reducing stress, whereas older adults were more likely to engage in activities such as reading (Casey, 2011).

From a developmental perspective, transitions between various stages of one's life marked by periods of adjustment and/or potential challenges may also cause stress (Miller, 2010). These may include early life experiences, education and career transitions, relationship transitions, and even maturation and health transition periods. As the diversity of the student cohort in higher education expands, it is important to acknowledge that each student would bring their own set of experiences and circumstances which will shape their perceptions and ways of coping (Miller, 2010). Given that stress can be cumulative and experienced chronically by students, but may be amenable to change; this is of importance and requires further investigation.

Student Strain

Students may react to stress emotionally, physiologically, cognitively and behaviourally (Robotham, 2008). Whilst there may be many outcomes of stressors, strain is considered a key outcome of the stress process (Spector, O'Connell, & Chen, 2000), and typically include personal and academic strains. A *strain* has also been defined as “the repeated or constant occurrence of a minor stressor” (Jones & Creedy, 2012, p. 218), therefore is considered a response to stressors.

Most strains discussed in the literature are related to personal strains which may include role strains (e.g., conflict between work and family commitments), financial strains (e.g., the need to commence work to meet study costs), and relationship strains, such as an

unsupportive partner or marriage breakdown (Bitsika, Sharpley, & Rubenstein, 2010; Ford & Schroeder, 2008; Gershuny & Rainey, 2006; Lowe & Gayle, 2007). Furthermore, burnout has been found to be an important predictor in student engagement. Alternatively, academic strains include negative encounters with academic staff, poor social adjustment in the university environment (Chae, 2010; Forrester et al., 2005; Poyrazli & Kavanaugh, 2006), an inability to achieve one's set academic goals, (achieving poorer grades than anticipated), an inability to meet academic workload demands (Ford & Schroeder, 2008; Nichols, 2010; Willems, 2005), and problems navigating the online environment (Dzakiria, 2008; Owens et al., 2009).

In terms of personal strains, higher education students experience role strain along three dimensions: (a) role conflict from incompatible demands, (b) role overload (not having enough time to meet demands), and (c) preoccupation with one role whilst trying to perform another (Gershuny & Rainey, 2006). Mature age students often have competing demands of work, family and study, and therefore may experience difficulty juggling these demands (Chur-Hansen, 2003). Students often have to prioritise family and work over study, and this may negatively impact on their academic performance, particularly if they are faced with spending less time on their study (Gershuny & Rainey, 2006).

Particularly for mature age students, attempting to manage multiple roles including being a wife/husband, mother/father, employee, daughter/son, caregiver to parents, and a student can be especially difficult (Gershuny & Rainey, 2006, p. 167). Particularly with childcare arrangements, women often find the demands of finding affordable and accessible childcare and convenient course timetabling prohibitive in attending on-campus study (Gershuny & Rainey, 2006; Lowe & Gayle, 2007; Von Prumer, 2000). This role strain can be further exacerbated by other personal or social circumstances, for example, a marriage breakdown, caring for an elderly relative, or financial strain due to a reduction in work hours

(Gershuny & Rainey, 2006; Home, 1998), or an unsupportive partner whilst studying (Chur-Hansen, 2003; Lowe & Gayle, 2007; Prumer, 2000).

Financial strain can also be an issue for students from rural areas, where poor cash flow from farms may add additional financial burden (Lewis et al., 2007). Given that many students need to supplement their income due to the high costs of university study, this has the potential to impact on job strain. As a result, some students may work longer hours or be prepared to work in low paying jobs which may feel “unsatisfying”. The financial burden of university study can not only impact on overall life satisfaction and wellbeing, but also with the university experience (Gerrard & Roberts, 2006; Nelson et al., 2008; Zhang & Kemp, 2009). Gerrard and Roberts’s (2006) study of non-traditional female students found that financial strain resulted in self-doubt in continuing their study, negative impacts on their physical health, and strained interactions with their children. For many of the women in the study, their financial pressures whilst studying (either having to make ends meet, or find more work) weighed heavily on them. Many had experienced somatic complaints, and most “had not fully appreciated the consequences of financial hardship on their studies”, nor had they anticipated the degree of costs associated with their study (Gerrard & Robert, 2006, p. 399). These findings have implications for universities in providing realistic and practical information to students before commencing studies, but also having in place schemes and supports which may support their financial capabilities. This may be through promoting scholarships, payment plans or advertising opportunities to purchase second-hand textbooks.

In terms of the relationship between strain and health, an increase in strain is generally related to poor mental health outcomes. These may include higher levels of psychological distress (Bewick et al., 2010), an increased risk of depression (LaMontagne, Keegel, Vallance, Ostry, & Wolfe, 2008; Losoncz & Bortolotto, 2009; Musil, Warner, Zauszniewski, Wykle, & Standing, 2009) and lower self-reported health (Bainbridge,

Krueger, Lohfeld, & Brazil, 2009). In addition, strain may increase somatic complaints and negative health behaviours, for example smoking and the use of non-medical prescription drugs (Ford & Schroeder, 2008; Lee & Gramotnev, 2007). Academically, strain may increase academic dissatisfaction and disengagement (Zhang & Kemp, 2009). The strain of tertiary study has also been found to decrease engagement in recreation time and physical activity (Bitsika et al., 2010).

Further to psychological or social strains, students may also experience physical strains. Given the advent of technology, students are spending an increasing amount of time in front of computers. Ergonomic factors such as poor lighting, posture, and workstation design, for example the type of desk and chair can play a role in computer strain. In addition, the visual distance between student and computer monitor, position of the keyboard, length of time spent on the computer at one time, and the number of breaks in study are identified as risk factors for upper extremity disorders (Hupert et al., 2004). Commonly, the overuse of computers may result in eye strain, pain in the upper extremities, wrist tendonitis, and muscle strain, such as back complaints (Hamilton, Jacobs, & Orsmond, 2005; Hupert et al., 2004; Katz et al., 2002; Schlossberg et al., 2004).

A study involving 194 undergraduate students found that 42% of students experienced upper extremity pain or discomfort whilst using the computer over a two week period. A total of 41% reported at least one functional limitation and 9% reported it had negatively affected their academic performance. Furthermore, 10% of the students experienced symptoms within the first hour of using a computer (Hupert et al., 2004).

In summary, students may experience strain in response to various negatively perceived stressors associated with social, financial and academic commitments. One of the most common strains is role strain, particularly if students are balancing family and work life,

and these demands may be in conflict with their academic study (Gershuny & Rainey, 2006; Lowe & Gayle, 2007).

Student Coping

How a student copes with their stressors and strains is significant for personal and academic reasons. Coping has been defined as “constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984, p. 141).

Lazarus and Folkman (1984) outlined two forms of coping; *problem-focused coping* and *emotion-focused coping*. *Problem-focused coping* is described as a set of active strategies designed to define the problem, weight up pros and cons, learn new skills to make a change, and take action towards change (Lazarus & Folkman, 1984; Park & Adler, 2003). *Emotion-focused coping*, on the other hand, is designed towards decreasing emotional distress or dealing with emotions as a result of the problem (Lazarus & Folkman, 1984; Park & Adler, 2003). For example, seeking support from friends or taking a walk, can help when events are unlikely to change (Lazarus & Folkman, 1984). Two types of coping are often used simultaneously when someone is dealing with a stressful situation. Problem-focused coping attempts to deal with the problem which is causing distress; emotion-focused coping regulates the emotions associated with the stressor (Lazarus & Folkman, 1984; Park & Adler, 2003). Previous research indicates the older students tend to use more problem-focused coping strategies and are better problem solvers in general than younger students (Haight, Hill, Nardi, & Wallis, 2000).

How well students cope is influenced by variables including demographics and other psychological variables such as motivation, personality traits, ethnicity, and other social influences, such as family, friends and the university environment (Forbus, Newbold, & Mehta, 2011; Oswalt & Riddock, 2007). In terms of student coping, the higher education

literature describes a range of diverse coping strategies and behaviours (Bogdan, Rioux, & Negovan, 2012; Steele et al., 2005).

Students may engage in a range of proactive coping strategies, such as commencing assignments early, creating a study plan, seeking help and finding information. They may also engage in distractive coping behaviours, such as watching television, visiting friends or engaging in other leisure activities, to the detriment of their study time (Kausar, 2010).

Visiting friends generally is seen to be a key strategy for reducing stress in female students (Forbus et al., 2011; Steele et al., 2005). Lack of perceived social support, has also been found to be a predictor of suicide risk in college students (Hirsch & Barton, 2011) and increased risk of psychological distress and stress (Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000) and poorer adjustment to university (Asberg, Bowers, Renk, & McKinney, 2008). For younger students, family remains a significant influence in helping new students transition into the academic environment, for example, encouraging the new student to “get to know their lecturer”, and encouraging them to persist with their career choice, even if they feel discouraged (Klink, Byars-Winston, & Bakken, 2008).

Few differences have been found between the coping styles of traditional and non-traditional students. Non-traditional students are more likely to engage in proactive coping strategies such as seeking study help, and spending time forming relationships with their lecturers, and to prioritise demands, as opposed to younger students, who tend to use more distractive or avoidant coping strategies (Forbus et al., 2011; Heiman, 2004; Steele et al., 2005).

From a health perspective, most of the coping literature in relation to students explores the effect of ineffective or maladaptive coping on health. Negative coping can contribute to increased psychological problems, such as distress (Khawaja & Dempsey, 2007) and depressive symptoms (Chou, Chao, Yang, Yeh, & Lee, 2011; Laurence, Williams, &

Eiland, 2009), or increased engagement in negative health behaviours. Poor or maladaptive coping is associated with increased alcohol consumption (Pritchard, Wilson, & Yamnitz, 2007) and smoking behaviour (Sun, Buys, Stewart, Shum, & Farquhar, 2011). On the other hand, the use of problem-focused coping and emotion-focused coping has been found to increase psychological wellbeing, and avoidance emotion coping was found to lower psychological wellbeing in first year medical students (Park & Adler, 2003).

In contrast, little research has focused on positive health behaviours that students use to cope with their studies. More research is needed to understand the strategies used by distance students or older students in general. One study of graduate students found that health-promoting behaviours such as accessing counselling, using aromatherapy, exercising, getting a massage, or going to yoga, can help students cope with the stressors of study (Oswalt & Riddock, 2007).

A literature search conducted within Academic Search Complete, EBSCOhost and PsycINFO using the terms “coping”, “coping strategies” and “distance students” revealed limited research. One study of students enrolled in a distance-based master’s rehabilitation counsellor program, found that students relied on problem-focused coping and social support to cope with their studies, rather than emotion-focused coping, for example, blaming themselves, using wishful thinking or avoidance strategies (Kampfe, Smith, Manyibe, Sales, & Moore, 2009).

Wiesenberg (2001) found that distance students coping methods changed throughout their program reflected by the analogue of a “roller-coaster ride”. Students brought to their studies strategies which they would already use to deal with stress (whether effective or not). However over time, this study found that students began to use strategies such as reading for guidance, seeking external support (non-family), or compared their situation favourably against others. By the end of their studies, students’ situations were often perceived as more

positive than the initial adjustment at the beginning of their study, however they perceived less support from family than the start, but became more effective at prioritising time (Wiesenberg, 2001).

Finally, a comparative study between non-traditional graduate students studying on-campus and those studying by distance was conducted exploring the differences between perceived stressors and coping styles (Ramos & Borte, 2012). The average age of participants was between 25-30 years, most were white (43.3%), were married (31.7%) and most were employed on a full-time basis (47.5%). The only significant finding across all coping styles was emotional discharge (i.e., taking frustrations out on others), with on-campus students having higher scores. In terms of all other coping styles, there were no significant differences. Whilst there were no significant differences in terms of demographics and stress and coping, those working part time had less stress than those working full time (Ramos & Borte, 2012). Despite high levels of perceived stress by all students in the study, the means of the positive coping sub-scales such as logical analysis, seeking guidance and support, positive reappraisal and problem solving were higher than the avoidance coping subscales. These findings suggest that distance students (often older students) tend to use proactive approaches to their study, more so than avoidance strategies to manage and adjust to their demands.

In summary, students may use different types of coping and strategies to respond to stressors and strains. Failure to respond effectively to stressors and strains can lead to a number of negative physical and psychological outcomes. Students' ability to cope is dependent on many factors and universities can play a role in promoting positive coping strategies.

Academic Outcomes

The impact of student stressors and strain on health and wellbeing is relevant to the discussion of academic outcomes. It could be argued that there are many potential academic outcomes for students; however this discussion centres on academic performance and study success. Academic performance is seen as an important outcome measure of success whilst studying at university. The term *academic performance* (Al-Kandari & Vidal, 2007; Bradley, 2006; Ward Struthers et al., 2000), however, is often used interchangeably with academic success (DiGregorio, Farrington, & Page, 2000; Zajacova, Lynch, & Espenshade, 2005), academic achievement (Jansen & Bruinsma, 2005; McKenzie, Gow, & Schweitzer, 2004; Zeegers, 2004) and study attainment (Eggens, van der Werf, & Bosker, 2008), each of which may relate to different aspects of performance.

In terms of academic performance, GPA has been found to be one of the most important predictors of academic performance at university (Bean & Metzner, 1985) and may be more significant than measures of self-reported learning strategies and personality traits combined (Eggens et al., 2008; McKenzie et al., 2004; Zeegers, 2004).

In terms of differences cited in academic performance between on-campus and distance students there appears to be mixed results. A meta-analysis comparing distance education (synchronous and asynchronous) with traditional classroom based instruction, found that in terms of assessing academic performance, retention and attitude, there was a large variation in effect sizes across 232 studies. Whilst some students indicated that distance education students outperformed traditional on-campus students, by up to 50%, other studies found the opposite (Bernard et al. 2004).

More recently, some studies have found no statistical differences between on-campus and distance students, particularly with overall grade point average (Burton & Dowling, 2010; Russell et al., 2007; Steinberg & Morin, 2011). In contrast, Prater and MacNeil (2002)

found that end of course examination results differed significantly between those studying face-to-face and those working in collaborative online learning groups. In another study, students studying by distance performed better on multiple choice questions. However, students stated that they preferred to learn and interact via face-to-face delivery (Maring et al., 2008).

Kan and Cheung (2007) conducted a study comparing the academic performance of those studying face-to-face and by distance with students in a business communication course. After controlling for age, gender, previous academic performance, marital status, semester work load, and other relevant academic characteristics, such as program entry requirements, students in a face-to-face format outperformed those studying by distance (Kan & Cheung, 2007).

Other than academic performance, it is arguable that there are many other important indicators of students' progress. In terms of how students may perceive success, DiGregorio et al., (2000) found that of 12 Diploma of Health Studies Aboriginal and Torres Strait Islander students, student success was not only in terms of individual benefits, for example, earning a credential or getting high marks, but also success in potential community benefits. For example, being skilled to meet the needs of the community was considered an important factor and was a great motivator to complete their studies (DiGregorio et al., 2000). This serves as a reminder to consider multidimensional aspects of student success.

Student attrition. Another indicator of how well students cope with university study, is the extent to which they continue, despite challenges faced. Those that are unable to cope, based on their appraisal of their demands and resources, may “drop out of study” either temporarily or permanently (Liu et al., 2007). Often this is represented in the higher education literature as *intention to leave*.

There are many reasons why students may intend to leave their studies prematurely.

The top five reasons for Australian higher education students to consider leaving their studies were due to boredom, a change of direction, study/life balance, difficulty with workload, and personal reasons (Coates & Ransom, 2011). Cohorts vulnerable to prematurely leaving their studies include international students, students from remote areas, students from low-socioeconomic backgrounds, Indigenous students, students with a disability, and those studying part time or externally (Coates & Ransom, 2011).

A student's intention to leave is an important predictor of whether they will actually leave (Bennett, 2003). Similarities can be found in other research, such as nurses' intention to leave as a positive predictor of professional turnover (Murrells, Robinson, & Griffiths, 2008) and health behaviour models, where intention to change a behaviour is a predictor of actual behaviour change (Jones & Creedy, 2012).

According to Larsen, Sommersel, and Larsen (2013) there are many ways to describe students prematurely leaving their studies. These include commonly used terms such as dropout, departure, withdrawal, academic failure, non-completion. In terms of "dropout", this can be seen as involuntary (the student may leave due to not meeting academic standards) or voluntary (changing their field of study or enrolling at a different university), and characterised by other parameters such as the timing of the dropout, such as early or late (Larsen et al., 2013). It has also been found that the characteristics of students who choose to stop studying all together might be quite different from those who merely intend to change universities (Herzog, 2005).

The number of students dropping out of university is commonly referred to as *attrition*, and is considered to be a significant university problem, as it "implies wastage of resources and creates disappointment for students unable to complete courses" (Kember, 1995, p. 21). "Attrition is a complex and multifaceted phenomenon, which incorporates transitions such as cross-institutional mobility, 'dropout' from higher education, course

transfer, temporary deferral, and academic failure” (Coates & Ransom, 2011, p. 3). At an individual level, involuntary dropout may result in emotional turmoil and from a university perspective, high dropout rates may reflect poorly on the quality of the academic program, which in turn may have negative economic consequences for the university. At a societal level, having an adequate supply of university graduates has important implications for employment and labour markets, and welfare systems, such as university graduates being less reliant on benefits (Larsen et al., 2013).

A range of variables can affect students’ attrition and are often categorised as academic (high school academic performance, study habits), psychosocial (cultural factors, social support), or cognitive appraisal (motivation, affect, stress, coping). In addition, demographic factors (non-traditional and traditional aged students, first and second generation students, and gender) or environmental factors (family responsibilities, and hours of employment) may also be influential (Bean & Metzner, 1985; Burton & Ropolo, 2008; Bye et al., 2007; Eggens et al., 2008; Lee & Choi, 2011; McKenzie & Schweitzer, 2001; McKenzie et al., 2004; O’Donnell, 2009; Pike & Kuh, 2005; Sorey & Duggan, 2008; Ward Struthers et al., 2000; Zajacova et al., 2005; Zeegers, 2004).

Given the importance of understanding and addressing student attrition in tertiary settings, this research will examine reasons why students may consider leaving their studies prematurely. As there are many factors which may lead students to drop their studies, students will be provided with an extensive list of potential reasons to leave in a survey tool. The analysis will be focused towards comparing reasons between on-campus and distance students. Of particular interest will be the health variables most likely to predict student attrition.

Tinto’s student attrition model, developed in 1975, recognised the impact of social relationships between students and universities. The extent to which students feel part of the

university setting and ethos can have either a positive or negative influence on student engagement and success (Tinto, 1982). This is relevant to the question of how students perceive the role of universities in supporting their health. In terms of distance students, Kember's (1995) model (Figure 3) provides the framework for specifically understanding the experiences of distance learners, particularly those studying part time, with family and work commitments (Kember, 1995, p.2).

The model is represented as a linear model in which, given a certain range of personal entry characteristics such as gender and prior educational experience, the student may follow either of two paths to achieve academic success. Those seen to have positive psychological characteristics, for example being highly motivated, are more likely to become socially integrated with their study, such as being able to integrate study with their life circumstances. This leads to better academic integration (how they link with their course and the academic experience), which ultimately leads to improved academic success (Kember, 1995; Woodley, de Lange, & Tanewski, 2001).

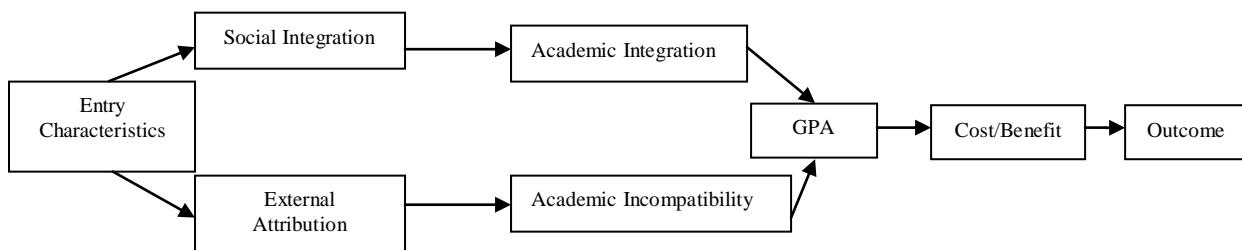


Figure 3. Kember's Model of Student Progress

This model also recognises the tensions sometimes felt by students between study, work and family. Students will sometimes reflect on their study and question whether the study still remains worthwhile given their circumstances (Kember, 1995). At times, discouragement or rather unsupportive family and friends, may negatively impact on the

student, resulting in the student feeling like they want to drop out of study (Drury et al., 2008).

Distance education models also tend to include technological factors as key predictors of attrition, particularly given the movement towards online learning (Alexander, Polyakova-Norwood, & Johnston, 2003; Liu et al., 2007). Some of the psychological and social characteristics include students' readiness and motivation to engage in distance/online education (Carroll et al., 2009; Dray et al., 2011; Samarawickrema, 2005), having clear career-orientation goals (Carroll et al., 2009), higher self-efficacy with online learning, (Dray et al., 2011; Liu et al., 2007) technology capabilities (Angelino et al., 2007), and the ability to be self-motivated, including managing learning time and resources effectively (Ostlund, 2008; Richardson, 2007). Each of these factors may decrease the risk of students withdrawing prematurely from their study.

In addition, perception of workload has been cited as one of the main reasons for drop out, with many students underestimating the workload involved in distance or online courses, particularly with balancing family and work (Carroll et al., 2009; Nichols, 2010). Other attrition-related factors include the institutional effects of poorly designed courses or clinical learning experiences (Dobbs, Waid, & del Carmen, 2009; Hamshire, Willgoss, & Wibberley, 2012; Liu et al., 2007; Yorke, 2004) lack of adequate orientation for distance students (Forrester et al., 2005) and lack of social integration in an online environment (Liu et al., 2007; Muilenburg & Berge, 2005; Yorke, 2004).

Students who experience higher levels of obstacles affecting their study may also feel less engaged with their studies (Salanova, Schafeli, Martinez, & Bresó, 2010). Moreover, students' coping style plays an important part in mediating between demands and burnout, with burnout being negatively correlated with engagement (Alarcon, Edwards, & Menke, 2011).

In summary, one's ability to complete university is dependent upon many factors. These factors are influenced in part, by predictors which are student-centred, and also institutionally based. This context is important in understanding the many pressures potentially faced by students and how students can be best supported. This is important for university issues such as attrition. Students may prematurely leave study because of health and wellbeing issues. These factors can also influence a student's ability to engage in learning and successfully complete their studies.

Many of the studies have explored attrition factors of either non-traditional students (often on campus), or those studying online (and not necessarily by distance). Of the studies that do relate to distance students, there is little research related to how health specifically relates to student attrition. Whilst some research has indicated that health problems per se might lead to some students leaving their studies prematurely, there has been no clear evidence of key health predictor variables (whether health risk or health-promoting) which may either contribute to student attrition, or decrease the likelihood of attrition. Overall, there is limited evidence of the impact of health issues or health related behaviour and their effect on student attrition in Australian distance students.

Chapter Summary

This literature review has highlighted the changing context of distance education, including the learning environment and student demographics. Many of the academic challenges facing distance students include transitioning to the online environment, being self-motivated, and difficulties connecting with peers and lecturers. Within a social context, many students who undertake this mode of study are typically mature-age students, who may also face challenges balancing other commitments, including work and family. Both academic and social challenges have the potential for students to experience a variety of stressors and strains. As found in the literature review, these stressors and strains may

negatively impact on health and wellbeing and may affect academic performance and even their ability to complete their studies.

Most of the current health behaviour research with university students is focused towards health-risk behaviours or health promoting behaviours with on-campus, and often younger students. Inconsistent findings have been found between the role of health behaviours and academic performance, and overall, there has been little research comparing on-campus and distance students with respect to these health behaviours.

Health-promoting behaviours in particular, have the potential to help students deal with stress and to contribute to overall wellbeing. These behaviours may be important in helping students cope with their unique circumstances. This, in turn, may have important implications for student progression, performance and retention.

The following chapter (*Chapter 3*) outlines the overall methodology for the two main phases of this research. This includes phase 1 (Study 1), and phase 2 (Study 2). Using a mixed-method approach, phase 1 represents a quantitatively driven study, whilst phase 2 used a qualitative approach.

Chapter 3: Methodology

Introduction

This chapter outlines the theoretical models used in this research and discusses how these were applied to the current research. This includes a description of both the transtheoretical model of stress and coping, and the health promotion model which have guided this research. An overall mixed-method research design is discussed, including the two phases of the research. Each study's aims, sample, and a general overview of the types of data analyses used are presented.

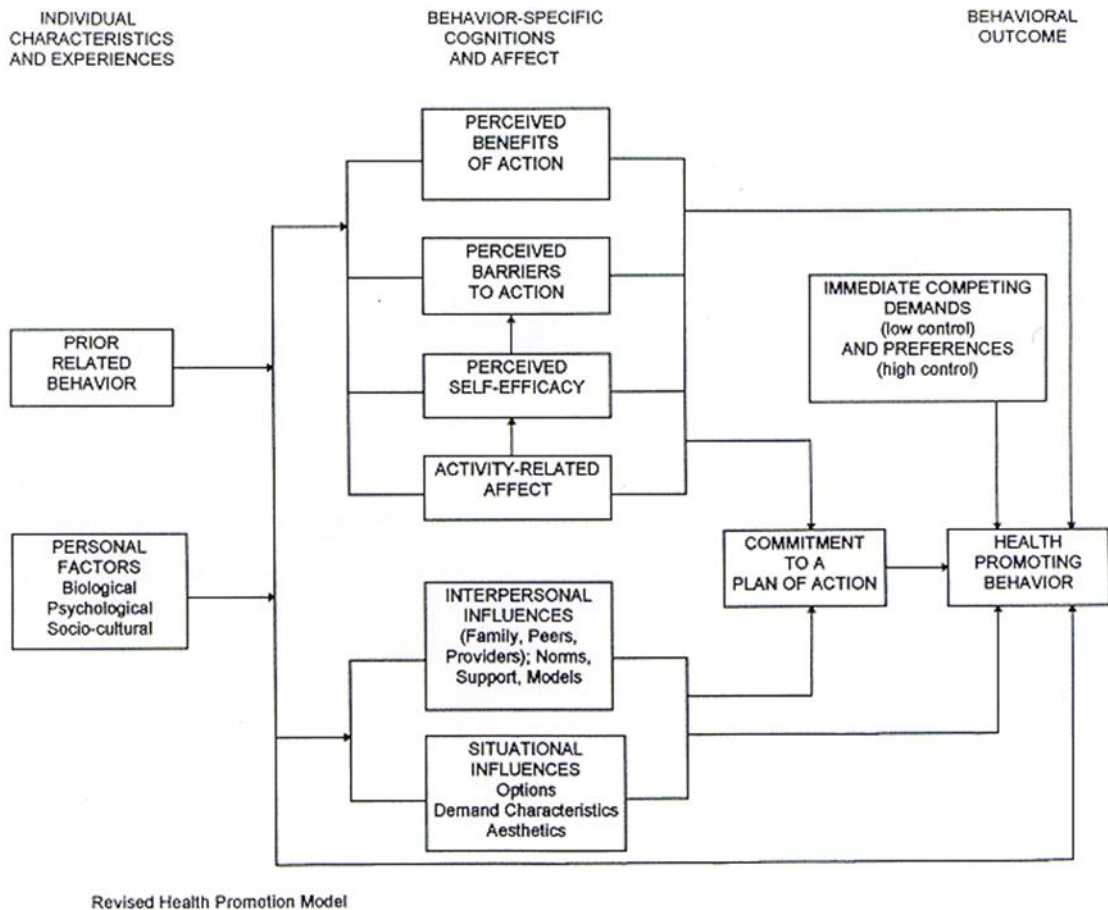
Theoretical Models

Whilst socio-ecological perspectives are useful for viewing distance students' health and wellbeing in a broad context, individual models for explaining and predicting health-promoting behaviours are also important. This is particularly so in relation to an individual's perceived barriers to, or facilitators of, health changes. Many health behaviour theories focus on the individual, but also social and environmental factors which influence behaviour (Glanz et al., 2008).

As this study aimed to explore and understand health behaviours of university students, and given that students may potentially experience stressors and strains as part of their study, it was important to consider health behaviour within the context of stress, strain and coping theory. How students perceive and cope with stressful experiences has important implications for health behaviours. Maladaptive behaviours, such as poor eating and smoking, may develop as a result of poor coping, whereas health-promoting behaviours (e.g., being physically active), have been associated with positive coping adaptations (Glanz & Schwartz, 2008).

Two conceptual models were chosen to guide the methodology and interpretation of findings of this study. The two models included the health promotion model (Pender et al.,

2011) and the transactional model of stress and coping (Lazarus & Folkman, 1984). The health promotion model and the transactional model of stress and coping are presented in Figures 4 and 5, respectively.



(Pender et al, 2011)

Figure 4. Health Promotion Model (Revised)

The health promotion model was developed theoretically from both expectancy value theory and social cognitive theory, which is underpinned by notions of a person’s perception of the value of making changes, and the multidimensional factors which may influence health-promoting behaviour (Pender et al., 2011, p. 45).

This model is useful in not only explaining behaviour, but also predicting the likelihood of an individual’s ability to engage in health-promoting behaviours given a number

of influences. As such, it acknowledges that an individual's ability to achieve positive health change is influenced by family, community, societal and environmental factors, therefore including both intrinsic and extrinsic factors.

The health promotion model consists of three main constructs including; individual characteristics and experiences, behaviour-specific cognitions and affect and behavioural outcomes. Firstly, individual characteristics and experiences are described as unique characteristics and experiences which may shape subsequent actions (Pender et al., 2011). These may include prior related behaviour (as a predictor of future behaviour) and personal factors (age, education, socio-economic status, strength and ability, and body mass index).

At the core of the model are behavioural variables which may affect the likelihood of a person engaging in a health-promoting behaviour. These variables include an individual's perceived benefits from making a healthy change, perceived barriers to taking action, and a person's affect (positive or negative), all of which are considered modifiable by interventions. An individual with greater perceived self-efficacy should perceive fewer barriers to adopting specific health behaviours.

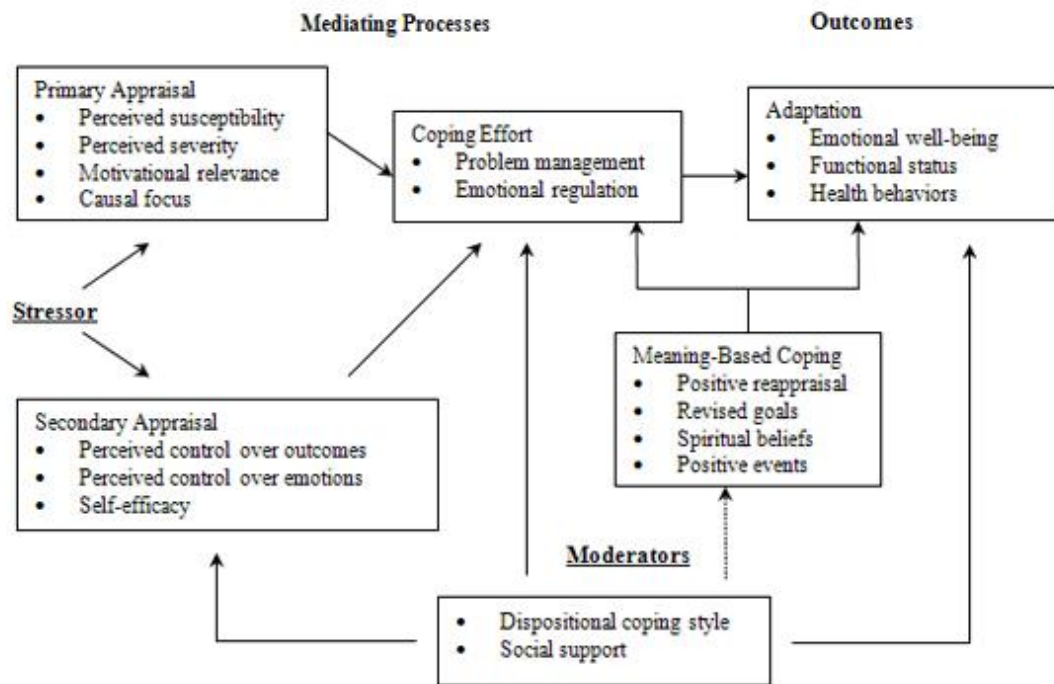
The model acknowledges how an individual's cognitions are influenced by peers, family and friends, and social cues from the environment, affecting how a person thinks and acts (interpersonal and situational influences). Understanding these variables is considered essential in assessing the extent to which behaviour change occurs following an intervention, or the likelihood of engagement (Pender et al., 2011).

The next stage of the model considers the extent to which a person makes a commitment to change. This is more than intent to change, but rather looks at tangible strategies matched with the person's stages of change. Despite an individual's best intentions and plans, this model also includes demands, for example family and work, which may also play a part in influencing decisions, and thus a commitment to engage in healthy behaviour.

This is related to a person's appraisal of the control which they have over their decisions and environment. Those with little control over their environment will be less likely to engage in health-promoting behaviours than those with more control. The final outcome of the model is a person's engagement in a positive health-promoting behaviour, for example, becoming more physically active.

The basic premise of the model is that not all people may be motivated to change their health behaviour due to a perceived fear or threat, as with other health behaviour theories. For health-promoting behaviours, the motivation to modify behaviour may be different. This is often the case with younger people who do not consider that negative health behaviours are likely to damage their health (Pender et al., 2011) or when behaviours need to be sustained for a long period of time to gain longer term benefits, for example, nutrition related behaviours. Whilst the model is useful for predicting overall health-promoting lifestyles, it also has utility in predicting specific behaviours such as engaging in physical activity (Pender et al., 2011).

The second theoretical model that guided this study was the transactional model of stress and coping, which is represented in Figure 5 (Lazarus & Folkman, 1984). Essentially, this is a conceptual framework for evaluating processes of coping with stressful events (Glanz & Schwartz, 2008, "Primary appraisal, para. 2") as cited in (Glanz et al., 2008). This model reflects the concept that stress is not a single variable, but rather a process involving the transaction between a person and their environment.



(Glanz & Schwartz, 2008)

Figure 5. Transtheoretical Model of Stress and Coping

The model postulates that a bidirectional transaction occurs between an individual and their environment, where a person appraises or evaluates a stressor and considers whether this stressor is considered a threat or challenge (primary appraisal). Individuals evaluate their ability to influence, cope and manage the stressor (secondary appraisal) based on their available resources, such as physical, social, psychological and material (Folkman, 1984; Folkman, Lazarus, Gruen, & DeLongis, 1986). The inability to manage stress becomes problematic, when an individual perceives a situation (demand) as being greater than their ability to manage or cope (resources) with the stressor (Allen, 2010). In this study, strains were aligned with the outcomes section of the model, such as how well or not a person adapts to the stressors or demands placed upon them. In this sense, factors such as social support and coping style, mediate between stressors and outcomes (Idris, 2011; Lazarus & Folkman, 1984).

The transactional model of stress and coping was useful in Phase 1, in understanding the extent of stressors and the outcomes of these stressors (strains) associated with study for distance students. It was important to understand the extents to which distance students perceive these as impacting on their health and wellbeing and/or study. This may include their self-efficacy beliefs, and perceptions of access to resources external to them, for example, seeking support from family and friends (Gibbons, 2010).

While there does not appear to be published discussions on the links between the two theoretical models, there are similarities. Firstly, there is an emphasis on self-efficacy and the influence of family and friends, either as a protective factor against stress, or being supportive in adopting healthy behaviours. Secondly, there is an importance of appraisal, such as an evaluation of their ability to cope with a situation or demands that affect their behaviours, or the benefits of making a healthy change. In both models, the extent to which a person is able to cope with their perceived demands increases the likelihood that they will be able to adopt a healthy behaviour or respond and adapt positively to perceived stress. Consequently, examining and exploring students' ability to cope was a key aspect of this research study.

Application of theoretical models to current study. With respect to the current study, not all aspects of the theoretical models were empirically tested. The study was not designed to test or predict relationship of variables within the models in their entirety. Given that this research was focused towards the relationship between health and stress, strain and coping, and academic outcomes, and that no literature existed which had combined and tested the two models, it was considered beyond the scope of this research to test both models. In addition, given the complexity of the models and the large number of concepts within each model, it was decided to include some of the key predictor variables based on previous

literature, which were still considered relevant to the research questions. Valid and reliable measures were chosen, taking into account time demands on students to complete the survey.

To address the first two aims of the study, the health promotion model was applied by examining students' personal factors, such as student demographics, and their relationship with health-promoting behaviours. For example, predictor variables such as gender differences have previously been found to be important when examining health-promoting behaviours (Arras, Ogletree, & Welshimer, 2006; Soffer, 2010). Behaviour-specific cognition variables such as self-reported health, health value and self-efficacy, were examined along with health-promoting behaviours. The transactional model of stress and coping was applied also in the first two research aims, by examining the relationships between stressors, coping and adaptation outcomes such as health-risk and health-promoting behaviours.

In the third aim of the study, the health promotion model was used to understand students' perceptions of their health and the relationship with their study/home/work life balance, by incorporating questions based on aspects of the model. For example, in terms of perceived barriers to action, students were questioned regarding challenges they had faced in maintaining their health whilst studying. The use of the health promotion model was extended to the fourth research aim, which considered the situational factors within the university, which influenced students' engagement in health behaviours or ability to cope. Students' perceptions about the university's role in supporting their health and coping were sought.

The transactional model of stress and coping was used to help formulate interview questions for participants to address the third research aim. For example, student perceptions were explored in relation to their appraisal of stressors and how they had managed, or not managed, to cope with them. This has not previously been explored with distance students;

therefore this was one of the key foci of the study. Understanding specifically how distance students perceived study and life challenges and how they cope with these, became useful in understanding those factors which may promote health, and assist universities to support student coping.

Mixed-Method Research

Using both qualitative and quantitative approaches is often described as using a *mixed-method research design*. Mixed-method research combines both quantitative and qualitative approaches within the one study (Creswell, 2009; Liamputtong, 2010; Tashakkori & Teddlie, 2003). The use of different approaches, also means that more than one distinct worldview may be used (Tashakkori & Teddlie, 2003).

There are many examples of mixed-method research in the literature, particularly the sociology literature from the early 1900s. However, the development of mixed-methods as a distinct research approach remains somewhat a relatively new concept. In the 1950s, post-positivist researchers recognised the challenges of using a positivist approach alone, when exploring complex phenomena. In the 1970s, many qualitative researchers began to voice their criticism of the positivist paradigm, and many theoretical developments which emphasised the importance of knowledge construction from the meaning from relationships and experiences, became apparent. Between the 1970s and 1990s, qualitative methods and constructivist approaches became more popular, although at this stage many still believed that the use of mixed-methods was flawed.

Philosophically, it was argued that one could not mix underlying paradigms from both epistemological and ontological viewpoints (Tashakkori & Teddlie, 2003). More recently, the emergence of a pragmatic approach, valuing the contribution of each qualitative and quantitative method, indicates that neither method holds all of the answers (Creswell, 2009; Tashakkori & Teddlie, 2003). Pragmatism has been described as, “the fact that reality does

not exist only as natural and physical realities, but also as psychological and social realities, which include subjective experience and thought, language, and culture” (Taket, 2010, p. 341) as cited in Liamputtong (2010).

Mixed-method research is seen to have a number of advantages over single method approaches. The advantages include: (a) helping to answer research questions that otherwise could not be answered by one approach, (b) assisting in making stronger inferences, (c) presenting a greater diversity of divergent views, (d) helping with answers to confirmatory and exploratory research questions, and (e) building on the results from one approach to another to enlighten or confirm phenomena (Creswell, 2009; Tashakkori & Teddlie, 2003). This research approach is particularly useful in studies which involve understanding health behaviours, quality of life and designing and evaluating interventions, which may help to explore the appropriateness and acceptability of health promotion programs (Liamputtong, 2010).

Despite these advantages, there are some challenges when conducting mixed-methods research. These include the need for researchers to be familiar with both types of research approaches, and given that there is no common language of data collection and analysis between qualitative and quantitative approaches, making inferences from data can be difficult (Creswell, 2009; Tashakkori & Teddlie, 2003). To address these challenges, Creswell (2009) advocates using four criteria to select an appropriate research design. These include the following: (a) selecting a timing strategy (either concurrent or sequential) for data collection, (b) deciding on the weighting or emphasis between qualitative and quantitative components of the study, (c) deciding how data will be mixed, and (d) determining which theoretical lens will be applied to the research.

An inductive research process is one in which the researcher theoretically is driven towards a “discovery mode” which is specific to deductive processes which are based upon

confirmation or “testing” (Tashakkori & Teddlie, 2003). Major designs can be simultaneous, when one method drives the other, or sequential, such as where the second method is designed to resolve issues not covered in the first method.

Research Design

A two-phase study was designed for this research, based on a sequential explanatory mixed-method design, incorporating both quantitative and qualitative approaches. Creswell (2009) described this design as:

The collection and analysis of quantitative data in a first phase of research, followed by the collection and analysis of qualitative data in a second phase that builds on the results of the initial quantitative results. Weight is given to the quantitative data and the mixing of the data occurs when the initial quantitative results inform the secondary qualitative data collection. The two forms of data are separate but connected. (p.211)

This doctoral research used the following design: QUAN → Qual. The QUAN abbreviation (indicated by upper case letters), represents the main focus of this research is based upon a quantitatively-driven project. The arrow (→) following the QUAN abbreviation indicates the direction of the study design. This means that the quantitative phase is conducted first. The Qual abbreviation indicates a smaller qualitative project (Tashakkori & Teddlie, 2003). This presumes the relationship of the qualitative data as supportive of the quantitative data (Creswell, 2009).

The first phase of the research was quantitatively driven (Study 1), whilst the second phase (Study 2) used a qualitative approach designed to help explain the findings from the first phase. Table 2 represents the research design for the two main phases of the research.

Table 2

Research Phases and Design

Phase	Study	Research Aims	Design	Data Collection	Analysis	Findings
Phase 1	Pilot testing of USQ Health and Wellbeing Survey (Discussed as part of Study 1)	<ol style="list-style-type: none"> To examine the reliability and validity of study measures to inform Study 1, using a small sample of USQ students. To obtain student feedback about the USQ Health and Wellbeing Survey from a sample of USQ students. 	QUAN	<p>USQ Bachelor of Nursing students (Toowoomba & Fraser Coast), and Master of Mental Health Nursing students ^a.</p> <p>Convenience sample</p>	Descriptive analysis	To inform Study 1 including refinement of measures and methods.

Note^a. Master of Mental Health Nursing has now been replaced by the Postgraduate Diploma in Mental Health Nursing.

Table 2 (continued)

Research Phases and Design

Phase	Study	Research Aims	Design	Data Collection	Analysis	Findings
Phase 1	Study 1	<ol style="list-style-type: none"> 1. To examine the relationships between study variables and cohort differences between distance students and on-campus students in relation to health risk and health-promoting behaviours, stress, strain, coping and academic outcomes. 2. To examine the effects of gender and mode of study on key study variables. 3. To examine which health variables best predict student stress, strain, coping and academic outcomes for on-campus and distance students. 	QUAN	<p>Currently enrolled USQ Students 2011</p> <p>All Faculties</p> <p>On-campus and distance students (i.e., online and external)</p> <p>Convenience sample</p>	<p>Descriptive analysis</p> <p>Correlation analysis</p> <p>ANOVA</p> <p>MANOVA</p> <p>Path analysis</p>	Study findings to inform the research questions for Study 2

Table 2 (continued)

Research Phases and Design

Phase	Study	Research Aims	Design	Data Collection	Analysis	Findings
Phase 2	Study 2	<ol style="list-style-type: none"> 1. To explore the role of health-promoting behaviours within the context of distance students' stressors, strains and ways of coping. 2. To explore distance students' perceptions of the role/s and responsibility of the university in supporting their health and wellbeing. 	Qual	Purposive sample of distance students across faculties	Thematic analysis	Findings build upon Study 1
Final Discussion			QUAN- Qual		Interpretation of entire analysis	Theoretically driven by QUAN + Qual findings. Qual embedded within QUAN findings.

Chapter Summary

As a number of variables influence a students' engagement in health behaviours, it was important to consider which theoretical models would best help to understand key factors, which were likely to predict the health behaviours of distance students. In this case, the health promotion model and the transtheoretical model of stress and coping were considered appropriate to guide this research. Both models include intrinsic and extrinsic factors which may be shape health behaviours.

To address the research aims, it was important to consider a research design that would be best suited to not only understanding relationships between key variables, but also to elicit from students their perceptions of their study and their health, hence a mixed-method approach was chosen. As highlighted in this chapter, the first phase of the research involved two quantitative stages (a pilot test and Study 1). The next chapter (Chapter 4) outlines both of these stages. The chapter describes the process of pilot testing an online health survey with a small sample of USQ Nursing students, to help in refine methods and measures prior to Study 1. Following a discussion of the outcomes of the pilot test, Chapter 4 describes the method and results of Study 1, and concludes with a discussion which informs Phase 2 of the research.

Chapter 4: Phase 1 (Study 1)

Chapter Introduction

This chapter outlines the methods and results of the two stages of Phase 1 of the research. As outlined in Table 2 (Chapter 3) the first stage was to pilot test an online health survey with a sample of USQ students prior to Study 1. The aim of this process was to examine the reliability and validity of study measures and to obtain feedback from students about the survey tool itself. This process is discussed as part of Study 1.

Study 1 was aimed at examining the relationships between key health and academic variables and their relationship with demographic and modifying variables. This included also examining the relationships between general health and psychological variables on students' engagement of health behaviours, and in addition, to examine the role that stress, strain and coping plays in predicting students' academic outcomes. Study 1 used descriptive and inferential analysis to examine the nature of the relationships between key variables and to examine variables most likely to predict student coping and academic performance. Study 1 involved a sample of 766 USQ students, including 270 on-campus students, and 496 distance students. Analysis involving GPA was conducted on a sub-sample of 641 students, given that GPA was not available for all students at the time of analysis.

The second aim of Study 1 was to examine the differences between on-campus and distance students in relation to the study variables, given that this appeared to be a gap in the literature review. MANOVAs were used to examine the effects of gender and mode of study on groupings of key study variables.

The third aim of the study was to examine which health variables best predicted student stress, strain and coping and academic outcomes for on-campus and distance students. A path analysis model (Kline, 2005; Schumacker & Lomax, 2010) was developed and tested with each cohort, to determine the impact of general health variables and health-promoting

behaviours on student stress, strain, coping, psychological distress and academic outcomes. It should be noted that psychological variables, such as positive affect, negative affect and general self-efficacy, were not included in the final path model.

Previous research has clearly indicated that these psychological variables correlate highly with a broad range of health variables, and as such, would reduce the impact of these health variables in this research. For example, positive affect has been found to have moderate to high correlations with depression (Houa, Law, & Fu, 2010; Watson et al., 1988), psychological resilience and health efficacy (Nath & Pradhan, 2012). Negative affect has been found to have moderate correlations with such things as binge-drinking (McNamara, Swaim, & Rosen, 2010), decreasing exercise and increasing intake of high fat/high sugary foods (Jones, O'Connor, Conner, McMillan, & Ferguson, 2007). Finally, higher levels of general self-efficacy have been found to correlate with decreased alcohol consumption, increases in health-promoting behaviours and increased sun protection of students (Von Ah, Ebert, Ngamvitroj, Park, & Kang, 2004).

This chapter outlines the methods used in both stages, including descriptions of ethical considerations, participants, measures, data analysis and results. At the conclusion of the chapter, is a discussion of the key findings and how the findings may inform Phase 2 of the research.

Research Questions

The following research questions formed the foundation for the method and analyses used in Study 1:

1. What are the relationships between student demographics, general health, health risk and health-promoting behaviours, student stress, strain, coping and academic outcomes?

2. Do differences exist between on-campus and distance students in terms of general health, health risk and health-promoting behaviours, student stress, strain, coping and academic outcomes?
3. Is there an effect of age, gender and mode of study on general health, health risk and health-promoting behaviours, student stress, strain, coping and academic outcomes?
4. Which health variables best predict student stress, strain and coping and academic outcomes for on-campus and distance students?
5. What role do health-promoting behaviours play in student stress, strain and coping and academic outcomes for on-campus and distance students?

Method

Pilot Testing Phase

Prior to Study 1, a pilot test of an online health survey (the USQ Health and Wellbeing Survey) intended to be the method of data collection in Study 1 was conducted. This was considered advantageous for a number of reasons. Firstly, poorly designed questions can affect the type and quality of data collected (Gillham, 2000). Secondly, implementing a pilot survey can ensure that the survey is appropriate and accepted by the target population to maximise the opportunity to gather quality data (Leon, Davis, & Kraemer, 2011; Secomb & Smith, 2011). Hence, the aims of pilot testing this survey were to determine the reliability and validity of study measures, and to obtain feedback from students about the appropriateness of the survey tool. This information was important for the refinement of measures and methods prior to the USQ Health and Wellbeing Survey being available to a larger USQ sample.

The pilot test version of the survey appears in Appendix E, and was based upon the National College Health Assessment II, by the American College Health Association

(American College Health Association, 2011). A summary of the variables, measures, and corresponding pilot survey items appears in Appendix D. Each measure is described in further detail in this chapter as part of Study 1. Permission had been granted from each of the authors of the scale to use them in an online survey environment.

The total number of items in the pilot survey was 247 (including 10 evaluation questions). The anticipated time to complete the survey was 30 minutes, via a secure USQ website. There was no incentive offered to students in the pilot study to complete the survey. Ethics clearance was obtained from the USQ Human Research Ethics Committee (Approval No. H10REA137). A copy of the ethics approval appears in Appendix C.

At the time of pilot testing (August to September, 2010) all students enrolled in the undergraduate Bachelor of Nursing program (Toowoomba and Fraser Coast campuses) and students from the Master of Mental Health Nursing program (external mode) were invited to participate in the survey via email. The Bachelor of Nursing program is an undergraduate degree which prepares students as registered nurses via a blend of coursework and professional placements (USQ, 2013b). Most of the students at this time of this study were enrolled in the on-campus program. The Master of Mental Health Nursing program in 2010 was a postgraduate program offered by distance (USQ, 2013c). Nursing students were chosen as a suitable convenience sample, given the relationship between the researcher as a current academic, and the student cohort. This was considered advantageous in gaining feedback from students about the online health survey, and also promoting the study with students.

In total, 87 participants accessed the online survey. Due to missing data, 73 cases were carried forward for further analyses. This dataset included 51 students who were enrolled on-campus in Toowoomba, 13 at Fraser Coast, three studying externally and four via mixed/flexible mode. Most of the students who pilot tested the online health survey were

female (84.93%) and were married (43.84%). Ages ranged from 18 to 63 years of age, with an average age of 32.9 years. A descriptive summary of the socio-demographics of those that pilot tested the survey appears in Table 3. Whilst there are no statistics available to compare the these students with USQ Nursing students in general in terms of many of the socio-demographic variables, the age and gender of the pilot group does tend to be representative of the nursing student cohort at USQ. This is given that most USQ nursing students are female and more than half are over the age of 25 years.

In terms of academic characteristics, most of the students (83.56 %) were enrolled at a Bachelor level and on campus at Toowoomba (69.86 %). Most students were enrolled on a full-time basis and were either commencing, or part way through their studies. In relation to GPA, over half of the students who completed the survey (67.10%) reported a GPA between 5 and 7. A descriptive summary of the academic characteristics of those that were involved in the pilot test appears in Table 4.

Table 3

Socio-Demographic Characteristics of USQ Nursing Students

Variable	<i>n</i>	%
Age (years)		
18-24	22	30.14
25-39	33	45.21
40 ⁺	18	24.66
Gender		
Female	62	84.93
Male	11	15.07
Marital status		
Married	32	43.84
Single	25	34.25
De-facto	11	15.07
Separated	1	1.37
Divorced	1	1.37
Employment status		
Not employed	27	37.00
Casual	22	30.14
Permanent part-time	14	19.18
Permanent full-time	6	8.22
Fixed contract	1	1.37
Number of jobs		
0	2	4.55
1	33	75.00
2	8	18.18
3	1	2.27

Note. *N* = 73.

Table 3 (continued)

Socio-Demographic Characteristics of USQ Nursing Students

Variable	<i>n</i>	%
Hours in caring role per week		
30 ⁺	24	32.88
26-30	3	4.12
21-25	4	5.48
16-20	6	8.22
11-15	3	4.11
6-10	3	4.11
1-5	7	9.59
0	20	27.40
Hours in paid employment		
30 ⁺	8	16.28
26-30	5	11.63
21-25	2	4.65
16-20	13	27.91
11-15	7	16.28
6-10	7	16.28
1-5	3	6.98
Ethnicity		
Indigenous	2	2.74
Non-English Speaking	9	12.33
ASGC-RA		
RA1 (Major city)	2	2.80
RA2 (Inner regional)	66	93.00
RA3 (Outer regional)	3	4.20
RA4 (Remote)	0	0.00
RA5 (Very remote)	0	0.00

Note. *N* = 73.

Table 4

Academic Characteristics of USQ Nursing Students

Variable	<i>n</i>	%
Level of program		
Bachelor	61	83.56
Other undergraduate	6	8.22
Undergraduate	2	2.74
Higher degree coursework	2	2.74
Other postgraduate	1	1.37
Faculty		
Sciences	73	100.00
No. of courses enrolled in		
> 6 courses	45	61.60
< 6 courses	25	34.22

Note. $N = 73$. Levels of program descriptions are provided in Appendix A. In this table, undergraduate refers to courses other than Bachelor degree programs; this may include Associate Degree, Advanced Diploma. "Other" may include programs such as non-award or enabling programs. It is possible that some students enrolled in the Bachelor of Nursing program responded as "undergraduate" rather than Bachelor. Cont. over

Table 4 (continued)

Academic Characteristics of USQ Nursing Students

Variable	n	%
Courses completed		
0	8	11.43
1-4	17	24.29
5-9	18	25.71
10-14	16	22.86
15-19	6	8.57
20-24	3	4.29
25 ⁺	2	2.86
Grade point average		
< 3	2	2.71
Between 3-4	3	4.13
Between 4-5	19	26.06
Between 5-6	23	31.50
Between 6-7	26	35.60
Mode of study		
On-campus (Toowoomba)	51	69.86
On-campus (Fraser Coast)	15	20.55
External	3	4.11
Mixed/flexible	4	5.48

Note. $N = 73$. Mode of study descriptions are available in Appendix A.

Overall there was a low response rate from students who completed the online health survey (7.5%). In addition, there was a large degree of missing data which was partly due to an accidental omission of items in sub-scales in the original development of the USQ Health and Wellbeing survey. In relation to the issue of addressing missing data, Tabachnick & Fidell (2007) state that where there is less than 5% of missing data, a number of procedures

could be used which would probably result in the same outcome. Where the student had partially completed a scale, the substitution of a student's own mean of the subscale was considered appropriate. Where students did not complete a whole subscale, the group mean was substituted. Replacing missing data with both the individual and group means is generally described as a conservative measure for dealing with missing data (Tabachnick & Fidell, 2007).

Furthermore, some students may not have felt comfortable answering sensitive questions, therefore choosing to skip these questions in the survey as these items were not set as required fields. For example, there were some instances where students chose not to answer questions on sexual health in the original USQ Health and Wellbeing Survey, due likely to discomfort and embarrassment. Older students reported more discomfort in answering these questions than younger students. While the literature supports the importance of addressing sexual health issues within student cohorts, the difficulties experienced during pilot testing in relation to students not answering these items, meant that it was considered as too sensitive an area to include in the main survey.

One of the key aims of conducting a pilot test was to determine the overall reliability and validity of study measures. Reliability was determined using Cronbach's alphas with values between $\alpha = .7$ to $\alpha = .8$ considered acceptable (Field, 2009). Where there were missing items from some sub-scales, reliability was re-calculated on the modified scale. A descriptive summary of general health, health risk and health-promoting behaviours, stress, strain and coping, and academic outcomes appears in Table 5.

Table 5

Descriptive Statistics of General Health, Health Risk and Health-Promoting Behaviours, Stress, Strain and Coping, and Academic Outcomes

Variable	<i>M</i>	<i>SD</i>	α	Range	No. of items
General health					
Health value	20.27	3.94	.51*	4-28	4
Self-reported health	3.21	0.93	N/A	1-5	1
Health-promoting behaviours					
Nutrition	2.80	0.48	.68*	1-4	8
Spiritual growth	2.94	0.52	.76	1-4	8
Interpersonal relations	3.03	0.51	.78	1-4	8
Physical activity	2.34*	0.78	.85	1-4	7
Health responsibility	2.64	0.61	.79	1-4	8
Stress management	2.50	0.48	.57*	1-4	7
Total health-promoting behaviours	2.73	0.34	.90	1-4	46
Health-risk behaviours					
Body mass index	27.39	6.62	N/A	<18.5 to 30	1
Psychological distress	19.22	6.61	.89	10-50	10

Note. $N = 73$. *Health-promoting behaviours mean < 2.5, analyses conducted using pro-rated subscales due to omitted subscale items. α^* = values considered outside acceptable reliability.

Table 5 (continued)

Descriptive Statistics of General Health, Health Risk and Health-Promoting Behaviours, Stress, Strain, Coping and Academic Outcomes

Variable	<i>M</i>	<i>SD</i>	α	Range	No. of items
Student stress					
Academic	2.78	0.79	.82	1-5	9
Lifestyle/financial	2.93	1.05	.82	1-5	5
Personal	2.73	0.79	.71	1-5	5
Interpersonal/relationship	2.19	0.87	.64*	1-5	5
Student coping					
Social support	3.37	0.82	.86	1-5	8
Problem-focused	3.37	0.82	.89	1-5	7
Recreation and self-care	2.56	0.89	.88	1-5	8
Student strain					
Academic	2.49	0.66	.63*	1-5	6
Academic outcomes					
Grade point average	3.93	1.02	N/A	0-7	1

Note. $N = 73$. α^* = values considered below acceptable reliability.

As indicated in 5, there were some measures that were below the acceptable range for reliability such as; health value, stress management, nutrition, interpersonal/relationship stress, and academic strain. As shown in Table 3, students on average, positively valued their health ($M = 20.27$, $SD = 3.94$), given that a score > 16.0 is indicative of positive health value. However, as the Cronbach's alpha for health value was $\alpha = .51$, this result should be interpreted with caution. On average, students rated their health between good and very good ($M = 3.21$, $SD = 0.93$).

In terms of health-promoting behaviours, an overall mean of the total Health Promoting Lifestyle II Profile was ($M = 2.73$, $SD = 0.34$), indicating that this cohort did engage positively with most health-promoting behaviours. The only subscale in which students did not engage in regular behaviours was physical activity ($M = 2.34$, $SD = 0.78$). Overall, the reliability of the HPLPII Profile was very good ($\alpha = .90$), however the stress management subscale's Cronbach's alpha was lower at $\alpha = .57$, therefore results should be interpreted with caution.

With respect to health-risk behaviours in Table 3, the mean BMI in the pilot study population was ($M = 27.39$, $SD = 6.62$), indicating that on average, students were overweight. Students experienced moderate levels of psychological distress with scores ranging from 16 to 21 on the Kessler Psychological Distress Scale (K10).

In terms of the most frequently experienced student stressors, lifestyle/financial stressors were more commonly experienced, closely followed by academic and personal stressors. Students experienced some academic strain, and appeared to use coping strategies, namely social support and problem-focused coping. Given that the academic strain was the only subscale for which data was collected, it was not possible to compare across the various strain subscales.

Whilst no inferences can be made from this data, these results do indicate that these key variables would be considered relevant to include in a larger USQ sample of students. For instance, the students who pilot tested the survey, were considered overweight and did not commonly engage in physical activity behaviours. This finding is consistent with a lack of physical activity often reported in Australian adults, with six out of 10 adults not meeting the recommended guidelines for weekly physical activity (Australian Bureau of Statistics, 2011). As previously discussed, being overweight is a risk factor for many health conditions, therefore intervening with students who may have become more sedentary as a result of their

study, is an important health issue. Given that this process was in essence exploratory, it would be worthwhile including BMI in Study 1 to determine whether, in a larger sample, results may differ. The pilot phase also found that on average, students were moderately distressed. Strategies aimed at improving student coping may therefore be beneficial in reducing the impact of student stress and in turn decrease psychological distress (Hamaideh, 2011). Despite some poor reliability of some measures during pilot testing, it was decided to retain these measures for further analysis in Study 1 to determine whether this would improve after addressing issues discussed and a larger sample used.

Nevertheless, as part of the pilot testing of the USQ Health and Wellbeing Survey, students were encouraged to complete an evaluation survey to elicit their perceptions about the online health survey's user-friendliness, appropriateness of questions, such as cultural appropriateness, degree of difficulty in answering questions, and logistical issues, relating to progression through the survey.

The feedback indicated that students rated the survey as user friendly, with a clear purpose. While many students considered the time taken to complete the survey as "satisfactory", some considered it to be "slightly long". Given the large number of items in the original survey, the main survey was shortened and refined, to ensure that only those variables in absolute alignment with the research questions were included in the Study 1 survey tool.

Although minimal, the main difficulties experienced with the survey were with regard to wording of some questions, one item being repeated, and the categorising of items, for example, no maternity leave box for employment status.

Refinement of Measures and Methods for Study 1. As a result of the pilot testing process, a number of changes were made to the Study 1 survey. Firstly, health variables which were deemed as less relevant to both the research questions and the study sample were

omitted. Secondly, based on feedback from students and sometimes the amount of missing data, it was assumed that some questions were ambiguous for participants. For example, when students were asked about their intention to quit smoking, they were questioned in relation to the frequency of their smoking behaviour. Categorising smoking behaviours as *occasionally* or *usually socially* might be open to misinterpretation. In this instance, changes to the revised USQ Health and Survey in Study 1 categorised students as either *current smokers*, *ex-smokers* or *never smokers* (Australian Bureau of Statistics, 2006).

In addition, questions around alcohol consumption needed to be more specific, in terms of the extent to which alcohol consumption was impacting on the student. As such, a hazardous drinking screening tool such as the AusAUDIT scale (Degenhardt, Conigrave, Wutzke & Saunders, 2001) was included in the Study 1 survey.

It was noted that the variables GPA and BMI were self-reported data which may affect the accuracy of data. Whilst it was not feasible to collect actual height and weight data from students in Study 1; actual GPA was used in Study 1.

Following the pilot testing phase and reflection of the literature presented in Chapter 2, there were a number of variables which were considered important for inclusion in Study 1. Firstly, the concept of self-efficacy appeared to be a key variable within the health promotion model and the transactional model of stress and coping, in terms of predicting the likelihood of adopting health-promoting behaviours. General self-efficacy has been negatively correlated with negative affect, positively correlated with lower levels of anxiety, and behaviour-specific health beliefs and behaviours (Luszczynska, Scholz, & Schwarzer, 2005; Zalewska-Puchala, Galuska, & Kolonko, 2007).

The measurement of wellbeing was not included as a variable in the original USQ Health and Wellbeing Survey, despite being found in the literature to positively correlate with life satisfaction, positive affect and academic satisfaction (Lightsey & Boyraz, 2011; Ojeda,

Flores, & Navarro, 2011). Furthermore, wellbeing has been found to be an important predictor of psychological distress in students (Bewick et al., 2010; Burriss et al., 2009), health-risk behaviours (Schwartz et al., 2011) and it is considered to be the outcome of engaging in health-promoting behaviours (Pender et al., 2011).

As an outcome variable, *intention to leave* is relevant to the student experience and hence was included in Study 1. Many factors can impact on a student's decision to leave their studies prematurely, including health and wellbeing issues (Coates & Ransom, 2011; Willcoxson, 2010). Given that some students consider dropping their studies, the extent to which they also experience stress and strain and the extent to which they access existing university supports warranted further investigation.

Finally, in terms of refinement of survey methods, in Study 1 the survey used forced choice responses. This ensured that there was less chance of missing data, which was important for reliability and validity. Furthermore, as there was a low response rate for students completing the online survey during pilot testing, strategies to increase participation were critical to consider enabling a large cross-sectional sample of USQ students. These are discussed further in this chapter.

Participants

The Study 1 sample included 496 students (64.75%) distance students (categorised as external/online), and 270 (35.25%) on-campus students. The overall age range was 16 to 70 years ($M = 31.68$, $SD = 10.76$). The average age for distance students was 33.88 years ($SD = 10.20$) and for on-campus students, 27.64 years ($SD = 10.61$). In terms of gender, there were more women proportionally across both modes, and similar ratios found between on-campus and distance modes. Males comprised 21.41% of the Study 1 sample, and females 78.59%. Most distance students were married (48.39%) as opposed to on-campus students being

single (56.30%). Other social and academic demographics of the Study 1 sample appear in Tables 6 and 7 (see Results).

Measures

A summary of the measures and survey items for Study 1 survey appears in Appendix G, with a full copy of the survey available in Appendix H.

Socio-demographic variables. The key socio-demographic variables included were age and gender. Other variables also examined included hours of paid employment, hours caring for dependants and marital status.

General health variables. A total of three variables were used as general health measures, namely health value, self-reported health, and wellbeing.

Health value. Health value is commonly described as the degree to which a person considers it important to be in good health (Kristiansen, 1985; Reifman et al., 2001; Ritt-Olson et al., 2004). Health value in this study was measured using the Health Value Scale (Lau et al., 1986). This is a 4-item scale including the following statements, (a) “if you don’t have your health, you don’t have anything”, (b) “there are many things I care more about than my health”, (c) “good health is only of minor importance in a happy life”, and (d) “there is nothing more important than good health”. Items b and c were reverse scored.

Health value was measured on a 7-point likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*) with a possible total score range between 4 and 28. A total health value score was summed from all 4 items on the scale. The midpoint of the scale is 16.0; therefore a score > 16 was indicative of positive health value. It was not evident from the literature what constituted a higher or lower value of health, beyond the midpoint of the scale (Lau et al., 1986; Steptoe & Wardle, 2001). Therefore, for the purposes of this research, a score > 16 was considered as positive health value. Lau et al. (1986) reported reliability of the scale

across adolescent and adult populations of between $\alpha = .63$ and $\alpha = .73$. The reliability of the health value scale in Study 1 was $\alpha = .70$.

Self-reported health. Perception of overall health status was measured by students rating their health on a 5-point likert scale as either 5 = *excellent*, 4 = *very good*, 3 = *good*, 2 = *fair* and 1 = *poor*. Self-reported health has been viewed as an indicator for general health and wellbeing within population health research, and has been found to be a good predictor of mortality and health service usage (Australian Institute of Health and Welfare, 2012; Dal Grande, Hickling, Taylor, & Woollacott, 2003). In 2007/2008, most Australians over the age of 15, reported their health to be very good or excellent (56%), good (29%) or fair/poor (14%; Australian Institute of Health and Welfare, 2012).

Wellbeing. Subjective wellbeing can be considered within both affective and cognitive constructs. From an affective perspective, a range of activities to overcome weekly stressors such as going for a walk, talking with a friend, or watching television, can all increase a sense of psychological and physical wellbeing, and help students recover from academic stressors and strains (Ragsdale, Beehr, & Grebner, 2011).

The concept of life satisfaction relates to the cognitive aspects of wellbeing, in that a person will make an overall evaluation of their life across many aspects (Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 2008). Life satisfaction has been found to buffer the effects of family conflict experienced by first year undergraduates, and may positively affect grade point average (Bahrassa, Syed, Su, & Lee, 2011).

Subjective wellbeing was measured using the Satisfaction with Life Scale (Diener et al., 1985). The Satisfaction with Life Scale (SWLS) is a 5-item, 7-point scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), including items such as: "In most ways my life is close to ideal". Theoretically, scores may range from 5-35, with people experiencing *extreme life dissatisfaction* ranging from 5-9, *dissatisfaction with life* 10-14,

slightly below average satisfaction 15-19, average life satisfaction 20-24, high life satisfaction 15-29, and very high life satisfaction 30-35.

Previous Cronbach's alphas have been reported for this scale between $\alpha = .86$ to $.88$, within college populations (Lightsey & Boyraz, 2011; Ojeda et al., 2011). In an Australian adult community sample ages 18-79 years, including undergraduate (35.1%) and postgraduate university students, the Cronbach's alpha was reported as $\alpha = .83$ (Gannon & Ranzijn, 2005). The Cronbach's alpha of the SWLS in Study 1 was $\alpha = .76$. In that study, the average score for the SWLS was $M = 24.87$ ($SD = 5.96$). Wong, Lee, Ang, Oei and Ng (2009) found similar results using the SWLS $M = 24.38$ ($SD = 7.35$), with Australian students whose mean age was $M = 19.02$ ($SD = 3.19$).

Health-promoting behaviours. The Health Promoting Lifestyle II Profile (HPLPII; Walker, Sechrist, & Pender, 1995) is a revised version of the original Health Promoting Lifestyle Profile (Walker, Sechrist, & Pender, 1987) used to measure health-promoting behaviours. The HPLPII has been used internationally, involving various clinical and non-clinical populations (Ennis, Thain, Boggild, Baker, & Young, 2006; Jensen, Decker, & Andersen, 2006; Stark, Manning-Walsh, & Vliem, 2004). The HPLPII scale has also been used within the context of higher education, specifically in determining health-promoting behaviours of university students (Al-Kandari & Vidal, 2007; Al-Kandari et al., 2008; Can et al., 2008; Choi Hui, 2002; Haddad et al., 2004; Lee & Loke, 2005), and the original HPLP scale has also been used with nursing students (Alpar, Senturan, Karabacak, & Sabuncu, 2008; Kwong & Kwan, 2007). Previously reported reliability of the total HPLPII has shown an internal consistency of $\alpha = .94$ (Al-Kandari et al., 2008; Walker & Hill-Polerecky, 1996) and $\alpha = .79$ to $\alpha = .87$ alpha coefficients ranging across the six subscales (Walker et al., 1996). The Cronbach's alpha for the total HPLPII in Study 1 was $\alpha = .94$, and across subscales between $\alpha = .77$ and $.86$.

The Health Promoting Lifestyle II Profile is a 52-item survey which includes subscales in the following areas: nutrition (nine items), physical activity (eight items), spiritual growth (nine items), interpersonal relationships (nine items), stress management (eight items) and health responsibility (nine items). Items are measured using a 4-point likert scale to measure how often students engaged in health-promoting behaviours, 1 (*never*), 2 (*sometimes*), 3 (*often*) and 4 (*routinely*). A mean of > 2.5 is considered a positive response to health-promoting behaviours (Al-Kandari & Vidal, 2007; Al-Kandari et al., 2008). Subscale means are created by adding each score for within the subscale and dividing by the number of items. A total health-promoting behaviours score can be calculated by summation of all items scores across the six subscales and divided by the total number of items (Can et al., 2008). Lee and Loke (2005) suggested that cut-offs where students respond with either *often* or *routinely* should be considered as evidence of practising the health promoting behaviour.

The way in which data is often presented on the Health Promoting Lifestyle Profile II varies between studies. Some authors report a total subscale score with a theoretical range from 52 to 208 (Alpar et al., Wang, 2001), whereas others have reported subscale means and a total HPLPII mean (Al-Kandari et al., 2008; Becker et al., 2007; Can et al., 2008). It is recommended however, that the means of the subscales be used to retain the one to four metric of item responses, and to allow meaningful comparisons of scores across subscales, as opposed to reported total scales (Walker & Hill-Polerecky, 1996).

The nutrition subscale of the Health Promoting Lifestyle II Profile (Walker et al., 1995) relates to dietary consumption patterns; for example, how many serves of fruit and vegetables a person consumed each day, and the extent to which people engaged in relatable nutrition behaviours, such as reading nutrition labels on food packaging. The physical activity scale was related to the intensity of activities (light, moderate or vigorous) and the

frequency of activities. Physical activity as an outcome, can be viewed in the context of either planned (going to the gym), or incidental (doing housework) behaviours.

The spiritual growth dimension of the Health Promoting Lifestyle II Profile, does not necessarily have a religious context, but is focused on concepts such as peace, wellness, wholeness and harmony (Walker et al., 1995). One's ability to achieve these states of mind can lead one to a balanced and whole life, including working towards goals by having a sense of purpose in life.

The interpersonal relationship dimension of the Health Promoting Lifestyle II Profile relates to the ability of the person to form close and intimate personal relationships, which incorporate effective and positive communication (Walker et al., 1995). Health responsibility refers to an individual's ability to seek appropriate health care information, takes a proactive approach to health and wellbeing cognisant of one's body, (being aware of signs and symptoms and normal states). Finally, the stress management dimension is described as being able to recognise stressors and stress responses and seeking active ways (physical or psychological) to reduce tensions.

Health-risk behaviour variables. These variables included BMI, psychological distress, smoking, and hazardous drinking.

Body mass index. Body mass index (BMI) provides an estimate of healthy weight range, based on a person's height and weight measurement. In this study, BMI was obtained by students self-reporting their height and weight, in a free text box. This data was then used to calculate BMI by weight in kilograms, divided by the squared height in metres (National Health and Medical Research Council, 2009). Female students were also asked whether they were currently pregnant, as this could affect their weight. These female students were asked to provide their pre-pregnant weight. The pre-pregnant weight was then used to calculate each student's BMI.

BMI data was then grouped according to the World Health Organisation's International Classification of adult underweight, overweight and obesity. For people over the age of 18 years, having a BMI of less than 18.5 kg/m² is categorised as *underweight*, 18.5 - 24.99 kg/m² in the *normal weight range*, 25 - 29.99 kg/m² as *overweight*, and 30⁺ kg/m² as *obese*.

Psychological distress. In Study 1, *psychological distress* was measured using the Kessler Psychological Distress Scale (K10; Kessler et al., 2002). As a screening tool, it has utility in identifying people who would benefit from further clinical assessment and intervention, by using a range of behavioural, emotional, cognitive and psycho-physiological domains (Kessler et al., 2003). The scale has been used in other university settings within Australia (Stallman, 2008, 2010), and higher levels of psychological distress have been found in university students than the general population (Cvetkovski et al., 2012; Stallman, 2010).

Stallman's (2010) study involving 6,479 students across two Australian universities found that when compared with a national health survey sample, 19.2% of university students experienced very high levels of psychological distress compared to 3% of the general population. Most students reported elevated distress levels (83.9%) compared with (29%) in the population survey sample. The key predictors of distress were associated with being between 18 and 34 years of age, being female, experiencing financial stress, and being in subsequent years of their program of study (Stallman, 2010).

The Kessler Psychological Distress Scale is a 10-item, 5-point likert scale, indicating how often a student had experienced symptoms of distress in the previous 4 weeks, from 1 (*none of the time*) to 5 (*all of the time*). Scores on the K10 can range from 5 to 50 (Andrews & Slade, 2001; Australian Bureau of Statistics, 2003; Kilkkinen et al., 2007). The following scores are indicative of psychological distress; 10-15 (*low distress*), 16-21 (*moderate distress*), 22-29 (*high distress*) and 30-50 (*very high distress*). These same cut-off scores

were also used by Stallman (2010) in a large university sample. Reliability has been previously reported with a Cronbach's alpha of $\alpha = .89$ (Stallman, 2010). The reliability in Study 1 was consistent, with $\alpha = .91$.

Students who completed the K10 were able to receive immediate feedback as to their score, and were provided with information on how to interpret and what they could do about their score (including links to other sites that could help support). Stallman (2010) indicates that based on population data, scores between 30 and 50, may indicate probable serious mental illness. Therefore the ability to provide immediate feedback to students who could potentially seek help was considered very important.

Smoking status. Students' smoking status was categorised as *current smoker*, *ex-smoker* or *non-smoker*. Current smokers were defined as those smoking cigarettes, cigars or pipes either *daily*, *at least weekly* (not daily), or *less often than weekly* (Australian Bureau of Statistics, 2006). For the purposes of Study 1, students indicating a response of *not at all*, were classified as non-smokers. This coding is consistent with other Australian research (Smith, 2007; Sun et al., 2011). For simplicity, students were finally categorised as either *current smokers* or *non-smokers*.

Hazardous drinking. *Hazardous drinking* is defined as, "a pattern of alcohol consumption that increases the risk of harmful consequences for the user or others", and harmful use is described as, "alcohol consumption that results in consequences to physical and mental health" (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001, p. 5). The extent to which students engaged in hazardous or harmful alcohol consumption patterns was determined, using the AusAUDIT scale (Degenhardt et al., 2001).

The AusAUDIT is a 10-item scale, using a 5-point likert scale. Scores for the scale may range from 0 to 40. Reliability of the AusAUDIT has shown good consistency, with $\alpha = .76$ (Feil & Hasking, 2008). In Study 1, the Cronbach's alpha was higher with $\alpha = .80$.

The AusAUDIT is a modification of the extensively used Alcohol Use Disorders Identification Test, developed by the World Health Organisation (Babor et al., 2001). The AusAUDIT which has been validated in Australia aimed to increase sensitivity by changing cut-off points for males (seven) and females (six) respectively. This was to best identify those individuals with hazardous and harmful alcohol use, as per Australian recommendations of consumption levels of grams of alcohol.

Modifying cut-off points can reduce specificity at the expense of higher sensitivity, and there is some debate about specific cut-off points to determine hazardous drinking levels. Other research in Australian tertiary settings using the original AUDIT scale has used a cut-off of eight for both men and women (Reavley, Jorm, McCann, & Lubman, 2011; Rickwood et al., 2011). However, the AusAUDIT used with university students in Australia, has used a cut-off of 8 > categorising hazardous drinking (Feil & Hasking, 2008). For consistency, this study has similarly used the cut-off point of eight.

Student stress, strain and coping. In this study, student stress was measured using the Student Stress, Strain and Coping Scale (SSSCS; Sarah, 1997). The scale focused on academic stressors, interpersonal relationships, environmental and person related variables, which were modified from the Occupational Stress Inventory (Osipow & Spokane, 1987), commonly used to measure stressors, strains and coping in workplaces (Fogarty, Machin, Albion, Sutherland, Lalor, & Revitt, 1999; Gates, Fitzwater, & Succop, 2003). The SSSCS has been previously tested with a total of 179 on-campus and external students from USQ, however only with first and second year psychology and education students. A broader sample of students across faculties may yield different results and is therefore worthy of further exploration (Can et al., 2008; Sarah, 1997).

The SSSCS is a 72-item scale, measured on a 4-point likert scale, with scores ranging from 1 (*rarely*), 2 (*occasionally*), 3 (*often*), 4 (*usually*) and 5 (*true most of the time*) according to what best fits the student. The original SSSCS contained the following measures;

- Student stressors: academic stressors, lifestyle and financial stressors, personal stressors, and interpersonal relationship stressors. Some items on the subscales were reverse scored.
- Student strains: academic, psychological/interpersonal, and physical strain.
- Student coping: recreation and self-care, social support, and problem-focused coping.

Reliability for each of the subscales has been reported as total stressors $\alpha = .84$, total coping $\alpha = .84$, and total strain $\alpha = .89$. In Study 1, the alpha coefficient for student stress was $\alpha = .85$, student coping $\alpha = .88$, and student strain $\alpha = .91$, respectively. A factor analysis of the SSSCS in Sarah's study (1997) indicated that 37.3% of the variance was explained by stress for internal and external students, 38.10% of the variance explained by coping, and 41.7% explained as the variance for strain, indicating good reliability of the overall scale in a university population (Sarah, 1997).

The theoretical ranges of total subscale scores are 24 to 120 (total student stressors), 25 to 125 (total student coping) and 23 to 115 (total student strain). Sarah's (1997) study involving a sample of USQ students found that they experienced a moderate level of stress ($M = 66.07$, $SD = 13.83$), used a number of effective coping strategies ($M = 84.48$, $SD = 13.09$), and had moderate levels of strain ($M = 55.91$, $SD = 14.78$).

Psychological variables. These included general self-efficacy, positive affect and negative affect.

General self-efficacy. Self-efficacy is an individual's self-belief in their ability to cope with stressors and demands. Higher self-efficacy has been found to positively predict

engagement in health-promoting behaviours (Karademas & Kalantzi-Azizi, 2004; Luszczynska et al., 2005; Von Ah et al., 2004; Zalewska-Puchala et al., 2007).

General self-efficacy was measured using the General Self-Efficacy scale (GSE) which is a 10-item scale. It uses statements such as, “I can manage to solve difficult problems if I try hard enough”, and “when I am confronted with a problem, I can usually find several solutions”. Theoretically, scores may range from 10 to 40.

Each item is based on a 4-point likert scale, with responses including 1 (*not at all true*) to 4 (*exactly true*). Summed responses provide a total scale score (Schwarzer & Renner, 2009). A large multicultural validation study found Cronbach’s alphas to be $\alpha = .94$ among patients with cardiovascular disease, and $\alpha = .90$ with Polish university students (Luszczynska et al., 2005). The means of the GSE scale had been found across samples to range from ($M = 28.77$, $SD = 5.37$) in a community sample in South Korea, to that among Polish university students ($M = 30.35$, $SD = 4.00$), with GSE higher in males than females (Luszczynska et al., 2005). In Study 1, reliability was $\alpha = .89$.

Positive and negative affect. The constructs of positive affect and negative affect were measured in this study, using the Positive and Negative Affect Schedule (PANAS) developed by Watson et al. (1988). The PANAS is a 20-item scale, including 10 positive affect items and 10 negative affect items, with scores ranging between 10 and 50. Respondents are asked to indicate the extent to which they felt certain emotions within the last week on a 5-point likert scale, ranging from 1 (*very slightly or not at all*) to 5 (*very much*). Examples of positive affect items include adjectives such as “interested” or “determined”; negative affect items included adjectives such as “guilty” or “irritable”.

The PANAS has been widely used in various populations such as blue collar women (Kelsey et al., 2006) and university samples (Bye et al., 2007; Collard, Anvy & Boniwell, 2008; Powers, Cramer, & Grubka, 2007). Previous reliability of the PANAS has been

reported as $\alpha = .89$ for positive affect and $\alpha = .85$ for negative affect (Crawford & Henry, 2004). In Study 1, positive affect was found to be very reliable with $\alpha = .91$ and negative affect $\alpha = .88$. Average scores based on a weekly timeframe for positive affect have been found as $M = 32.0$, $SD = 7.0$, and negative affect $M = 19.5$, $SD = 7.0$ (Watson et al., 1988).

Academic variables. These included mode of study, accessing USQ support, grade point average, and intention to leave.

Mode of Study. Students were categorised as studying either on-campus or distance. Distance students were classified where the majority of study was by external mode. Students who indicated that they were studying the majority of their study by mixed/flexible mode were excluded from the study.

Accessing USQ support. Student support has been defined as “the university’s interaction with a student, whether it be with academic or service professional staff, that enhances the study experience” (Coates & Ransom, 2011). In this context, support offered to students at USQ has been based upon a range of services which students may access, for academic and other welfare, health and social reasons (Ballantine, 2008).

Accessing USQ support was measured, using a 10-item subscale of a Student Learning and Support Services survey (previously developed by USQ Student Services). This measured the frequency with which students utilised services, such as counselling and medical services, with responses ranging from 0 (*never*) to 4 (*very often*). Theoretically, scores could range from 0 to 40. Given that this study involved students from USQ, this subscale was deemed appropriate for inclusion. A mean of the total scores was used for data analysis. The Accessing USQ Support scale’s reliability was $\alpha = .76$.

Grade point average. Actual grade point average data (GPA) was obtained for each student who was included in Study 1. Unlike the original USQ Health and Wellbeing Survey (see Appendix E) which used self-reported data, obtaining actual GPA was considered

important to improve accuracy. Students' actual GPA was based on cumulative data and was current at S2, 2011. As some students who had completed the survey had not yet acquired a GPA, there were missing data. Subsequently, analyses involving GPA were based on a listwise sample of 641, which excluded those without a GPA. At USQ, GPA can range from 1.5 to 7, with the following grades of $HD = 7$, $A = 6$, $B = 5$, $C = 4$, $D = 3$ and $F = 1.5$.

Intention to leave. Students' intention to leave was obtained by using an online subscale of the Australasian Survey of Student Engagement Questionnaire (AUSSE). The AUSSE "was designed to help stimulate evidence-focused conversations about students' engagement in university study, and provide institutions with information that they can use to monitor and enhance the quality of education they provide to their students" (Australian Council for Educational Research, 2012).

Students were asked to indicate whether they had considered leaving university (0 = *No* or 1 = *Yes*) within the last academic year. Those students who were intending to leave were asked to specify their reasons, for example, whether they had difficulty with workload, financial difficulties. Students were also asked to indicate their study plans for the following year, for example, leave to do paid work, or continue with current study.

Procedure and Ethical Considerations

Ethical clearance to conduct the study was obtained from USQ's Office of Research and Higher Degrees, with approval number (H10REA137.1), see Appendix F. The USQ Health and Wellbeing Survey (see Appendix H) was made available to all currently enrolled students at USQ regardless of study mode or study location at the commencement of semester 2, 2011. Not only was the survey available to those studying within Australia, access to the survey was also made available to international partner students residing overseas. The survey was promoted to all USQ students via a weblink on the student announcements section of USQ's "UConnect" portal. Permission was obtained from the Pro-Vice Chancellor

(Student Management) to survey USQ students. The survey was developed with the assistance of the Planning and Quality Unit of the university, to ensure the security of the data, and also to develop the survey in a format consistent with university standards. Prior to the opening of the survey link to students, the link was tested with staff, and data was removed prior to the “live survey link” to students.

Students were invited to participate regardless of study mode, USQ campus, or level of program or faculty. Those studying by distance included international partner students. The total accessible USQ student population was 22,605 (excluding those studying by multimodal/flexible delivery). In Study 1,842 participants accessed the online survey, resulting in a response rate of 3.23%; however a final data set of 766 was carried forward for further analysis following data screening.

The survey was opened to students on 18th July, 2011 in the first week of semester 2, 2011 and closed on 21st September, 2011. The timing to commence the survey was considered optimal for capturing students’ attention whilst they were accessing their study material at the beginning of second semester. In addition, the timing of the survey was intended to protect students, by ensuring that they were not overburdened around key assessment periods. The survey was closed when it was considered that the response rate had dropped significantly over a period of time.

The USQ Health and Wellbeing survey was structured with the first section containing the plain language statement (see Appendix H). This included a consent box for students to click to ascertain their willingness to participate, and for the researcher to obtain their current GPA data. Also included was information about Study 2, with a link provided at the end of the survey. As an ethical consideration, a separate link was created for confidentiality reasons, so that the data from the survey could not be linked with the student’s

interest in participating in Study 2. In the main section of the survey, all items in the survey were required fields.

As in the original USQ Health and Wellbeing Survey, instant feedback was provided to students during the survey, which corresponded to their psychological distress levels. Students with low levels of distress were encouraged to maintain good mental health, using a range of strategies via a website link. Students experiencing moderate to high levels of distress were encouraged to seek professional help, such as accessing their GP and or other support services. Any students who had difficulties in linking to the survey were referred to the Planning and Quality Unit for assistance.

A “thank you page” was linked at the end of the survey to a number of USQ related health and wellbeing services, so that students could access support or explore general ways to improve their general health and wellbeing. On completion of the survey, students were redirected to a survey link which offered the opportunity to enter a prize draw. Students were given the choice of either a \$350 USQ book voucher, or an iPod Classic. After closing access to the survey a winner was chosen using random selection.

Results

Data Screening

Issues such as missing data, detecting outliers and examining normality, linearity and homoscedasticity were important processes in screening data prior to analysis (Tabachnick & Fidell, 2007). To ensure that parametric data were able to be used accurately in a number of parametric tests, a number of statistical assumptions needed to be met. These related to having normally distributed data (observing skewness, kurtosis, linearity and homogeneity of variance). In correlational designs, means across variables should be stable and normally distributed (Abdullah, Fielding, & Hedley, 2003; Field, 2009; Tabachnick & Fidell, 2007).

Examining normality was determined graphically by observing p-plots and statistically, such as using homogeneity of variance tests (Tabachnick & Fidell, 2007).

Data screening began with removal of duplicate cases from the dataset ($n = 20$). A visual inspection determined that these were randomly distributed. When duplicate cases were identified, the student's first entry was retained and subsequent duplicates removed.

Visual inspection of the demographic data revealed some inconsistencies. In relation to students' age, participants sometimes entered their year of birth rather than their age. In this case, students' correct age was determined by cross checking with their student record. In addition, some students entered text rather than numerical values for hours of employment or caring for dependants, and in this case, the variable's mean was substituted for the students' data.

A visual inspection of the BMI data revealed inconsistencies with extreme cases of height and weight. For example, case 764 entered a height of 81cm and a weight of 75 kg, which when calculated, resulted in a BMI of 114.31, which would be considered an extreme outlier. There are suggestions for removing cases above the 99th percentile (Field, Aneja, & Rosner, 2007). These include choosing cases within a category to be deleted, such as all cases above a BMI of 60 (de Wit, van Straten, van Herten, Penninx, & Cuijpers, 2009), deleting cases above or below certain standard deviations from the mean, for example ± 2 or 4 (Craig, Halavatau, Comino, & Caterson, 2001; Hayes, Clarke, & Lung, 2011; Hayes, Kortt, Clarke, & Brandrup, 2008) or truncating values for height and weight (Miller, 2003). Furthermore, deleting extreme cases can also be based upon self-reported heights > 190 or < 120 cm, and weight measurements > 120 or < 30 kg as used in the Australian Longitudinal Study of Women's Health (Miller, 2003). For the purposes of Study 1, those cases with self-reported heights above or below these were deleted. Given that most of the participants in

Study 1 were women, this was considered appropriate. In total, seven cases were deleted due to a BMI higher than 60 (de Wit et al., 2009).

Data screening involved the visual inspection of frequency distributions through histograms observing normal distribution. Tests for normality were explored via the use of p-plots, and q-plots where the data points fell close to the diagonal line (Field, 2009; Tabachnick & Fidell, 2007).

A regression analysis was conducted to identify multivariate outliers. There were 26 variables in total, with a Mahalanobis distance of $\chi^2(26) = 54.05$, which corresponded to a critical value chi square table (Tabachnick & Fidell, 2007, p. 949). “Mahalanobis distance is the distance of a case from the centroid of the remaining cases, where the centroid, is the point created at the intersection of the means of all of the variables” (Tabachnick & Fidell, 2007, p. 74). Mahalanobis distance $\chi^2(p < .001)$ revealed 23 outlier cases confirmed with a visual inspection of data.

Finally, study mode was categorised as two major groupings, *on campus* (Toowoomba, Fraser Coast and Springfield campuses), or *distance* (external and online students). For simplicity, it was decided to exclude those students studying by mixed mode/flexible delivery, as these students may have access to services and supports similar to on-campus students and may potentially skew the results. Among these, 26 (3.16%) indicated that they were studying by mixed/flexible mode, and as such, were excluded from the final analyses.

Data Analysis

The Statistical Package for Social Sciences (SPSS Version 19) was used for descriptive and inferential data analysis, with AMOS (Version 19) used in development of the path models (discussed further in this chapter). Initially, descriptive statistics were used to summarise the data. Reverse scoring of items in the student stress, strain and coping scale

were conducted initially, followed by reliability analysis. All variables had acceptable reliability except for interpersonal/relationship stress ($\alpha = .58$) within the student stress, strain and coping scale. Subsequently, it was decided to exclude this subscale when exploring student stress. Student stress (excluding interpersonal/relationship stress) was then recalculated for reliability, resulting in an improved student stress Cronbach's alpha of $\alpha = .84$.

When correlation analyses involving GPA were conducted, these were calculated listwise on 641 cases, as not all students had acquired a GPA. Pearson's correlations were used to explore the relationships between study variables, with correlations ranging from small ($r = .10$), to medium ($r = .30$) or large ($r = .50$), with a significance level set at $p < .05$ (Cohen, 1992). Tabachnick and Fidell (2007) outline effect sizes as *small* ($\eta^2 = .01$), *medium* ($\eta^2 = .09$) or *large* ($\eta^2 = .25$).

In relation to smoking and intention to leave, these variables were analysed independently as both were dichotomous variables. In this case, point-biserial correlation coefficients were used. The (r_{pb}) coefficients have been included in the correlation matrix. The correlational analysis of the relationship between smoking and intention to leave was not appropriate using Pearson correlations; subsequently Pearson's chi-square was conducted.

MANOVAs were used to test for group differences between on-campus and distance students by testing the effects of study mode and gender across study variables (Tabachnick & Fidell, 2007). A path analysis was then developed to predict academic outcomes using study relationships, and the model was tested across the two groups (Maruyama, 1998; Tabachnick & Fidell, 2007). In Study 1, variables considered for inclusion in the path model were determined by: (a) examining the relationships between key variables, (b) ensuring that the variables made conceptual/theoretical sense, and (c) that there was a small to moderate effect size of $r = .20$ (Cohen, 1992).

A model exploring the relationship between variables may be created using structural equation modelling, of which path analysis is one technique. In this case, it uses a number of statistical techniques to explore and explain the relationships between a hypothesised set of variables (Tabachnick & Fidell, 2007). According to Maruyama (1998), “all tests, test for differences between the variance/covariance matrix predicted by the model, and the sample variance/covariance matrix from the observed data” (p. 196).

Path analyses are useful for researchers to clarify ideas about the nature of the relationships in conjunction with existing theoretical models. They are graphically represented, with lines between variables indicating relationships. Figure 6 outlines a number of path modelling notations (Maruyama, 1998, p. 58).

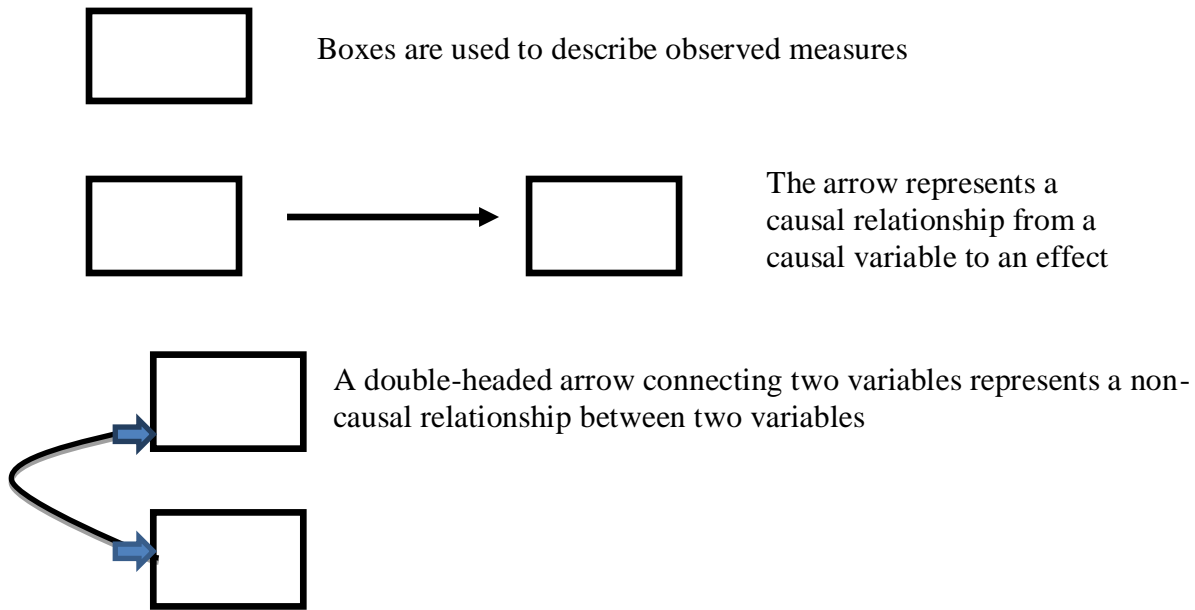


Figure 6. Notations for Path Analysis

Rectangles represent the observed or measured variables, and the flow of causality moving left to right. Results of a path analysis can provide estimates of the magnitude of the hypothesised effects and secondly, the testing of the model with the observed data (Klem, 1995) as cited in (Grimm & Yarnold, 1995).

It is important to aim for a good fitting model which adequately represents the data. Schumacker and Lomax (2010) recommend three criteria when evaluating the fit of a model: (a) the non-statistical significance of the chi-square test and root-mean-square error of approximation (RMSEA) as global fit measures, (b) individual parameter estimates (t value at .05 significance), and (c) the magnitude and direction of the estimate (ensuring that the relationships correctly represent negative or positive correlations). Exploring goodness of fit compares the data set with the proposed model, by examining the standardised estimates for all paths.

A good fitting model has been recommended as $\chi^2 / (df) < 3$, a comparative fit index (CFI) $> .95$, and a RMSEA $< .05$ (Hu & Bentler, 1999). In addition, the sizes of standardized path coefficients are suggested as *small* $< .10$, *medium* $\sim .30$, and *large* $> .50$ (Kline, 2005).

Data Coding

Recoding of the original data set was necessary as some items, for example BMI required to have a total score as only the students' original self-reported height and weight was collected. A total BMI score was calculated by recoding into standard BMI categories. The BMI cut off points were $< 18.5 = \textit{underweight}$, $18.5 - 24.99 = \textit{normal weight}$, $25 - 29.99 = \textit{overweight}$, and $> 30 = \textit{obese}$. This process was similar to the Kessler 10 scale. In this case, individual scores were calculated as a total Kessler 10 score, and later categorised into distress categories of 1 = *low distress*, 2 = *moderate distress*, 3 = *high distress* or 4 = *very high distress*. For each of the health-promoting behaviours subscales and the student stress, strain and coping scales, a total subscale score was calculated, which was then used to calculate a subscale mean.

Demographic Characteristics of Study 1 Sample

Distance students were mostly employed in one job on a permanent full-time basis (47.78%), compared with on-campus students being employed either casually (38.89%) or not employed (39.3%). This is reflected in the number of hours in paid employment each week, with distance students working longer hours ($M = 27.93$, $SD = 19.00$), than on-campus students ($M = 12.33$, $SD = 12.63$). In addition, distance students spent more time caring for dependants ($M = 32.05$, $SD = 42.04$), than on-campus students ($M = 28.43$, $SD = 45.60$).

With respect to ethnicity, few students indicated that they were either Indigenous or from non-English speaking backgrounds and the percentages for on-campus and distance students were found to be similar. Most students in the Study 1 sample lived in either major cities or inner regional areas. However, distance students were more likely to live in outer

regional areas (13.3%), than on-campus students (4.1%). No on-campus students resided in either remote or very remote areas, despite a small percentage of distance students in these locations.

Compared with USQ students, this Study 1 sample appeared somewhat representative. USQ Headcount statistics (2006-2010) indicated that the entire accessible student population in 2010 was 22,605 with 19,223 (85.04%) categorised as studying by distance mode (excluding multimodal attendance), and 3,382 (14.96%) studying on campus. Whilst the Study 1 sample had more distance students than on-campus students, which is typical at USQ, the sample had more on-campus students than would be found in a more representative USQ sample.

Across USQ, distance students are more likely to be between 30-40 years of age ($n = 5,504$), as opposed to on-campus students who are likely to be between the ages of 20-25 years ($n = 963$). Therefore, the Study 1 sample of on-campus students may be slightly older than typical of USQ students in general, but the age of the distance students is representative of USQ students. Typically at USQ, there is a relatively even mix of female students 11,953 (52.88%) and male students 10,652 (47.12%). However, the Study 1 sample included more females than is usually representative of USQ students; however more females at USQ study by distance (52.36%) than on-campus (9.82%). The academic characteristics of students appear in Table 7, which are discussed following the socio-demographic characteristics in Table 6.

Geographically, the distance students in the Study 1 sample were less representative of USQ, thereby indicating a more Australian cohort. According to USQ headcount statistics (2006-2010), approximately 29.07% of students indicated that their broad region of residence (home) was outside of Australia. Most distance students enrolled at USQ, reside outside

Australia and are located in Asia ($n = 4,199$). Only 4.28% of distance students in Study 1 resided outside Australia (see Figure 7).

Table 6

Demographic Characteristics of On-Campus and Distance Students

Variable	On-Campus Students ^a		Distance Students ^b	
	<i>n</i>	%	<i>n</i>	%
Age (years)				
18-24	153	56.67	100	20.16
25-39	74	27.41	255	51.41
40 ⁺	43	15.93	141	28.43
Gender				
Female	222	82.22	380	76.61
Male	48	17.78	116	23.39
Marital status				
Married	56	20.74	240	48.39
Single	152	56.30	121	24.39
De facto	36	13.33	80	16.13
Separated	9	3.33	20	4.03
Divorced	14	5.19	32	6.45
Widowed	3	1.11	3	0.60

Note. $N = 766$. On-Campus Students^a ($n = 270$), Distance Students^b ($n = 496$).

Cont. over

Table 6 (continued)

Demographic Characteristics of On-Campus and Distance Students

Variable	On-Campus Students ^a		Distance Students ^b	
	<i>n</i>	%	<i>n</i>	%
Employment status				
Full-time	8	2.96	237	47.78
Part time	45	16.67	64	12.90
Casual	105	38.89	63	12.70
Fixed contract	6	2.22	17	3.43
Not currently	106	39.26	113	22.78
Employed				
Missing data	0	0.00	2	0.40
Number of jobs				
0	106	39.26	116	23.39
1	126	46.67	330	66.53
2	34	12.59	44	8.97
3	3	1.11	5	1.01
4	1	0.37	2	0.20

Note. *N* = 766. On-Campus Students^a (*n* = 270), Distance Students^b (*n* = 496).

Cont. over

Table 6 (continued)

Demographic Characteristics of On-Campus and Distance Students

Variable	On-Campus Students ^a		Distance Students ^b	
	<i>n</i>	%	<i>n</i>	%
Ethnicity				
Indigenous	7	2.59	7	1.41
Non-English Speaking	20	7.41	39	7.86
ASGC-RA ^a				
RA1 (Major cities)	55	20.37	212	43.26
RA2 (Inner regional)	204	75.56	172	35.10
RA3 (Outer regional)	11	4.07	66	13.47
RA4 (Remote)	0	0.00	5	1.02
RA5 (Very remote)	0	0.00	14	2.86
International Overseas	0	0.00	21	4.28

Note. $N = 766$. On-Campus Students^a ($n = 270$), Distance Students^b ($n = 496$). ASGC-RA^a (Australian Standard Geographical Classification Remoteness Area).

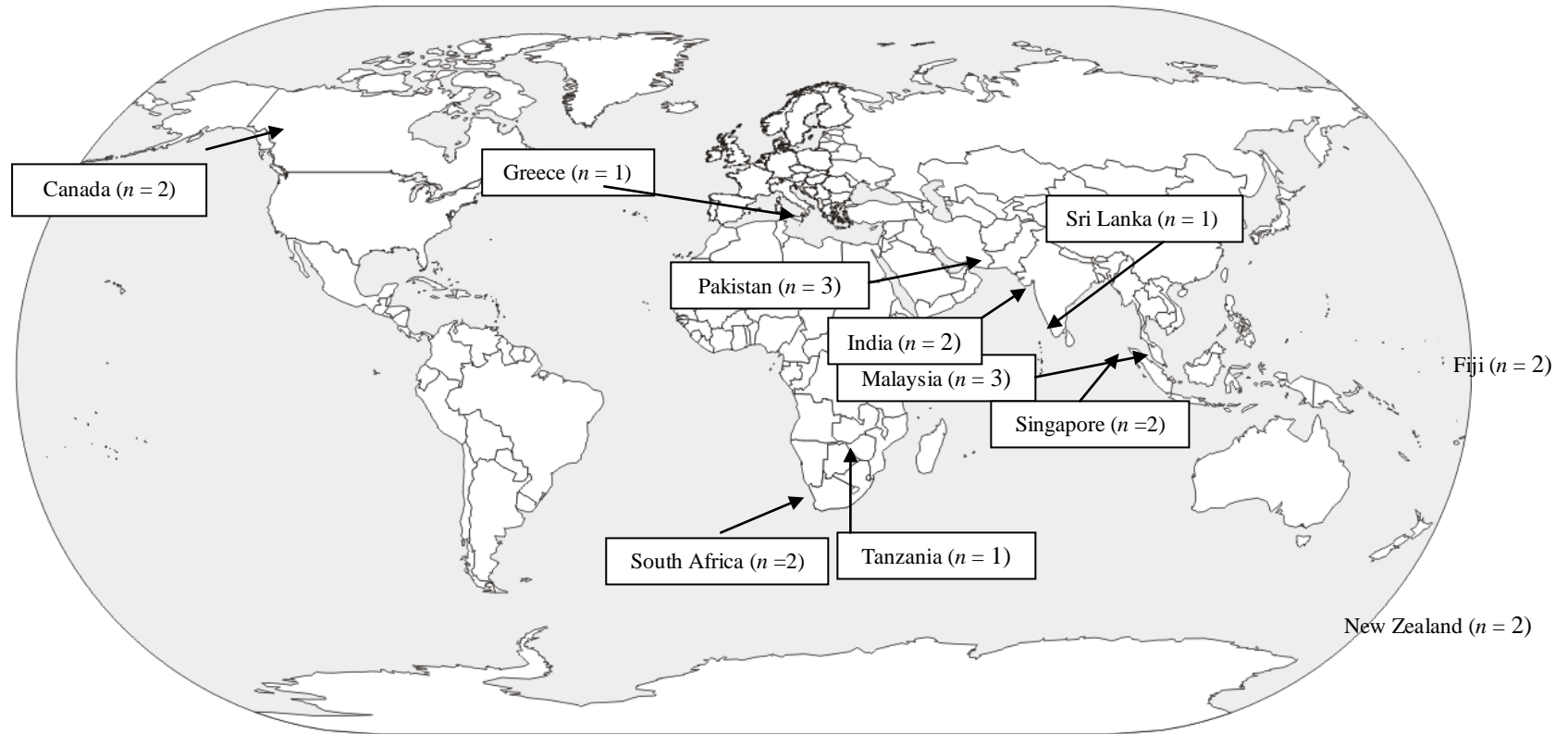


Figure 7. Location of International Overseas Distance Students in Study 1

Table 7

Academic Characteristics of On-Campus and Distance Students

Variable	On-Campus Students ^a		Distance Students ^b	
	<i>n</i>	%	<i>n</i>	%
Level of Program				
Higher degree research	3	1.11	4	0.81
Higher degree coursework	3	1.11	48	9.68
Other postgraduate	7	2.59	69	13.91
Bachelor	236	87.41	312	62.90
Other undergraduate	18	6.67	51	10.28
Enabling/non award	3	1.11	12	2.42
Faculty				
Arts	44	16.30	66	13.31
Business and Law	48	17.78	142	28.63
Education	55	20.37	108	21.78
Engineering and Surveying	10	3.70	58	11.69
Sciences	110	40.74	114	23.98
Continuing and Prof Devel. ^a	3	1.11	7	1.41
CAIK ^b	0	0.00	1	0.20

Note . N = 766. On-campus ^a (n = 270), Distance Students ^b (n = 496). Continuing and Prof Devel.^a = Continuing and Professional Development. CAIK^b = Centre for Australian Indigenous Knowledges.

Table 7 presents the academic characteristics of the Study 1 sample. Most students, regardless of study mode, were undertaking a Bachelor's degree. This appears representative of USQ data, where in 2010, most distance students were studying in an undergraduate program (67.31%), as opposed to postgraduate study (32.69%). In relation to USQ on-campus students, most study in undergraduate programs (82.58%) rather than postgraduate programs (17.42%).

In Study 1, the Faculty of Sciences had the greatest proportion of on-campus students completing the survey ($n = 110$). For distance students, most were from the Faculty of Business and Law and the Faculty of Education respectively. Compared with USQ in 2010, the top three faculties in which most distance students were enrolled, were the Faculty of Business and Law ($n = 7,373$), the Faculty of Education ($n = 3,228$) and the Faculty of Engineering and Surveying ($n = 3,036$). In relation to the Study 1 sample, the distance students were reasonably representative of USQ distance students in general, except that more students participated from the Faculty of Sciences than the Faculty of Engineering and Surveying.

On-campus students were enrolled in more courses in the 2011 academic year ($M = 7.34$, $SD = 2.47$), than were distance students ($M = 4.58$, $SD = 2.32$). On-campus students had successfully completed more courses in their program of study ($M = 9.48$, $SD = 7.42$) than distance students ($M = 6.91$, $SD = 6.90$). In terms of GPA, on-campus students had a higher GPA on average ($M = 5.22$, $SD = 1.05$) compared with distance students ($M = 5.19$, $SD = 1.24$).

Another key academic characteristic of students was intention to leave. Whilst intention to leave was measured as either a *yes* or *no* response, of importance are the reasons why students consider leaving university (Australian Council for Educational Research, 2012). Descriptive analysis found that 35.9% of on-campus students had considered leaving

university within the next 12 months, compared with 28.8% of distance students. Intention to leave reasons for on-campus students are presented in Figure 7.

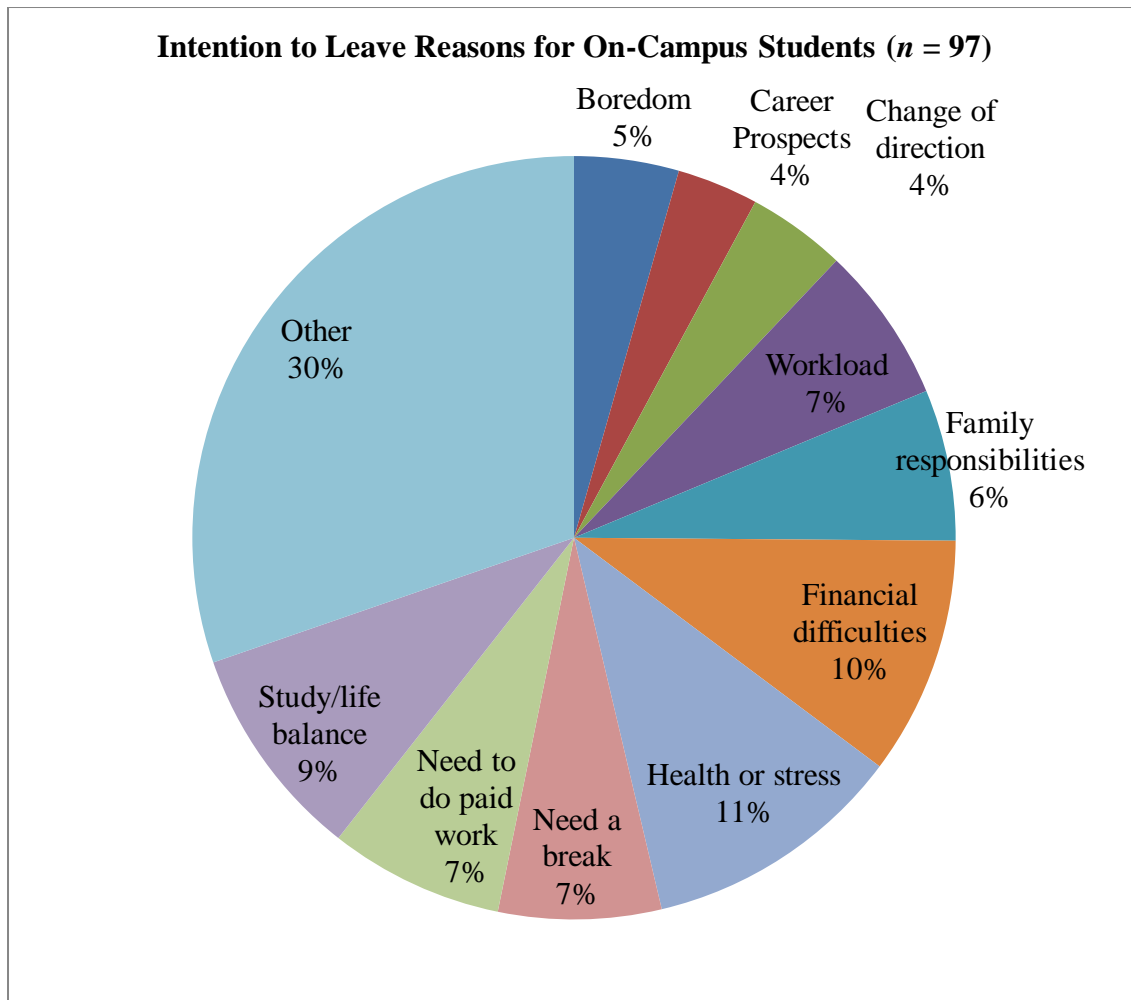


Figure 8. Intention to Leave Reasons for On-Campus Students

The results indicated that the top three reasons for on-campus students to consider leaving university within the next 12 months were due to issues around health or stress (11%), financial difficulties (10%), followed by study/life balance (9%). Whilst the term “other” appears to be the most substantial factor in the graph, this referred to the remaining factors which individually were less than those represented in the graph, but

collectively made up the remaining reasons why students may leave. Some of the items contained within “other” included aspects such as moving residence or quality concerns.

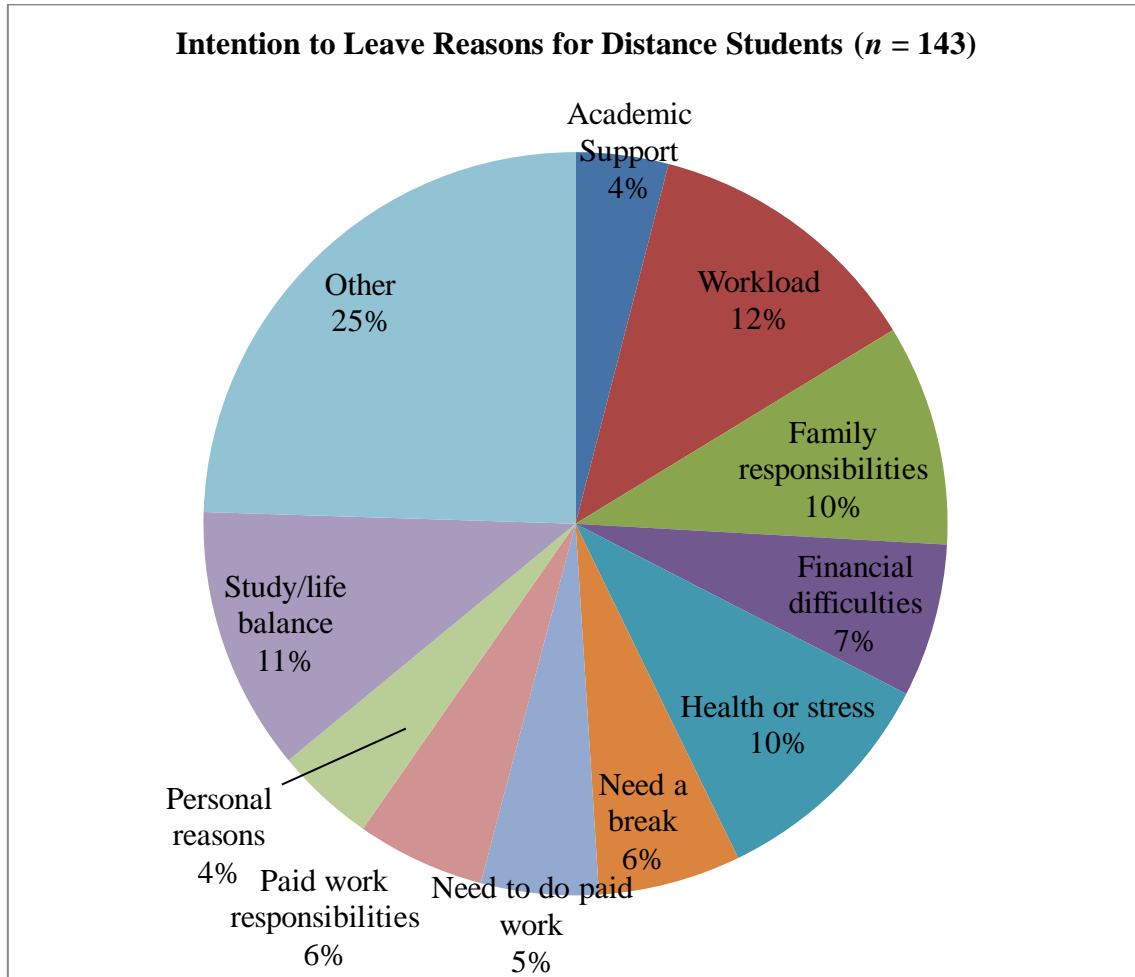


Figure 9. Intention to Leave Reasons for Distance Students

Figure 9 represents the main reasons distance students considered leaving the university. As indicated, the top three reasons for considering leaving were related to issues of workload (12%), study/life balance (11%), and an equal representation of both health and stress at (10%), and family responsibilities (10%), respectively. As in Figure 8, “other” represented the many other factors which may be reasons to leave, which however were not rated as highly as those reasons indicated in the figure (see Figure 9).

Overall, these findings indicated that for distance students, issues surrounding the need to balance family, work and study appeared to be a more critical factor for intention to leave as compared with on-campus students. Addressing family responsibilities appeared more important for distance students than on-campus students, and an inability to meet family demands as a main reason for intending to leave.

Research aim 1. The first aim of Study 1 was to examine the relationships between key study variables. The examination of bivariate correlations may be considered a rudimentary step when examining the relationships between variables (Heppner, Witty, & Dixon, 2004). Nevertheless this was considered an important preliminary process prior to examining the cohort differences between on-campus and distance students using MANOVA, in addressing the second aim of Study 1.

In MANOVA, one of the main assumptions is that grouped variables need to be moderately correlated (Tabachnick & Fidell, 2007), therefore ensuring that this assumption could be met was another key objective of this research aim. Examination of bivariate correlations was also an important preliminary step, due to the large number of variables of interest. It was prudent to consider only variables that could be used to develop a good fitting path model. Developing a path model of study relationships was the third aim of Study 1.

The key variables of interest for this study were health risk and health-promoting behaviours, stress, strain, coping and academic outcomes. Table 5 presents a correlation matrix for all Study 1 variables, based on the whole Study 1 sample ($N = 766$). The relationships between the following grouped variables were examined in Study 1:

- Socio-demographic and study variables;
- General health and health-promoting behaviours;
- Health risk and health-promoting behaviours;
- Psychological variables and health-promoting behaviours;

- Health risk and student stress, strain and coping;
- Health-promoting behaviours and student stress, strain and coping;
- Psychological variables and student stress, strain and coping;
- Student stress, strain and coping and academic outcomes;
- Health-risk behaviours and academic outcomes; and
- Health-promoting behaviours and academic outcomes.

Table 8 outlines the correlation matrix examining the relationships between socio-demographic variables, general health variables, health promoting and health-risk behaviours, psychological variables, student stress, strain and coping, and academic outcomes, regardless of study mode.

Table 8

Correlation Matrix of Study 1 Variables

Variable Category	Variables	1	2	3	4	5	6	7	8	9	10
Socio-demographic	1. Age	1.00									
	2. Hours in paid employment	.11**	1.00								
	3. Hours caring for dependants	.18**	-.26**	1.00							
General health	4. Health value	.12**	.06	-.04	1.00						
	5. Self-reported health	.01	.01	-.04	.10**	1.00					
Health-risk behaviours	6. Wellbeing	-.04	.05	-.02	.11**	.40**	1.00				
	7. Body mass index	.28**	.06	.15**	-.10**	-.21**	-.14**	1.00			
	8. Psychological distress	-.17**	-.07*	-.05	-.10**	-.43**	-.52**	.06	1.00		
Student stress	9. Smoking	.04	.03	.03	-.02	-.12**	-.11**	.05	.14**	1.00	
	10. Hazardous drinking	-.16**	.08*	-.15**	-.03	-.07*	-.08*	-.06	.10**	.27**	1.00
	11. Academic	-.18**	.05	.01	-.08*	-.27**	-.27**	-.05	.43**	.10**	.11**
Student coping	12. Lifestyle/financial	-.15**	-.18**	.14**	-.05	-.39**	-.33**	.19**	.45**	.14**	.05
	13. Personal	-.10**	.01	.01	-.14**	-.32**	-.52**	.21**	.49**	.01	.02
	14. Recreation and self-care	-.06	-.10**	-.26**	.11**	.32**	.43**	-.14**	-.39**	-.10**	.04
Student strain	15. Problem-focused	.18**	.04	.03	.11**	.21**	.37**	-.08*	-.34**	-.08*	-.11**
	16. Social support	-.07	-.03	.03	.13**	.23**	.51**	-.09*	-.34**	-.03	.03
	17. Academic	-.31**	.05	-.08*	-.11**	-.28**	-.31**	.01	.46**	.07	.11**
Health-promoting behaviours	18. Physical	-.07*	.03	.09*	-.14**	-.45**	-.36**	.10*	.58**	.12**	.04
	19. Psychological/interpersonal	-.13**	-.02	.02	-.14**	-.44**	-.54**	.05	.75**	.16**	.11**
	20. Interpersonal relations	-.06	-.05	.05	.13**	.24**	.53**	-.14**	-.36**	-.05	-.07*
	21. Nutrition	.16**	.01	-.03	.23**	.32**	.35**	-.10**	-.32**	-.13**	-.05
	22. Health responsibility	.22**	-.08*	.09*	.26**	.10**	.22**	.01	-.26**	.00	-.09*
Psychological	23. Physical activity	-.05	.02	-.16**	.20**	.33**	.29**	-.20**	-.23**	-.10*	.03
	24. Spiritual growth	.10*	.03	.05	.19**	.33**	.60**	-.15**	-.54**	-.07	-.12**
	25. Stress management	.08	-.10**	-.10**	.21**	.33**	.43**	-.13**	-.44**	-.07	-.09**
	26. General self-efficacy	.17**	.07	.04	.09*	.30**	.38**	-.02	-.48**	.03	-.03
	27. Positive affect	.06	.04	-.02	.15**	.38**	.51**	-.10**	-.48**	-.04	-.07*
Academic outcomes	28. Negative affect	-.19**	-.07	-.01	-.12**	-.28**	-.40**	.02	.67**	.16**	.11**
	29. Grade point average	.21**	-.03	.10**	-.05	.14**	.12**	-.06	-.19**	-.10*	-.08
	30. Accessing USQ support	-.07	-.21**	-.01	.01	-.08*	.06	.04	.14**	.05	-.05
	31. Intention to leave	-.03	-.03	.04	-.02	-.23**	-.25**	.11**	.27**	N/A	.07

Note. $N = 766$. * $p < .05$, ** $p < .01$ (2 tailed). Smoking and Intention to Leave - Pearson's Point Biserial correlations coefficients reported. N/A = analysis for 2 dichotomous variables. GPA ($n = 641$).

Cont. over

Table 8 (continued)

Variable Category	Variables	11	12	13	14	15	16	17	18	19
Student stress	11. Academic	1.00								
	12. Lifestyle/financial	.42**	1.00							
	13. Personal	.30**	.36**	1.00						
Student coping	14. Recreation and self-care	-.34**	-.32**	-.40**	1.00					
	15. Problem-focused	-.32**	-.19**	-.45**	.30**	1.00				
	16. Social support	-.15**	-.14**	-.48**	.35**	.34**	1.00			
Student strain	17. Academic	.54**	.35**	.37**	-.25**	-.49**	-.27**	1.00		
	18. Physical	.48**	.44**	.37**	-.49**	-.27**	-.26**	.44**	1.00	
	19. Psychological/interpersonal	.52**	.50**	.54**	-.49**	-.40**	-.40**	.53**	.68**	1.00
Health-promoting behaviours	20. Interpersonal relations	-.16**	-.14**	-.55**	.33**	.39**	.68**	-.28**	-.21**	-.42**
	21. Nutrition	-.23**	-.26**	-.31**	.29**	.43**	.31**	-.35**	-.28**	-.37**
	22. Health responsibility	-.19**	-.08*	-.35**	.26**	.36**	.33**	-.33**	-.19**	-.28**
	23. Physical activity	-.16**	-.22**	-.32**	.41**	.32**	.23**	-.19**	-.25**	-.33**
	24. Spiritual growth	-.26**	-.27**	-.64**	.38**	.52**	.48**	-.38**	-.34**	-.53**
	25. Stress management	-.34**	-.30**	-.46**	.66**	.41**	.37**	-.34**	-.47**	-.51**
Psychological	26. General self-efficacy	-.29**	-.33**	-.53**	.25**	.55**	.26**	-.37**	-.32**	-.47**
	27. Positive affect	-.24**	-.23**	-.58**	.40**	.49**	.40**	-.38**	-.35**	-.54**
	28. Negative affect	.36**	.39**	.41**	-.31**	-.27**	-.25**	.38**	.47**	.69**
Academic outcomes	29. Grade point average	-.06*	-.13**	-.06	-.05	.21**	.11*	-.40**	-.09*	-.13**
	30. Accessing USQ support	.01	.11**	-.00	.10**	-.02	-.02	.03	.04	.09*
	31. Intention to leave	.32**	.22**	.18**	-.23**	-.17**	-.11**	.30**	.29**	.27**

Note. $N = 766$. * $p < .05$, ** $p < .01$ (2 tailed). GPA ($n = 641$).

Table 8 (continued)

Variable Category	Variables	20	21	22	23	24	25	26	27	28	29	30	31
Health-promoting behaviours	20. Interpersonal relationships	1.00											
	21. Nutrition	.42**	1.00										
	22. Health responsibility	.50**	.49**	1.00									
	23. Physical activity	.36**	.53**	.42**	1.00								
	24. Spiritual growth	.70**	.50**	.50**	.41**	1.00							
Psychological	25. Stress management	.51**	.49**	.54**	.56**	.63**	1.00						
	26. General self-efficacy	.36**	.31**	.27**	.26**	.54**	.37**	1.00					
	27. Positive affect	.52**	.38**	.40**	.45**	.68**	.53**	.51**	1.00				
Academic outcomes	28. Negative affect	-.27**	-.22**	-.18**	-.19**	-.37**	-.35**	-.38**	-.32**	1.00			
	29. Grade point average	.05	.18**	.09	.00	.10*	.01	.09*	.02	-.08*	1.00		
	30. Accessing USQ support	-.02	-.01	.13**	.07**	-.00	.14**	-.09*	.05	.17**	-.08*	1.00	
	31. Intention to leave	-.15**	-.15**	-.11**	-.10**	-.19**	-.21**	-.17**	-.18**	.16**	-.07	.02	1.00

Note. $N = 766$. * $p < .05$, ** $p < .01$ (2 tailed). GPA ($n = 641$).

Relationship between Socio-Demographic and Study Variables

Age was included as an important predictor in health-promoting behaviours, based on previous literature. In Study 1, firstly the relationships between age and all study variables were examined. There were significant positive relationships found across a number of variables, including health value ($r = .12, p < .01$), health responsibility ($r = .22, p < .01$), nutrition ($r = .16, p < .01$), spiritual growth ($r = .10, p < .05$), BMI ($r = .28, p < .01$), general self-efficacy ($r = .17, p < .01$) and GPA ($r = .21, p < .01$), however most had small effects.

Age was negatively correlated with psychological distress ($r = -.17, p < .01$), hazardous drinking ($r = -.16, p < .01$), academic stress ($r = -.18, p < .01$), lifestyle and financial stress ($r = -.15, p < .01$) and personal stress ($r = -.10, p < .01$). Age was negatively correlated with academic strain ($r = -.31, p < .01$) and psychological/interpersonal strain ($r = -.13, p < .01$). Although there were some significant relationships found with age across study variables, of those that were significant, most effects were small. Whilst the effects for age were small, the correlations indicated that age was a positive factor in relation to decreasing some stressors and strains, and may be linked with taking more responsibility for one's health.

In terms of hours in paid employment (average per week) and hours caring for dependants, also identified in the literature as potential sources of stress and strain for students, Table 8 indicated that both of these variables were not significantly related to most of the key Study 1 variables. Of those that were significant, effects sizes were small. Increased hours in paid employment was negatively correlated with lifestyle and financial stress ($r = -.18, p < .01$), psychological distress ($r = -.07, p < .05$), recreation and self-care coping ($r = -.10, p < .01$), and stress management ($r = -.10, p < .01$). These results indicate

that whilst being in paid employment might decrease factors like financial stressors, it influences one's ability to engage in activities which may be protective for health.

With respect to hours caring for dependants, this was found to be positively correlated with BMI ($r = .15, p < .01$), but negatively correlated with hazardous drinking ($r = -.15, p < .01$), recreation and self-care coping ($r = -.26, p < .01$), and physical activity ($r = -.16, p < .01$). These results may indicate that the time pressures to engage in recreation and physical activity, particularly with students who are caring for dependants may be problematic.

Relationships between General Health and Health-Promoting Behaviours

In terms of the relationships between general health variables and health-promoting behaviours, all general health variables were found to be positively correlated with health-promoting behaviours. Health value was found to have small to moderate effects with all health-promoting behaviours, with the largest effect noted for health responsibility ($r = .26, p < .01$), indicating that the more a person values their health, the more likely they are to look for ways to take responsibility for their health. Small to moderate effects were noted across all health-promoting behaviours with self-reported health. Therefore, the higher the self-reported health level, the more this appears to increase engagement in health-promoting behaviours.

The largest effects within general health variables with health-promoting behaviours were in relation to wellbeing. For example, interpersonal relations ($r = .53, p < .01$) and spiritual growth ($r = .60, p < .01$) were highly correlated with wellbeing. These findings are to be expected, given that health-promoting behaviours are often seen as an outcome variable related to wellbeing (Pender et al., 2011). Overall, wellbeing had small to large effects across the health-promoting behaviours variables.

Relationships between Health Risk and Health-Promoting Behaviours

With health-promoting behaviours, as expected, BMI was negatively correlated with physical activity ($r = -.20, p < .01$), spiritual growth ($r = -.15, p < .01$) and stress management ($r = -.13, p < .01$). BMI did not correlate with other health-risk variables, such as psychological distress, smoking and hazardous drinking. Psychological distress was negatively correlated with all health-promoting behaviours. Small to moderate effects were noted with health responsibility ($r = -.26, p < .01$) and physical activity ($r = -.23, p < .01$). Moderate effects were noted for nutrition, interpersonal relations, and a moderate to large effect for stress management ($r = -.44, p < .01$) and a large effect for spiritual growth ($r = -.54, p < .01$).

In terms of the relationship between smoking and health-promoting behaviours, smoking was found not to correlate well across all subscales. Only small effects were noted for physical activity ($r = -.10, p < .05$) and nutrition ($r = -.13, p < .01$). Hazardous drinking was only negatively correlated with some health-promoting behaviours such as health responsibility ($r = -.09, p < .05$), spiritual growth ($r = -.12, p < .01$), and stress management ($r = -.09, p < .05$).

Relationships between Psychological Variables and Health-Promoting Behaviours

With psychological variables, as expected, there were positive correlations found across all health-promoting behaviours, with general self-efficacy and positive affect, and negative correlations with negative affect and health-promoting behaviours. In terms of general self-efficacy, small to large effects were noted across all health-promoting behaviours, with a large effect size noted for spiritual growth ($r = .54, p < .01$).

Positive affect had positive and large effects with all health-promoting behaviours, with the largest effect noted in relation to stress management ($r = .68, p < .01$). Therefore, having a positive outlook may have a positive effect towards being able to effectively manage

stress levels. For negative affect, small to moderate negative effects were noted for health responsibility ($r = -.18, p < .01$), physical activity ($r = -.19, p < .01$), interpersonal relations ($r = -.27, p < .01$) and nutrition ($r = -.22, p < .01$). Moderate effects were found with the remaining health-promoting behaviours, such as spiritual growth and stress management.

Relationships between Health-Risk Behaviours and Student Stress, Strain and Coping

In terms of health-risk behaviours, BMI was positively correlated with academic stress ($r = .19, p < .01$), and lifestyle/financial stress ($r = .21, p < .01$). BMI was negatively correlated with all coping subscales and related only to physical strain ($r = -.10, p < .05$).

Smoking was intercorrelated with other health-risk variables; however, only small effects were noted. There were relationships between smoking and academic stress and lifestyle and financial stress, but not personal stress. No relationships were found between social support and smoking; however, there were relationships across the three academic strain subscales, with small effects noted. In terms of hazardous drinking, a positive relationship was found with academic stress ($r = .11, p < .01$), academic strain ($r = .11, p < .01$), and psychological/interpersonal strain ($r = .11, p < .01$), and a negative relationship with problem-focused coping ($r = -.11, p < .01$).

Psychological distress correlated well with all study variables, including other health-risk variables (BMI, smoking and hazardous drinking). As expected, psychological distress was positively correlated with all student stress and strain subscales, and negatively correlated with student coping subscales, with moderate to large effects noted.

Relationships between Health-Promoting Behaviours and Student Stress, Strain and Coping

Significant relationships were found between health-promoting behaviours and student stress, strain and coping. Health-promoting behaviours were negatively correlated with all subscales within student stress and strain. In terms of student stress, small to moderate

effects were noted between academic stress and lifestyle/financial stress, and moderate to large effects noted between personal stress and all health-promoting behaviours. Therefore, if stress increased, students' engagement in health-promoting behaviours decreased.

Health-promoting behaviours had generally small to large effects across all student coping measures. Large positive effects were noted between stress management and recreation and self-care coping ($r = .66, p < .01$), spiritual growth and problem-focused coping ($r = .52, p < .01$), and interpersonal relations and social support ($r = .68, p < .01$). The relationships between stress management and recreation and self-care coping ($r = .66, p < .01$) and interpersonal relations and social support ($r = .68, p < .01$) accounted for 82% of the total variance in student coping ($R^2 = .82$). These findings support the importance the role that stress management, spiritual growth and interpersonal relations may play in enhancing coping.

In relation to health-promoting behaviours and student strain, small to moderate effects were noted in both academic and physical strain, however moderate to large effects were noted with psychological/interpersonal strain. Therefore, in buffering the effects of strain in relationships experienced by students, health-promoting behaviours may be an important factor.

Relationships between Psychological Variables and Student Stress, Strain and Coping

As expected, general self-efficacy and positive affect were negatively correlated with student stress and strain, and positively correlated with student coping. Of note, were the larger effects for general self-efficacy and personal stress ($r = -.53, p < .01$), and problem-focused coping ($r = -.55, p < .01$) and a moderate to large effect for psychological/interpersonal strain ($r = -.47, p < .01$). General self-efficacy for all other student stress, strain and coping had small to moderate effects.

In terms of positive affect, the largest effects were noted for personal stress ($r = -.58$, $p < .01$) and psychological/interpersonal strain ($r = -.54$, $p < .01$). Negative affect was negatively correlated across all coping subscales and positively correlated with student stress and strain. Small to large effects were noted across all student stress, strain and coping subscales.

Relationships between Student Stress, Strain and Coping and Academic Outcomes

Of the student stress subscales, academic stress ($r = -.06$, $p < .05$), and lifestyle and financial stress ($r = -.13$, $p < .01$) were significant in terms of a lower GPA, however only small effects were noted. With respect to coping, problem-focused coping ($r = .21$, $p < .01$) and social support ($r = .11$, $p < .05$) were found to have some small positive effects with GPA. Of all of the student stress, strain and coping variables, academic strain showed a moderately strong negative relationship with GPA ($r = -.40$, $p < .01$), accounting for 63% of the variance ($R^2 = .63$).

In examining the relationship between student stress, strain and coping and accessing USQ support, the only variables which were positively correlated were lifestyle/financial stress ($r = .11$, $p < .01$), recreation and self-care coping ($r = .10$, $p < .01$), and psychological/interpersonal strain ($r = .09$, $p < .05$), however only small effects were noted for each of these variables.

Finally, with respect to intention to leave, as anticipated, student stress was positively correlated across all stress subscales. Academic stress had a moderate positive effect with intention to leave ($r = .32$, $p < .01$). Student coping was negatively correlated with intention to leave, however only small effects were noted across subscales. However, small to moderate effects were noted with intention to leave and student strain, with academic strain having the largest relationship with intention to leave ($r = .30$, $p < .01$). These findings indicate that in terms of intention to leave, academic stress and strain appeared to be more

significant, but recreation and self-care coping had a small but significant effect on reducing intention to leave.

Relationships between Health-Risk Behaviours and Academic Outcomes

There were no significant relationships between GPA and BMI, although initially a relationship did appear between BMI and intention to leave ($r_{pb} = .11, p < .01$). On further investigation using a partial correlation controlling for age, no significant relationship was found between BMI and intention to leave. Increasing psychological distress was related to lower GPA ($r = -.19, p < .01$) and higher intention to leave ($r_{pb} = .29, p < .01$).

Smoking did not correlate well across the academic outcomes, however a small but significant relationship was found between smoking and GPA ($r = -.10, p < .05$). Hazardous drinking was not significantly correlated with any academic outcome variables. The findings indicated that of the health-risk behaviours, psychological distress was the most significant variable related to academic outcomes.

Relationships between Health-Promoting Behaviours and Academic Outcomes

In terms of examining whether relationships existed between health-promoting behaviours, such as interpersonal relations, nutrition, health responsibility, physical activity, spiritual growth and stress management and academic outcomes, namely, intention to leave, GPA, and accessing USQ supports, the following relationships were found. In terms of nutrition, there was a positive correlation with GPA ($r = .18, p < .01$), and spiritual growth ($r = .10, p < .05$), with small effects noted. However, when age was controlled for (using partial correlations), no statistically significant relationships were found with nutrition and spiritual growth.

With respect to health-promoting behaviours and accessing USQ support, there were relationships between physical activity and accessing USQ support ($r = .07, p < .01$) and stress management and accessing USQ support ($r = .14, p < .01$). Again, when age was

controlled for, no significant relationships were found for any of the health-promoting behaviour subscales. In addition, negative relationships were found between health-promoting behaviours, except for health responsibility and intention to leave, although a small effect size was noted. Despite this, when age was controlled for, there were no significant relationships found between health-promoting behaviours and intention to leave.

Summary of Study Relationships for Study 1

On examination of the relationships between all study variables, the following observations were made. Firstly, socio-demographic variables such as hours in paid employment, hours caring for dependants and age were not significant variables across all key study variables, and only small effects were noted. Age was not significantly correlated with student stress, strain and coping, or academic outcomes.

Secondly, general health variables, as expected, had positive relationships with all health-promoting behaviours. Of the general health variables, wellbeing was significantly related more closely to engagement in health-promoting behaviours. In addition, psychological variables, such as general self-efficacy and positive affect, had positive and significant correlations with health-promoting behaviours.

Thirdly, of the health-risk behaviours, psychological distress was the variable most related to a decreased engagement in health-promoting behaviours, with the remaining variables of BMI, smoking and hazardous drinking being poorly correlated with health-promoting behaviours. BMI itself did not correlate well with other health-risk behaviour variables, indicating poor interrelationships with the variable grouping. Health-risk behaviours did not correlate well across the student stress, strain and coping scales, or with academic outcomes. Only some small effects were noted, and in relation to academic outcomes, some of these effects were no longer significant when age was controlled for. Despite these findings, health-promoting behaviours did correlate well across student stress,

strain and coping variables, despite their relationship with academic outcomes being non-significant when controlling for age.

Research aim 2. The second aim of Study 1 was to examine the differences between on-campus and distance students. The research questions were firstly related to whether differences existed between on-campus and distance students, and secondly whether demographic variables and mode of study had an effect on study variables.

The analysis is presented in three parts: (a) differences in correlations for on-campus and distance students, (b) means and standard deviations of key study variables for on-campus and distance students, and, (c) MANOVAs used to examine the effects of demographic variables, such as gender across groups of students.

The intention of firstly examining the relationships between on-campus and distance students was to identify those variables which may not be important to take forward to further analysis in the development of a path model, based on key interrelationships between variables. Table 9 presents a summary of correlations between age, general health variables (health value, wellbeing and self-reported health) and health-promoting behaviours (interpersonal relations, nutrition, health responsibility, physical activity, spiritual growth, and stress management).

Table 9

Correlations between Age, General Health Variables and Health-Promoting Behaviours of On-Campus and Distance Students

Variables	1	2	3	4	5	6	7	8	9	10
1. Age	1.00	.09	.02	.01	-.02	.15**	.23**	-.03	.11**	.12**
2. Health value	.12*	1.00	.15**	.14**	.15**	.23**	.25**	.19**	.20**	.22**
3. Self-reported health	-.08	-.01	1.00	.38**	.22**	.30**	.12*	.36**	.31**	.35**
4. Wellbeing	-.14*	.05	.44**	1.00	.51**	.29**	.22**	.27**	.57**	.40**
5. Interpersonal relations	-.11	-.12*	.28**	.57**	1.00	.40**	.51**	.36**	.70**	.53**
6. Nutrition	.09	.20**	.34**	.46**	.48**	1.00	.47**	.51**	.45**	.43**
7. Health responsibility	.20**	.27**	.06	.23**	.49**	.53**	1.00	.44**	.49**	.55**
8. Physical activity	-.08	.24**	.27**	.32**	.37**	.58**	.41**	1.00	.40**	.57**
9. Spiritual growth	.02	.17**	.36**	.65**	.71**	.58**	.52**	.44**	1.00	.61**
10. Stress management	.02	.20**	.31**	.50**	.47**	.60**	.52**	.55**	.65**	1.00

Note. * $p < .05$, ** $p < .01$. Bottom diagonal = On-campus students ($n = 270$), Top diagonal = **Distance students** ($n = 496$). Age (variable 1), general health variables (variables 2-4), and health-promoting behaviours (variables 5-10).

Relationships between General Health and Health-Promoting Behaviours

The findings from Table 9 indicate that for on-campus students, age was significantly correlated only with health value ($r = .12, p < .05$) and wellbeing ($r = .14, p < .05$) but with small effect sizes. The only significant relationship between age and health-promoting behaviours was with health responsibility ($r = .20, p < .01$), and again a small effect size was noted. For distance students, age was not significantly correlated with any general health variables, and only positively correlated with nutrition ($r = .15, p < .01$), health responsibility ($r = .23, p < .01$), spiritual growth ($r = .11, p < .01$) and stress management ($r = .12, p < .01$). The findings appear to indicate that for distance students, age was positively related to health-promoting behaviours, however this was not the case for all behaviours, and only small effect sizes were noted.

With respect to general health variables and their relationship with health-promoting behaviours, Table 6 indicated that similar small positive correlations were noted between health value and all health-promoting behaviour variables, regardless of study mode. The exception to this was that interpersonal relations was found to be negatively related to health value for on-campus students ($r = -.12, p < .05$). Small to moderate effects were noted for both on-campus and distance students with self-reported health, except for health responsibility, which was found to be non-significant for on-campus students. Small to large correlations were found between wellbeing and health-promoting behaviours for on-campus and distance students.

Summary of Relationships between General Health and Health-Promoting Behaviours

The findings indicate that the general health variables (health value, self-reported health, and wellbeing) are related to health-promoting behaviours. Small to moderate effects were noted similarly for on-campus and distance students in terms of health value and self-

reported health, with health-promoting behaviours and wellbeing having small to large effects.

In examining age as a variable with general health variables, and health-promoting behaviours, the findings indicated that relationships were not similar between on-campus and distance students, and it correlated poorly with health-promoting behaviours. As such, age should not be included in further analyses in Study 1 when examining the relationships between on-campus and distance students.

The next correlation matrix, Table 10, presents the findings in relation to the relationship between age, health-risk behaviours (BMI, psychological distress, smoking, and hazardous drinking) and health-promoting behaviours (interpersonal relations, nutrition, health responsibility, physical activity, spiritual growth and stress management).

Table 10

Correlations between Age, Health Risk and Health-Promoting Behaviours of On-Campus and Distance Students

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Age	1.00	.09	-.21**	-.03	-.19**	-.02	.15**	.23**	-.03	.11**	.12**
2. Body mass index	.30**	1.00	-.00	.02	-.09*	-.14**	-.15**	-.01	-.25**	-.13**	-.10*
3. Psychological distress	-.08	.20*	1.00	.13**	.08	-.35**	-.28**	-.28**	-.23**	-.50**	-.42**
4. Smoking	.19**	.12	.16**	1.00	.27**	-.02	-.08	-.02	-.04	-.07	-.04
5. Hazardous drinking	-.09	.03	.11	.26**	1.00	-.10*	-.03	-.09*	.06	-.12**	-.08
6. Interpersonal relations	-.11	-.13*	-.38**	-.10	-.03	1.00	.40**	.51**	.36**	.70**	.53**
7. Nutrition	.09	-.06	-.37**	-.20**	-.07	.48**	1.00	.47**	.51**	.45**	.43**
8. Health responsibility	.20**	-.02	-.24**	.03	-.08	.49**	.53**	1.00	.44**	.49**	.55**
9. Physical activity	-.08	-.10	-.24**	-.18*	-.04	.37**	.58**	.41**	1.00	.40**	.57**
10. Spiritual growth	.02	-.20**	-.59**	-.06	-.10	.71**	.58**	.52**	.44**	1.00	.61**
11. Stress management	.02	-.18**	-.48**	-.11	-.11	.47**	.60**	.52**	.55**	.65**	1.00

Note. * $p < .05$, ** $p < .01$. Bottom diagonal = On-campus students ($n = 270$), Top diagonal = **Distance students** ($n = 496$). Age (variable 1), health-risk variables (variables 2-5), and health-promoting behaviours (variables 6-11).

Relationships between Health Risk and Health-Promoting Behaviours

In Table 10, age was only positively correlated with health-risk behaviours such as BMI ($r = .30, p < .01$) for on-campus students, with a moderate effect noted, and interestingly smoking ($r = .19, p < .01$), with only a small effect noted. With distance students, age was found to be negatively correlated with psychological distress ($r = -.21, p < .01$), and smoking ($r = -.19, p < .01$), indicating that age may have a slightly more positive effect for distance students in relation to these health-risk behaviours. In terms of health-promoting behaviours, only age was found to relate positively with health responsibility ($r = .20, p < .01$) for on-campus students. Age was positively correlated with all health-promoting behaviours except for interpersonal relations and spiritual growth, for distance students.

Within health-risk behaviours, all variables were poorly interrelated for both on-campus students and distance students. In relation to BMI and health-promoting behaviours and on-campus students, BMI was not statistically significant across all health-promoting behaviours. Negative relationships were found only between BMI and interpersonal relations ($r = -.13, p < .05$), spiritual growth ($r = -.20, p < .01$) and stress management ($r = -.18, p < .05$) but effects were small.

For distance students, increasing BMI was negatively correlated with health-promoting behaviours, except for health responsibility; however, of those that were significant the effects were small. For psychological distress, similar effects were noted across all health-promoting behaviour variables for both on-campus and distance students, with small to large effects noted. For on-campus students, smoking was negatively correlated with nutrition ($r = -.20, p < .01$), and physical activity ($r = -.18, p < .05$). Smoking for distance students was not related to health-promoting behaviours.

Finally, hazardous drinking was not significantly correlated with any health-promoting behaviour for on-campus students, and only negatively correlated with interpersonal relations, health responsibility and spiritual growth for distance students, however only small effects were noted.

Summary of Relationships between Health Risk and Health-Promoting Behaviours

These findings indicate that age was not significantly related to all health-risk behaviours. In addition, health-risk behaviours were poorly correlated with each other, which were previously highlighted from the correlations of the whole sample. As expected, the health-promoting behaviour variables were correlated highly with each other.

Psychological distress remained as an important variable for health-promoting behaviours, and similar findings were evident for both on-campus and distance students. Of the remaining health-risk behaviours (smoking, hazardous drinking and BMI), these related poorly or not at all with most health-promoting behaviours. However, as some effect sizes were noted across some variables, it was decided that these variables should remain when examining the differences between on-campus and distance students, but should not be included in developing a path model.

The next correlation matrix, presented as Table 11, concerns the relationships between age, psychological variables, such as general self-efficacy, positive and negative affect, and health-promoting behaviours (interpersonal relations, nutrition, physical activity, health responsibility, spiritual growth and stress management), for on-campus and distance students.

Table 11

Correlations between Age, Psychological Variables and Health-Promoting Behaviours for On-Campus and Distance Students

Variables	1	2	3	4	5	6	7	8	9	10
1. Age	1.00	-.02	.15**	.23**	-.03	.11**	.12**	.21**	.07	-.23**
2. Interpersonal relations	-.11	1.00	.40**	.51**	.36**	.70**	.53**	.36**	.52**	-.28**
3. Nutrition	.09	.48**	1.00	.47**	.51**	.45**	.43**	.32**	.35**	-.20**
4. Health responsibility	.20**	.49**	.53**	1.00	.44**	.49**	.55**	.29**	.39**	-.20**
5. Physical activity	-.08	.37**	.58**	.41**	1.00	.40**	.57**	.30**	.43**	-.18**
6. Spiritual growth	.02	.71**	.58**	.52**	.44**	1.00	.61**	.54**	.68**	-.36**
7. Stress management	.02	.47**	.60**	.52**	.55**	.65**	1.00	.37**	.54**	-.34**
8. General self-efficacy	.09	.36**	.29**	.22**	.20**	.54**	.38**	1.00	.54**	-.36**
9. Positive affect	.06	.52**	.44**	.41**	.49**	.67**	.52**	.47**	1.00	-.31**
10. Negative affect	-.06	-.27**	-.23**	-.15*	-.23**	-.39**	-.38**	-.42**	-.34**	1.00

Note. * $p < .05$, ** $p < .01$. Bottom diagonal = On-campus students ($n = 270$), Top diagonal = **Distance students** ($n = 496$). Age (variable 1), health-promoting behaviours (variables 2-7), and psychological variables (variables 8-10).

Relationships between Psychological Variables and Health-Promoting Behaviours

With age and psychological variables (general self-efficacy, positive affect and negative affect), there were no significant relationships for on-campus students. General self-efficacy was positively correlated with increasing age for distance students, and negative affect negatively correlated with age, with small effects noted.

As expected, positive correlations were found across health-promoting behaviours and general self-efficacy, with small to large effects noted for both on-campus students and distance students. Medium to large effects were noted for positive affect, similarly for on-campus and distance students. Small to moderate negative relationships were found between negative affect and health-promoting behaviours, with similar effect sizes noted for on-campus and distance students.

Summary of Relationships between Psychological Variables and Health-Promoting Behaviours

The findings support previous research which has found strong positive relationships between psychological variables, such as self-efficacy and positive affect, and health-promoting behaviours (Barefoot, 2004; Pender et al., 2011). It appeared in Table 8 that psychological variables were related similarly in relation to health-promoting behaviours for both on-campus and distance students.

The next correlation matrix, presented as Table 12, represents the relationships between age, health-risk behaviours (BMI, psychological distress, smoking, and hazardous drinking) and student stress, strain and coping for on-campus and distance students.

Table 12

Correlations between Age, Health-Risk Behaviours, Student Stress, Strain and Coping for On-Campus and Distance Students

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	1.00	.24**	-.21**	-.03	-.19**	-.19**	-.21**	-.15**	.04	.15**	-.02	-.32**	-.11*	-.20**
2. Body mass index	.30**	1.00	-.00	.02	-.09*	-.08	.21**	.16**	-.10*	-.07	-.04	-.04	.07	.01
3. Psychological distress	-.08	.20*	1.00	.13**	.08	.41**	.45**	.49**	-.40**	-.35**	-.33**	.47**	.59**	.73**
4. Smoking	.19**	.12	.16**	1.00	.27**	.08	.09*	.02	-.08	-.07	-.03	.07	.11*	.13**
5. Hazardous drinking	-.09	.03	.11	.26**	1.00	.12*	.02	.03	.07	-.09*	-.02	.11*	.05	.10*
6. Academic stress	-.14*	.04	.44**	.11	.08	1.00	.40**	.30**	-.36**	-.29**	-.17**	.55**	.52**	.52**
7. Lifestyle/financial stress	.06	.22**	.44**	.21**	.10	.46**	1.00	.36**	-.32**	-.18**	-.16**	.36**	.45**	.50**
8. Personal stress	-.05	.29**	.49*	-.01	.02	.32**	.38**	1.00	-.39**	-.44**	-.45**	.39**	.42**	.55**
9. Recreation and self-care coping	-.20**	-.21**	-.38**	-.15*	-.01	-.30**	-.36**	-.40**	1.00	.30**	.35**	-.27**	-.54**	-.50**
10. Problem-focused coping	.12*	-.12	-.31**	-.09	-.13*	-.36**	-.18**	-.48**	.32**	1.00	.31**	-.50**	-.31**	-.39**
11. Social support	-.09	-.16*	-.38**	-.05	.10	-.13*	-.15*	-.52**	.36**	.43**	1.00	-.28**	-.27**	-.37**
12. Academic strain	-.27**	.12*	.44**	.07	.10	.52**	.32**	.35**	-.22**	-.46**	-.27**	1.00	.46**	.53**
13. Physical strain	-.02	.15*	.56**	.12*	-.01	.42**	.41**	.30**	-.42**	-.20**	-.25**	.41**	1.00	.70**
14. Psychological/interpersonal strain	-.01	.13*	.78**	.20**	.12*	.53**	.50**	.52**	-.49**	-.40**	-.46**	.52**	.65**	1.00

Note. * $p < .05$, ** $p < .01$. Bottom diagonal = On-campus students (n = 270), Top diagonal = **Distance students** (n = 496). Age (variable 1), health-risk behaviours = (variables 2-5), student stress (variables 6-8), student coping (variables 9-11), and student strain (variables 12-14).

Relationships between Health-Risk Behaviours and Student Stress, Strain and Coping

As already discussed in relation to Table 8, age did not correlate with health-risk behaviours. In terms of age for both on-campus and distance students, Table 12 indicated that age was moderately related to increases in BMI in both on-campus students and distance students, with small to moderate effects. Age was positively correlated with smoking for on-campus students, but was not significant for distance students. For distance students, age was negatively related to psychological distress, although with only small effect. Also for distance students, age was negatively correlated with hazardous drinking.

In examining the relationship between age and student stress, strain and coping for on-campus and distance students, the following was found. First, in terms of student stress, age was only negatively correlated with academic stress ($r = -.14, p < .05$) for on-campus students, whereas for distance students, increasing age was negatively correlated with all stress variables, although only small effects were noted. Secondly, with student coping, increasing age was negatively correlated with recreation and self-care coping ($r = -.20, p < .01$) for on-campus students. Problem-focused coping was similar for both on-campus ($r = .12, p < .05$) and distance students ($r = .15, p < .01$) with respect to age, with positive relationships noted. This means that regardless of study mode, problem-focused coping increased with students' age, although these findings should be considered with caution, due to such small effect sizes. Thirdly, increases in age were only related negatively with academic strain for on-campus students ($r = -.27, p < .01$), whereas small to moderate effects were noted for distance students.

In examining the relationships between health-risk behaviours and student stress, strain and coping, the following results were found. BMI was positively correlated with lifestyle/financial stress and personal stress for both on-campus and distance students. BMI was negatively correlated with social support for on-campus students, and recreation and self-

care coping for on-campus and distance students. In terms of student strain, BMI was found to relate to all variables for on-campus students, but only small effects were noted, and BMI was not significant with distance students for student strain.

Psychological distress was moderately and highly correlated with all student stress, strain and coping for both on-campus and distance students, with similar effects noted. For Smoking, only some significant relationships were found across student stress, strain and coping for both on-campus and distance students, with only small effects noted with those that were significant. For example, smoking was positively correlated with lifestyle/financial stress ($r = .21, p < .01$), physical strain ($r = .12, p < .05$) and with psychological/interpersonal strain ($r = .20, p < .01$), but negatively correlated with recreation and self-care coping ($r = -.15, p < .05$), for on-campus students. For distance students, smoking was positively correlated with lifestyle/financial stress ($r = .09, p < .05$), physical strain ($r = .11, p < .05$) and psychological/interpersonal strain ($r = .13, p < .01$). This was similar to the relationship between hazardous drinking and student stress, strain and coping.

Summary of Relationships between Health-Risk Behaviours and Student Stress, Strain and Coping

The findings indicated that of the health-risk behaviours, BMI had some relationships with some variables for student stress, strain and coping; although these were found to only have small effects. As Table 12 indicated, health-risk behaviours correlated poorly with each other. Psychological distress was positively correlated with student stress and strain and negatively correlated with student coping, appearing similar with on-campus and distance students.

In summary, a number of the health-risk behaviours including smoking, hazardous drinking and BMI did not have strong associations with the key variables of stress, strain and coping. Given that there were some correlations with small effect sizes ($r > .01$); it was decided to retain these variables in the MANOVA for the comparisons between on-campus and distance students. Nevertheless, the small correlations meant that they were unsuitable to be used in path modelling. The next relationships to be examined for on-campus and distance students were between health-promoting behaviours and student stress, strain and coping (see Table 13).

Table 13

Correlations between Health-Promoting Behaviours and Student Stress, Strain and Coping for On-Campus and Distance Students

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Age	1.00	-.02	.15**	.23**	-.03	.11**	.12**	-.19**	-.21**	-.15**	.04	.15**	-.02	-.32**	-.11*	-.19**
2. Interpersonal relations	-.11	1.00	.40**	.51**	.36**	.70**	.53**	-.18**	-.14**	-.55**	.32**	.37**	.65**	-.27**	-.23**	-.41**
3. Nutrition	.09	.48**	1.00	.47**	.51**	.45**	.43**	-.18**	-.22**	-.29**	.28**	.41**	.28**	-.33**	-.25**	-.32**
4. Health responsibility	.20**	.49**	.53**	1.00	.44**	.49**	.55**	-.18**	-.07	-.36**	.31**	.35**	.33**	-.31**	-.25**	-.30**
5. Physical activity	-.08	.37**	.58**	.41**	1.00	.40**	.57**	-.14**	-.24**	-.33**	.42**	.30**	.23**	-.19**	-.29**	-.34**
6. Spiritual growth	.02	.71**	.58**	.52**	.44**	1.00	.61**	-.22**	-.22**	-.62**	.36**	.47**	.44**	-.31**	-.36**	-.51**
7. Stress management	.02	.47**	.60**	.52**	.55**	.65**	1.00	-.32**	-.25**	-.46**	.66**	.39**	.37**	-.32**	-.49**	-.50**
8. Academic stress	-.14*	-.13**	-.32**	-.20**	-.20**	-.32**	-.37**	1.00	.40**	.30**	-.36**	-.29**	-.17**	.55**	.52**	.52**
9. Lifestyle/financial stress	.06	-.15**	-.28**	-.11	-.21**	-.35**	-.39**	.46**	1.00	.36**	-.32**	-.18**	-.16**	.36**	.45**	.50**
10. Personal stress	-.05	-.56**	-.38**	-.33**	-.29**	-.68**	-.46**	.32**	.38**	1.00	-.39**	-.44**	-.45**	.39**	.42**	.55**
11. Recreation and self-care coping	-.20**	.34**	.33**	.17**	.37**	.43**	.66**	-.30**	-.36**	-.40**	1.00	.30**	.35**	-.27**	-.54**	-.50**
12. Problem-focused coping	.12*	.43**	.45**	.37**	.37**	.59**	.44**	-.36**	-.18**	-.48**	.32**	1.00	.31**	-.50**	-.31**	-.39**
13. Social support	-.09	.73**	.40**	.33**	.22**	.57**	.38**	-.13*	-.15*	-.52**	.36**	.43**	1.00	-.28**	-.27**	-.37**
14. Academic strain	-.27**	-.31**	-.38**	-.38**	-.19**	-.48**	-.38**	.52**	.32**	.35**	-.22**	-.46**	-.27**	1.00	.46**	.53**
15. Physical strain	-.02	-.19**	-.34**	-.07	-.15**	-.32**	-.44**	.42**	.41**	.30**	-.42**	-.20**	-.25**	.41**	1.00	.70**
16. Psychological/interpersonal strain	-.01	-.45**	-.46**	-.25**	-.31**	-.57**	-.53**	.53**	.50**	.52**	-.49**	-.40**	-.46**	.52**	.65**	1.00

Note. * $p < .05$, ** $p < .01$. Bottom diagonal = On-campus students ($n = 270$), Top diagonal = **Distance students** ($n = 496$). Age (variable 1), health-promoting behaviours = (variables 2-7), student stress (variables 8-10), student coping (variables 11-13), and student strain (variables 14-16).

Relationships between Health-Promoting Behaviours and Student Stress, Strain and Coping

Table 13 indicated that health-promoting behaviours were positively correlated with student coping, and negatively correlated with student stress and strain. Small to large effects were noted across health-promoting behaviours in relation to student stress, strain and coping. There was no relationship between health responsibility and lifestyle and financial stress for both on-campus and distance students. Health responsibility was negatively correlated with physical strain for distance students. Of note were the large positive relationships between interpersonal relations with social support ($r = .73, p < .01$) for on-campus students, and ($r = .65, p < .01$) for distance students. In addition, spiritual growth was related to decreases in personal stress for on-campus ($r = -.68, p < .01$), and distance students ($r = .62, p < .01$). Spiritual growth also had a negative relationship with psychological/interpersonal strain, with large effects noted for both on-campus and distance students.

Summary of Relationships between Health-Promoting Behaviours and Student Stress, Strain and Coping

In examining the correlations for both on-campus and distance students, it appears that in general, health-promoting behaviours had a positive relationship with increasing student coping, and that higher engagement in health-promoting behaviours decreased student stress and student strain. Similar effects were noted between on-campus and distance students. Most health-promoting behaviours subscales had small to large effects with student stress, strain and coping, indicating that these behaviours are important in students' experiences. The next correlation matrix, presented as Table 14, presents the relationships between age, psychological variables (general self-efficacy, positive affect and negative affect) and student stress, strain and coping for on-campus and distance students.

Table 14

Correlations between Age, Psychological Variables and Student Stress, Strain and Coping for On-Campus and Distance Students

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	1.00	-.19**	-.21**	-.15**	.04	.15**	-.02	-.32**	-.11*	-.19**	.21**	.07	-.23**
2. Academic stress	-.14*	1.00	.40**	.29**	-.36**	-.29**	-.17**	.54**	.52**	.52**	-.28**	-.27**	.31**
3. Lifestyle/financial stress	.06	.46**	1.00	.36**	-.32**	-.18**	-.16**	.36**	.45**	.50**	-.28**	-.22**	.38**
4. Personal stress	-.05	.32**	.38**	1.00	-.39**	-.44**	-.45**	.39**	.41**	.55**	-.53**	-.60**	.40**
5. Recreation and self-care coping	-.20**	-.30**	-.36**	-.40**	1.00	.30**	.35**	-.27**	-.54**	-.50**	.26**	.43**	-.31**
6. Problem-focused coping	.12*	-.36**	-.18**	-.48**	.32**	1.00	.31**	-.50	-.31**	-.39**	.58**	.52**	-.26**
7. Social support	-.09	-.13*	-.15*	-.52**	.36**	.43**	1.00	-.28**	-.27**	-.37**	.26**	.41**	-.25**
8. Academic strain	-.27**	.52**	.32**	.35**	-.22**	-.46**	-.27**	1.00	.46**	.53**	-.38**	-.35**	.37**
9. Physical strain	-.02	.42**	.41**	.30**	-.42**	-.20**	-.25**	.41**	1.00	.70**	-.34**	-.42**	.48**
10. Psychological/interpersonal strain	-.01	.53**	.50**	.52**	-.49**	-.40**	-.46**	.52**	.65**	1.00	-.48**	-.56**	.67**
11. General self-efficacy	.09	-.31**	-.33**	-.53**	.30**	.50**	.28**	-.34**	-.28**	-.45**	1.00	.54**	-.36**
12. Positive affect	.06	-.21**	-.26**	-.54**	.35**	.44**	.39**	-.41**	-.24**	-.51**	.47**	1.00	-.31**
13. Negative affect	-.06	.44**	.39**	.44**	-.34**	-.27**	-.28**	.38**	.46**	.73**	-.42**	-.34**	1.00

Note. * $p < .05$, ** $p < .01$. Bottom diagonal = On-campus students ($n = 270$), Top diagonal = **Distance students** ($n = 496$). Age (variable 1), student stress (variables 2-4), student coping = (variables 5-7), student strain (variables 8-10), and psychological variables (variables 11-13).

Relationships between Psychological Variables and Student Stress, Strain and Coping

The relationships between age and psychological variables and student stress, strain and coping have already been discussed. As previously discussed in this chapter, general self-efficacy and positive affect were found to be negatively correlated with student stress and strain, and positively correlated with student coping (see Table 8 results). In Table 14, the findings indicated that similarly, general self-efficacy and positive affect were related across student stress, strain and coping variables, with moderate to large effects noted for both on-campus and distance students. Finally, negative affect was similar for on-campus and distance students, with positive relationships with student stress and strain, and negative relationships with student coping.

Summary of Relationships between Psychological Variables and Student Stress, Strain and Coping

Psychological variables such as general self-efficacy, positive and negative affect and their relationship with student stress, strain and coping, appear very similar, between on-campus and distance students. The direction of the relationships between study variables were identical and similar reported strength of relationships was also noted. The findings indicate that both general self-efficacy and positive affect have a strong relationship with student coping for on-campus and distance students. Furthermore, increases in general self-efficacy and positive affect have an inverse relationship with student stress and strain. The next table, Table 15, represents the relationships between age, student stress, strain and coping and academic outcomes, such as GPA, accessing USQ support and intention to leave.

Table 15

Correlations between Age, Student Stress, Strain and Coping and Academic Outcomes for On-Campus and Distance Students

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	1.00	-.19**	-.21**	-.15**	.04	.15**	-.02	-.32**	-.11	-.19**	.23**	-.08	-.01
2. Academic stress	-.14*	1.00	.40**	.29**	-.36**	-.29**	-.17**	.54**	.52**	.52**	-.06	.04	.31**
3. Lifestyle/financial stress	.06	.46**	1.00	.36**	-.32**	-.18**	-.16**	.36**	.45**	.50**	-.15**	.11*	.20**
4. Personal stress	-.05	.32**	.37**	1.00	-.39**	-.44**	-.45**	.39**	.41**	.55**	-.08	.02	.20**
5. Recreation and self-care coping	-.20**	-.30**	-.36**	-.40**	1.00	.30**	.34**	-.27**	-.53**	-.49**	-.08	.14**	-.21**
6. Problem-focused coping	.12*	-.36**	-.18**	-.48**	.32**	1.00	.31**	-.50**	-.31**	-.39**	.20**	-.03	-.17**
7. Social support	-.09	-.13**	-.15**	-.52**	.36**	.43**	1.00	-.28**	-.27**	-.37**	.09	-.01	-.13**
8. Academic strain	-.26**	.52**	.32**	.35**	-.21**	-.46**	-.27**	1.00	.46**	.53**	-.40**	.05	.28**
9. Physical strain	.01	.42**	.41**	.30**	-.42**	-.20**	-.25**	.41**	1.00	.70**	-.07	-.01	.26**
10. Psychological /interpersonal strain	-.01	.53**	.49**	.52**	-.49**	-.40**	-.46**	.52**	.65**	1.00	-.06	.06	.23**
11. GPA	.19**	-.08	-.09	-.01	.03	.22**	.14*	-.42**	-.13*	-.11	1.00	-.07	-.02
12. Accessing USQ support	.09	-.06	.05	.01	.02	.05	-.11	-.02	.11*	.12	-.10	1.00	-.01
13. Intention to leave	-.01	.33**	.22**	.16**	-.27**	-.15**	-.10	.31**	.33**	.34**	-.15*	.03	1.00

Note. * $p < .05$, ** $p < .01$. Bottom diagonal = On-campus students ($n = 270$), Top diagonal = **Distance students** ($n = 496$). Age (variable 1), student stress (variables 2-4), student coping (variables 5-7), student strain (variables 8-10), and academic outcomes (variables 11-13). GPA On-campus students ($n = 242$), Distance students ($n = 399$).

Relationships between Student Stress, Strain and Coping and Academic Outcomes

For on-campus students, student stress was not correlated with GPA, whereas for distance students, lifestyle/financial stress was negatively correlated with GPA ($r = .15$, $p < .01$). This means that lifestyle/financial stress related to a lower GPA, although the effect size was small. Problem-focused coping was positively related to GPA for both on-campus and distance students, with similar effects noted. Social support was also positively correlated with GPA, but only for on-campus students ($r = .14$, $p < .05$). Most noteworthy from Table 15 was the negative relationship between academic strain and GPA, which had medium effects, similarly, for on-campus and distance students. This meant that as students' academic strain increased, this negatively impacted on their GPA. Physical strain was negatively correlated with GPA for on-campus students ($r = -.13$, $p < .05$), but not distance students.

Some differences appeared for on-campus and distance students in terms of accessing USQ support. For on-campus students, physical strain was positively correlated with accessing USQ support ($r = .11$, $p < .05$), whereas for distance students, lifestyle/financial stress ($r = .11$, $p < .05$) and recreation and self-care coping ($r = .14$, $p < .01$), were correlated with accessing USQ support.

As anticipated, student stress and student strain were positively related to intention to leave, and student coping was negatively related to intention to leave. Therefore increases in stress and strain increase students' intention to leave. In terms of the interrelationships between student stress, strain and coping, the variables correlated well with each other.

Summary of Relationships between Student Stress, Strain and Coping and Academic Outcomes

Some relationships were found between student stress, strain and coping and GPA, and to a lesser extent in terms of accessing USQ support. Most noteworthy was the relationship between student stress, strain and coping and intention to leave. Small to moderate effects across most of the variables for both on-campus and distance students, were noted. Table 16 presents the correlations for the relationships between age, health-risk behaviours (BMI, psychological distress, smoking and hazardous drinking) and academic outcomes (GPA, accessing USQ Support and intention to leave).

Table 16

Correlations between Age, Health-Risk Behaviours and Academic Outcomes for On-Campus and Distance Students

Variables	1	2	3	4	5	6	7	8
1. Age	1.00	.24**	-.21**	-.03	-.19**	.23**	-.08	-.01
2. Body mass index	.30**	1.00	-.00	.02	-.09*	-.06	-.06	.07
3. Psychological distress	-.08	.20*	1.00	.13**	.08	-.18**	.14*	.23**
4. Smoking	.19**	.12	.16**	1.00	.27**	-.08	-.02	N/A
5. Hazardous drinking	-.09	.03	.11	.26**	1.00	-.08	-.09	-.03
6. Grade point average	.19**	-.05	-.20**	-.13*	-.08	1.00	-.07	-.03
7. Accessing USQ support	.09	.05	.12	.12**	-.04	-.10	1.00	-.02
8. Intention to leave	-.01	.20**	.34**	N/A	.16**	.03	.03	1.00

Note. * $p < .05$, ** $p < .01$. Bottom diagonal = On-campus students ($n = 270$), Top diagonal = **Distance students** ($n = 496$). Health-risk behaviour variables (Variables 2-5), and academic outcomes (Variables 6-8). GPA: On-campus students ($n = 242$), Distance students ($n = 399$).

Relationships between Health-Risk Behaviours and Academic Outcomes

First, age was examined in relation to academic outcomes for on-campus and distance students (Table 16). Age was found to be significantly related with only GPA, with similar effects noted for both on-campus and distance students. Age was not statistically significant for accessing USQ support or intention to leave. With respect to BMI and academic outcomes, BMI had a small effect on intention to leave for on-campus students, but not distance students. BMI was not correlated with any other academic outcomes. Psychological distress was found to be negatively correlated with GPA, despite the small effects noted. Positive relationships were found between psychological distress and intention to leave, similarly for on-campus and distance students, with small to medium effect sizes noted. An interesting finding was that psychological distress did not correlate with accessing USQ support for on-campus students; however, it was significant for distance students. It should be noted however, that the effect size noted for distance students was small ($r = .14, p < .05$).

There were some differences between on-campus and distance students in terms of smoking. Smoking was negatively correlated with GPA ($r = -.13, p < .05$), and positively correlated with accessing USQ support ($r = .12, p < .01$) for on-campus students, but not distance students. With respect to hazardous drinking and academic outcomes, the only significant relationship noted was between hazardous drinking and intention to leave for on-campus students ($r = .16, p < .01$).

Summary of Relationships between Health-Risk behaviours and Academic Outcomes

Overall, some relationships were found between health-risk behaviours and academic outcomes, however often with small effects. Small to medium effects were noted for psychological distress across all academic outcomes, except for accessing USQ support for on-campus students. The final relationship examined for on-campus and distance students was between health-promoting behaviours and academic outcomes (GPA, accessing USQ support, and intention to leave). The next correlation matrix, Table 17, presents the relationships between age, health-promoting behaviours and academic outcomes for on-campus and distance students.

Table 17

Correlations between Age, Health-Promoting Behaviours and Academic Outcomes for On-Campus and Distance Students

Variables	1	2	3	4	5	6	7	8	9	10
1. Age	1.00	-.02	.15**	.23**	-.03	.11**	.12**	-.23**	-.08	-.01
2. Interpersonal relations	-.11	1.00	.40**	.51**	.36**	.70**	.53**	.05	-.02	-.14**
3. Nutrition	.09	.48**	1.00	.47**	.51**	.45**	.43**	.17**	.00	-.08
4. Health responsibility	.20**	.49**	.53**	1.00	.44**	.49**	.55**	.09	.08	-.10*
5. Physical activity	-.08	.37**	.58**	.41**	1.00	.40**	.57**	-.01	-.06	-.10*
6. Spiritual growth	.02	.71**	.58**	.52**	.44**	1.00	.61**	.07	-.02	-.15**
7. Stress management	.02	.47**	.60**	.52**	.55**	.65**	1.00	-.02	.14*	-.20**
8. Grade point average	.19**	.05	.22**	.07	.04	.15*	.05	1.00	-.07	-.03
9. Accessing USQ support	.09	-.04	.03	.22**	.09	.04	.15*	-.10	1.00	-.02
10. Intention to leave	-.01	-.17**	-.25**	-.12	-.10	-.26**	-.24**	.03	.03	1.00

Note. * $p < .05$, ** $p < .01$. Bottom diagonal = On-campus students ($n = 270$), Top diagonal = **Distance students** ($n = 496$). Age (variable 1), health-promoting behaviours (variables 2-7), and academic outcomes (variables 11-13). GPA: On-campus students ($n = 242$), Distance students ($n = 399$).

Relationships between Health-Promoting Behaviours and Academic Outcomes

In terms of the relationship between health-promoting behaviours and academic outcomes in Table 17, nutrition was found to be positively correlated with GPA for both on-campus ($r = .22, p < .01$) and distance students ($r = .17, p < .01$). In addition, spiritual growth was positively correlated with GPA, but only for on-campus students ($r = .15, p < .05$). It should be noted however, that when age was accounted for, these relationships were no longer significant.

There was only one difference between on-campus and distance students in relation to health-promoting behaviours and accessing USQ support. For on-campus students, health responsibility was positively correlated with accessing USQ support ($r = .22, p < .01$). However stress management was positively correlated with accessing USQ support similarly for on-campus ($r = .15, p < .05$) and distance students ($r = .14, p < .05$). Despite a small effect size noted with stress management, this may indicate that students regardless of study mode, will positively access student support services to help manage their stress, and as such, this may be an important behaviour to promote to support their coping.

In terms of intention to leave, health-promoting behaviours such as interpersonal relations, spiritual growth and stress management, were negatively correlated with intention to leave for both on-campus and distance students. Some differences were noted among on-campus students, where more frequent engagement in nutrition related behaviours was correlated negatively with intention to leave, which was not the case for distance students. In addition, engaging in health responsibility and physical activity were negatively correlated with intention to leave for distance students, but not on-campus students, however only small effects were noted.

Summary of Relationships between Health-Promoting Behaviours and Academic Outcomes

Some relationships were noted between health-promoting behaviours and academic outcomes. In particular, stress management would be considered more important in terms of academic outcomes, such as accessing USQ support and intention to leave. Overall, health-promoting behaviours appeared to be related more with intention to leave than with GPA or accessing USQ support.

Inferential Statistics

The next stage of analysis involved examining whether there were significant differences between marital status and health variables (i.e., health value, self-reported health, and wellbeing). A series of separate one-way ANOVAs were conducted. The first ANOVA examined marital status and general health variables. The results indicated that there were significant differences between marital status and wellbeing $F(5, 765) = 5.49, p = .01$. Students who were married reported a greater sense of wellbeing ($M = 23.51, SD = 6.74$) than those who were either single ($M = 22.17, SD = 6.89$) or in a de-facto relationship ($M = 23.22, SD = 6.46$).

The second ANOVA examined marital status and health-risk behaviours (i.e., BMI, psychological distress and hazardous drinking). Levene's test for equality of variances was significant for hazardous drinking $F(5, 760) = 5.94, p = .01$ therefore Tamhane's post hoc test was used in the ANOVA. There were significant differences found between BMI $F(5, 760) = 8.74, p = .01$ and marital status. For example, single students had a lower BMI ($M = 25.54, SD = 6.03$) than married students ($M = 28.21, SD = 6.33$). In terms of psychological distress, single students had higher rates of distress ($M = 22.71, SD = 7.49$), compared with married students ($M = 20.76, SD = 6.82$).

Next, marital status and health-promoting behaviours were examined. Levene's test was significant for health responsibility $F(5, 760) = 2.50, p = .03$ therefore Tamhane's test was used. The ANOVA indicated that there were significant differences in marital status and nutrition $F(5, 760) = 4.36, p = .01$ and health responsibility $F(5, 760) = 3.44, p = .01$. With respect to nutrition, married students engaged in more nutrition related behaviours ($M = 4.61, SD = 0.50$), than single students ($M = 2.44, SD = 0.50$). For health responsibility, students who were divorced engaged in more behaviours for self-care ($M = 2.47, SD = 0.64$) than single ($M = 2.14, SD = 0.64$) or de-facto students ($M = 2.14, SD = 0.59$).

Overall, despite some statistical differences between marital status categories and some health variables, the ANOVAs indicated that marital status itself was not significant across most key health variables. Some significant differences were noted between married and single students, but not across all marital status categories. As such, other socio-demographics variables such as age and gender should be considered for further analyses when exploring differences between modes of study in terms of socio-demographic variables.

To further examine the differences between on-campus and distance students, the next phase of the data analysis was to use MANOVA to test the significance between the two groups. The use of MANOVA (Multivariate Analysis of Variance) "tests whether mean differences among groups on a combination of DV's (dependent variables) are likely to have occurred by chance" (Tabachnick & Fidell, 2007, p. 243). Conducting MANOVA is preferable to conducting multiple comparisons, for example multiple t-tests, to reduce the risk of a type 1 error, and to explore the effects of the independent variables on the sample (Field, 2009; Tabachnick & Fidell, 2007).

Field (2009) suggested that there are three main practical considerations prior to running MANOVA analyses, namely independence of observations, sampling, multivariate normality and homogeneity of covariance matrices. Univariate normality was assessed with

the use of Shapiro-Wilks tests. Significant results (with significance set at $p < .05$) were found for the following variables: GPA, self-reported health, BMI, psychological distress, hazardous drinking, social support, physical activity, stress management, general self-efficacy, negative affect and accessing USQ support. It should be noted that the Shapiro-Wilks test is more stringent than the Kolmogorov-Smirnov normality test, and is more likely to have significant results with large samples (Field, 2009). Despite these significant results, visual inspection using box plots indicated mostly univariate normality.

In terms of determining multivariate normality, multicollinearity was first examined between the correlations of dependent variables and was found to be of no concern, given that no variables between .80 and .90 were highly correlated (Field, 2009). Linearity between the dependent variables was also explored, using inspection of bivariate scatter plots between the dependent variables. Given that some variables were not normally distributed, linearity was not always clearly identified. It should be noted that some variables, such as psychological distress, are known to be more likely to be positively skewed (Slade, Grove, & Burgess, 2011), and attempts to transform data may lose meaning and thus affect the interpretation of results (Tabachnick & Fidell, 2007).

Removing multivariate outliers did improve linearity when compared with the original data set. Homogeneity of variance was explored in the MANOVA output, using the Box's M test. Box's M should be non-significant ($p < .05$). Prior to the MANOVA, the correlations between key independent and dependent variables were re-examined to ensure that there were significant relationships. It was important to consider demographic variables as a potential factor in student differences, however as age was found to not correlate statistically well with many student stress, strain, coping and academic outcomes, even with a small effect, it was decided not to include age with MANOVA analyses. Instead, gender was

chosen as a variable of interest between on-campus and distance students, given its relationship as a key predictor of engagement in health behaviours.

Groups of variables were classified into general health, health-risk behaviours, health-promoting behaviours, stress, strain and coping, general psychological variables, and academic outcomes. In total, six MANOVAs were conducted. Each table represents the independent effects of gender and mode of study on a group of dependent variables, as well as the interaction effects of gender and mode of study, with grouped variables. Related to each MANOVA is a summary of means and standard deviations of the dependent variables.

Interaction Effects of Gender and Mode of Study on General Health Variables

The first MANOVA presented as Table 18, examined the interaction effect between independent variables such as gender and mode of study, with the dependent variables of health value, self-reported health and wellbeing. Box's M and Levene's test for homogeneity of variance of the dependent variables were not significant.

Table 18

Interaction between Gender and Mode of Study on General Health Variables

Effect	Multivariate Tests	Value	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	Sig.	η^2
Gender	Pillai's Trace	.01	2.42	3.00	760.00	.07	.01
	Wilk's Lambda	.99	2.42	3.00	760.00	.07	.01
	Hotelling's Trace	.01	2.42	3.00	760.00	.07	.01
	Roy's Largest Root	.01	2.42	3.00	760.00	.07	.01
Mode of Study	Pillai's Trace	.01	3.29	3.00	760.00	.02*	.01
	Wilk's Lambda	.99	3.29	3.00	760.00	.02*	.01
	Hotelling's Trace	.01	3.29	3.00	760.00	.02*	.01
	Roy's Largest Root	.01	3.29	3.00	760.00	.02*	.01
Gender and Mode of Study	Pillai's Trace	.01	1.85	3.00	760.00	.14	.01
	Wilk's Lambda	.99	1.85	3.00	760.00	.14	.01
	Hotelling's Trace	.01	1.85	3.00	760.00	.14	.01
	Roy's Largest Root	.01	1.85	3.00	760.00	.14	.01

Note. $N = 766$. * $p < .05$. General health variables: DV's (Health Value, Self-Reported Health, and Wellbeing), and IV's (Mode of Study and Gender).

These results indicated that there were no significant effects of both gender and mode of study, or gender alone to account for any differences in relation to general health variables. Using Wilk's Lambda statistic, there was a significant effect of mode of study on general health variables $\Lambda = 0.99$, $F(3, 760) = 3.39$, $p < .05$.

This meant that differences between on-campus and distance students did exist in terms of general health variables, however on further inspection of dependent variables in a univariate ANOVA, health value was found to be the only statistically significant variable $F(1, 762) = 8.11$, $p = .01$, $\eta^2 = .01$ despite a small effect size noted. Table 19 presents the means and standard deviations in relation to general health variables for on-campus and distance students.

Table 19

Means and Standard Deviations of General Health Variables for On-Campus and Distance Students

Variable	On-Campus Students ^a		Distance Students ^b	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
General health				
Health value	18.70	4.39	19.58	4.31
Wellbeing	22.35	7.27	22.64	6.76
Self-reported health	2.70	0.93	2.75	1.00

Note. On campus^a = *n* (270), Distance^b = *n* (496).

Table 19 presents the differences between students relating to health value, showing that distance students placed a higher value on their health ($M = 19.58$, $SD = 4.31$) than on-campus students ($M = 18.70$, $SD = 4.39$).

Interaction Effects of Gender and Mode of Study on Health-Risk Behaviours

The second MANOVA presented in Table 20, examined the interaction between gender and mode of study and health-risk behaviours, such as BMI, psychological distress, and hazardous drinking. Smoking was not included as a health-risk behaviour in the MANOVA, as it was a dichotomous variable. Box's M test was significant, and Levene's test significant for both BMI $F(3, 762) = 3.29$, $p = .02$ and hazardous drinking $F(3, 762) = 5.20$, $p = .001$.

Table 20

Interaction between Gender and Mode of Study on Health-Risk Behaviours

Effect	Multivariate Tests	Value	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	Sig.	η^2
Gender	Pillai's Trace	.01	2.37	3.00	760.00	.07	.01
	Wilk's Lambda	.99	2.37	3.00	760.00	.07	.01
	Hotelling's Trace	.01	2.37	3.00	760.00	.07	.01
	Roy's Largest Root	.01	2.37	3.00	760.00	.07	.01
Mode of study	Pillai's Trace	.01	3.33	3.00	760.00	.02*	.01
	Wilk's Lambda	.99	3.33	3.00	760.00	.02*	.01
	Hotelling's Trace	.01	3.33	3.00	760.00	.02*	.01
	Roy's Largest Root	.01	3.33	3.00	760.00	.02*	.01
Gender and mode of study	Pillai's Trace	.01	2.04	3.00	760.00	.11	.01
	Wilk's Lambda	.99	2.04	3.00	760.00	.11	.01
	Hotelling's Trace	.01	2.04	3.00	760.00	.11	.01
	Roy's Largest Root	.01	2.04	3.00	760.00	.11	.01

Note. $N = 766$. * $p < .05$. Health-risk behaviours: DV's (BMI, Psychological Distress, and Hazardous Drinking), IV's (Mode of Study and Gender).

Multivariate tests indicated no differences between gender and mode of study for health-risk behaviours, such as BMI, psychological distress, and hazardous drinking. Using Wilk's Lambda statistic, there was a significant effect of mode of study on health-risk behaviours $\Lambda = 0.99$, $F(3, 760) = 3.33$, $p < .05$. On further inspection of the univariate ANOVA, the only significant difference was that of psychological distress $F(1, 762) = 5.21$, $p = .05$, $\eta^2 = .01$. The means and standard deviations of health-risk behaviours are presented in Table 21.

Table 21

Means and Standard Deviations for Health-Risk Behaviours for On-Campus and Distance Students

Variable	On-Campus Students ^a		Distance Students ^b	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Health-risk behaviours				
Body mass index	26.07	6.04	27.45	6.38
Psychological distress	22.72	7.78	21.43	6.97
Hazardous drinking	5.71	4.84	5.19	4.75

Note. On campus^a = *n* (270), Distance^b = *n* (496).

In terms of psychological distress, findings indicated that on-campus students had higher psychological distress ($M = 22.72$, $SD = 7.78$) than distance students ($M = 21.43$, $SD = 6.97$). These findings indicate overall from the MANOVA that other than psychological distress, there were no statistical differences between on-campus and distance students in terms of health-risk behaviours.

Interaction Effects of Gender and Mode of Study on Health-Promoting Behaviours

The third MANOVA presented in Table 22, examined the interactions between gender and mode of study, and their effect on health-promoting behaviours including interpersonal relations, health responsibility, physical activity, spiritual growth, nutrition and stress management. There was no significant interaction found between gender and mode of study, however independent differences were noted separately for gender and mode of study.

Table 22

Interaction between Gender and Mode of Study on Health-Promoting Behaviours

Effect	Multivariate Tests	Value	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	Sig.	η^2
Gender	Pillai's Trace	.07	8.96	6.00	757.00	.001*	.07
	Wilk's Lambda	.93	8.96	6.00	757.00	.001*	.07
	Hotelling's Trace	.07	8.96	6.00	757.00	.001*	.07
	Roy's Largest Root	.07	8.96	6.00	757.00	.001*	.07
Mode of study	Pillai's Trace	.03	3.68	6.00	757.00	.001*	.03
	Wilk's Lambda	.97	3.68	6.00	757.00	.001*	.03
	Hotelling's Trace	.03	3.68	6.00	757.00	.001*	.03
	Roy's Largest Root	.03	3.68	6.00	757.00	.001*	.03
Gender and mode of study	Pillai's Trace	.00	.45	6.00	757.00	.84	.00
	Wilk's Lambda	1.00	.45	6.00	757.00	.84	.00
	Hotelling's Trace	.00	.45	6.00	757.00	.84	.00
	Roy's Largest Root	.00	.45	6.00	757.00	.84	.00

Note. $N = 766$. * $p < .05$. Health-promoting behaviours: DV's (Interpersonal Relations, Nutrition, Health Responsibility, Physical Activity, Spiritual Growth and Stress Management), and IV's (Mode of Study and Gender).

In Table 22, of the dependent variables, nutrition was the only variable found to show statistically significant differences between modes of study $F(1, 762) = 3.15, p = .001, \eta^2 = .02$. Distance students were more likely to frequently use nutrition-related behaviours ($M = 2.57, SD = 0.53$) than on-campus students ($M = 2.43, SD = 0.54$). Table 23 presents the means and standard deviations for the health-promoting behaviours.

Table 23

Means and Standard Deviations for Health-Promoting Behaviours for On-Campus and Distance Students

Variable	On-Campus Students ^a		Distance Students ^b	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Health promoting behaviours				
Nutrition	2.43	0.54	2.57	0.53
Stress management	2.23	0.52	2.22	0.51
Health responsibility	2.20	0.63	2.22	0.59
Physical activity	2.14	0.64	2.12	0.67
Spiritual growth	2.83	0.59	2.88	0.54
Interpersonal relations	2.93	0.56	2.89	0.51

Note. On campus^a = *n* (270), Distance^b = *n* (496).

Significant gender effects were also noted in terms of health-promoting behaviours, specifically in terms of interpersonal relations $F(1, 762) = 5.96, p = .001, \eta^2 = .03$ with females engaging more frequently in these behaviours ($M = 2.95, SD = 0.52$) than males ($M = 2.72, SD = 0.51$). Females also were found to be more responsible with their health ($M = 2.25, SD = 0.60$) than male students ($M = 2.09, SD = 0.60$), $F(1, 762) = 3.65, p = .001, \eta^2 = .01$.

Interaction Effects of Gender and Mode of Study on Student Stress, Strain and Coping

The fourth MANOVA is presented as Table 24. It provides the interaction between gender and mode of study and its effect on student stress (academic stress, lifestyle/financial stress, and personal stress), strain (academic, physical and psychological/interpersonal) and student coping (recreation and self-care, problem-focused coping, and social support).

Table 24

Interaction between Gender and Mode of Study on Student Stress, Strain and Coping

Effect	Multivariate Tests	Value	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	Sig.	η^2
Gender	Pillai's Trace	.08	6.97	9.00	754.00	.001*	.08
	Wilk's Lambda	.92	6.97	9.00	754.00	.001*	.08
	Hotelling's Trace	.08	6.97	9.00	754.00	.001*	.08
	Roy's Largest Root	.08	6.97	9.00	754.00	.001*	.08
Mode of study	Pillai's Trace	.05	4.52	9.00	754.00	.001*	.05
	Wilk's Lambda	.95	4.52	9.00	754.00	.001*	.05
	Hotelling's Trace	.05	4.52	9.00	754.00	.001*	.05
	Roy's Largest Root	.05	4.52	9.00	754.00	.001*	.05
Gender and mode of study	Pillai's Trace	.01	.54	9.00	754.00	.85	.01
	Wilk's Lambda	.99	.54	9.00	754.00	.85	.01
	Hotelling's Trace	.01	.54	9.00	754.00	.85	.01
	Roy's Largest Root	.01	.54	9.00	754.00	.85	.01

Note. $N = 766$. * $p < .05$. Student stress, strain and coping: DV's (Academic Stress, Lifestyle/Financial Stress, Personal Stress, Recreation and Self-Care Coping, Problem-Focused Coping, Social Support, Academic Strain, Physical Strain, Psychological/Interpersonal Strain), and IV's (Mode of Study and Gender).

There was no significant interaction between gender and mode of study on student stress, strain and coping. However, significant differences were found independently for gender and mode of study. The only difference found between on-campus and distance students was in terms of problem-focused coping $F(1, 764) = 9.41, p = .001, \eta^2 = .01$. The differences in problem-focused coping are presented in Table 25.

Table 25

Means and Standard Deviations of Student Stress, Strain and Coping for On-Campus and Distance Students

Variable	<u>On-Campus Students</u> ^a		<u>Distance Students</u> ^b	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Student stress				
Academic	3.34	0.66	3.28	0.67
Lifestyle and financial	3.33	0.80	3.10	0.80
Personal	2.67	0.75	2.75	0.74
Total student stress	3.17	0.56	3.10	0.55
Student coping				
Recreation and self-care	2.72	0.72	2.63	0.74
Social support	3.83	0.82	3.67	0.80
Problem-focused coping	3.44	0.65	3.58	0.56
Total student coping	3.33	0.56	3.29	0.52
Student strain				
Academic	2.83	0.48	2.77	0.44
Physical	3.12	0.86	3.07	0.92
Psychological/interpersonal	2.76	0.75	2.70	0.77
Total student strain	2.78	0.60	2.72	0.62

Note. On campus students ^a = *n* (270), Distance students ^b = *n* (496).

Distance students had higher levels of problem-focused coping ($M = 3.58$, $SD = 0.56$) than on-campus students ($M = 3.44$, $SD = 0.65$) as presented in Table 25. There was a significant gender effect specifically in terms of lifestyle/financial stress, with females experiencing this more frequently ($M = 3.23$, $SD = 0.80$) than males ($M = 2.99$, $SD = 0.81$) $F(1, 764) = 8.56$, $p = .00$, $\eta^2 = .01$. In terms of student coping, females experienced more

social support ($M = 3.79$, $SD = 0.80$) than males ($M = 3.51$, $SD = 0.81$), $F(1, 764) = 14.99$, $p = .001$, $\eta^2 = .02$. Finally, physical strain was experienced by female students ($M = 3.16$, $SD = 0.91$) more than male students ($M = 2.79$, $SD = 0.83$), $F(1, 764) = 17.17$, $p = .001$, $\eta^2 = .02$.

Interaction Effects of Gender and Mode of Study on Psychological Variables

The fifth MANOVA presented as Table 26, explored the effect of gender and mode of study on psychological variables, such as general self-efficacy, positive affect and negative affect. Box's M test was significant, and Levene's test was significant for negative affect $F(3, 762) = 5.58$, $p = .001$.

Table 26

Interaction between Gender and Mode of Study on Psychological Variables

Effect	Multivariate Tests	Value	F	Hypothesis	Error df	Sig.	η^2
Gender	Pillai's Trace	.02	4.83	3.00	760.00	.001*	.02
	Wilk's Lambda	.98	4.83	3.00	760.00	.001*	.02
	Hotelling's Trace	.02	4.83	3.00	760.00	.001*	.02
	Roy's Largest Root	.02	4.83	3.00	760.00	.001*	.02
Mode of study	Pillai's Trace	.01	3.36	3.00	760.00	.02*	.01
	Wilk's Lambda	.99	3.36	3.00	760.00	.02*	.01
	Hotelling's Trace	.01	3.36	3.00	760.00	.02*	.01
	Roy's Largest Root	.01	3.36	3.00	760.00	.02*	.01
Gender and mode of study	Pillai's Trace	.00	.61	3.00	760.00	.61	.00
	Wilk's Lambda	1.00	.61	3.00	760.00	.61	.00
	Hotelling's Trace	.00	.61	3.00	760.00	.61	.00
	Roy's Largest Root	.00	.61	3.00	760.00	.61	.00

Note. * $p < .05$. $N = 766$. Psychological variables: DV's (General Self-Efficacy, Positive Affect and Negative Affect), and IV's (Mode of Study and Gender).

Multivariate tests were not significant for the interaction between (gender and mode of study). Negative affect was experienced at higher levels for on-campus students ($M = 21.86, SD = 7.86$) than distance students ($M = 20.22, SD = 7.39$), $F(1, 764) = 8.86$, $p = .001$, $\eta^2 = .01$ (see Table 27).

Table 27

Means and Standard Deviations for Psychological Variables for On-Campus and Distance Students

Variable	<u>On-Campus Students^a</u>		<u>Distance Students^b</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Psychological				
General self-efficacy	31.36	4.43	31.82	4.51
Positive affect	32.47	8.78	32.73	8.12
Negative affect	21.86	7.86	20.22	7.39

Note. On campus^a = $n(270)$, Distance^b = $n(496)$.

In terms of the effect of gender on psychological variables, the only significant difference was general self-efficacy $F(1, 762) = 12.91$, $p = .001$, $\eta^2 = .02$ with males having higher general self-efficacy ($M = 32.85, SD = 4.16$) than females ($M = 31.33, SD = 4.48$).

Interaction Effects of Gender and Mode of Study on Academic Outcomes

The final MANOVA presented as Table 28, examined the effects of gender and mode of study on academic outcomes, such as GPA and accessing USQ support. This analysis was conducted on 641 cases, as not all students had acquired a GPA. Intention to leave was not included as an academic outcome variable in the MANOVA, as this is a dichotomous variable, and is best analysed using correlations (Tabachnick & Fidell, 2007). Box's M was significant for this MANOVA, and Levene's test was significant for accessing USQ support $F(3, 637) = 5.46$, $p = .001$.

Table 28

Interaction between Gender and Mode of Study on Academic Outcome Variables

Effect	Multivariate Tests	Value	<i>F</i>	Hypothesis	Error <i>df</i>	Sig.	η^2
Gender	Pillai's Trace	.01	1.82	2.00	636.00	.16	.01
	Wilk's Lambda	.99	1.82	2.00	636.00	.16	.01
	Hotelling's Trace	.01	1.82	2.00	636.00	.16	.01
	Roy's Largest Root	.01	1.82	2.00	636.00	.16	.01
Mode of study	Pillai's Trace	.03	10.88	2.00	636.00	.001*	.03
	Wilk's Lambda	.97	10.88	2.00	636.00	.001*	.03
	Hotelling's Trace	.03	10.88	2.00	636.00	.001*	.03
	Roy's Largest Root	.03	10.88	2.00	636.00	.001*	.03
Gender and mode of study	Pillai's Trace	.00	.26	2.00	636.00	.77	.00
	Wilk's Lambda	1.00	.26	2.00	636.00	.77	.00
	Hotelling's Trace	.00	.26	2.00	636.00	.77	.00
	Roy's Largest Root	.00	.26	2.00	636.00	.77	.00

Note. $N = 641$. * $p < .05$. On-campus ($n = 242$), Distance students ($n = 399$). Academic outcome variables: DV's (GPA and USQ Support), and IV's (Mode of Study and Gender).

There were no significant interaction effects between gender and mode of study, however a significant effect for mode of study $F(1, 637) = 20.91, p < .001, \eta^2 = .03$ was found. This indicated that there was a statistically significant difference between on-campus and distance students accessing USQ support. There was no significant interaction effect of gender in terms of students' academic outcome variables (Table 28). Table 29 presents the means and standard deviations for academic outcomes for on-campus and distance students.

Table 29

Means and Standard Deviations for Academic Outcomes for On-Campus and Distance Students

Variable	<u>On-Campus Students^a</u>		<u>Distance Students^b</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Academic outcomes				
Grade point average	5.21	1.05	5.18	1.24
Accessing USQ support	3.42	5.27	1.69	4.05

Note. On campus ^a = *n* (242), Distance ^b = *n* (399)

Table 29 presents the differences between students, and shows that on-campus students accessed USQ supports more ($M = 3.42$, $SD = 5.27$) than distance students ($M = 1.69$, $SD = 4.05$).

Summary of Effects of Gender and Mode of Study between On-Campus and Distance Students

In relation to examining further the “between-group” differences of on-campus and distance students, the effect of gender and mode of study was analysed in relation to grouped variables. The findings based on the MANOVAs indicate few differences between on-campus and distance students in relation to gender and mode of study.

The findings indicated that there was an effect of mode of study on general health variables (health value), health-risk behaviours (psychological distress), health-promoting behaviours (nutrition), student stress, strain and coping (problem-focused coping), and academic outcomes (accessing USQ Support). The findings suggest that there may be some protective factors in distance students, as they tend to value their health more, had lower levels of psychological distress, and had used more problem-focused coping than on-campus students. These factors should be worthy of further exploration in Study 2, to determine

what distance students do to help cope with their studies and what protective factors may exist.

Beyond examining the differences related to mode, Study 1 also sought to examine the role of demographic variables in group differences. Using MANOVA, there were some effects of gender across study variables. First, interpersonal relations and social support behaviours were more frequently used by female students than males. Secondly, there were some differences in student stress, strain and coping. Females experienced higher levels of lifestyle/financial Stress and physical strain than males, but engaged more frequently in activities related to gaining social support. The only other effect noted were males having higher levels of general self-efficacy, than females.

Whilst the differences between on-campus and distance students to date were important to examine by using MANOVA, in the context of this study it was also considered important to examine which key health variables would best predict student stress, strain and coping and academic outcomes. Given the few differences found between on-campus and distance students, it was important to develop and test a predictive model for each group, to determine whether the same path relationships existed, regardless of study mode.

The third aim of Study 1 was to develop and test a path model to predict student stress, strain, coping and academic outcomes, using current theoretical understanding and accounting for the relationships between variables. The following steps were used in developing and testing a path model: (a) selection and justification of key study variables for inclusion in the proposed model, (b) summary of relationships between key variables of interest for a proposed model, and (c) the testing of the proposed model with on-campus and distance students. The research questions were focused on examining which variables predicted student stress, strain and coping and academic outcomes, and what role health-promoting behaviours played in student stress, strain and coping and academic outcomes.

Selection and Justification of Key Variables for Path Models

For simplicity, it was necessary to consider for further analysis only those variables pertinent to student stress, strain and coping and academic outcomes, thus resulting in a more concise number of variables. Reducing the number of variables reduces the potential for ambiguity and interpretation of the meaning from convoluted relationships, and reduces the risk of multicollinearity (Tabachnick & Fidell, 2007). The collapsing of sub-variables into overarching variables is an attempt at this, and was achieved with health-promoting behaviours and student stress, strain and coping.

In determining which variables should be brought forward for further analysis, the relationships between the study correlations were reviewed. Following previous examinations of the relationship of the key variables in Study 1, there were a number of variables which either (a) did not correlate well amongst many key study variables, or (b) were not statistically significant. Given that the path model needed to include variables which were statistically significant (Keith, 2006), it was decided to only include variables that had at least a small effect size ($r = .1$) with student stress, strain and coping and academic outcomes.

Variables such as positive affect, negative affect and general self-efficacy correlate either moderately or highly with most health variables, and can sometimes be described as nuisance variables or pervasive cognitive states (Clark & Watson, 1991). As such these variables were removed from the proposed path model. Therefore, to theoretically build a predictor model, it was decided not to include such broad constructs, but rather to focus on the main predictor variable of health-promoting behaviours and their relationship with student stress, strain and coping and academic outcomes.

In terms of deciding which general health variables to include or discard, it was decided not to include wellbeing as a variable, as this was found to be highly correlated with

most health-promoting behaviours, and itself, may be considered an outcome variable. It was decided therefore to include only *Health Value* and *Self-Reported Health* in a proposed path model. Both health value and self-reported health were found to correlate strongly with health-promoting behaviours and student stress, strain and coping, and academic outcomes.

In terms of health-risk behaviours, the only variable found to correlate well with student, stress, strain and coping, academic outcomes, and health-promoting behaviours, was *Psychological Distress*. Other health-risk behaviours such as BMI, smoking and hazardous drinking, either had no relationship or poor relationships with student stress, strain and coping, and academic outcomes, therefore were no longer relevant to include as key predictors. This resulted in a refocus of the key variables of interest, such as role that health-promoting behaviours played in predicting student stress, strain, coping and academic outcomes. Nevertheless, psychological distress was important to consider, given its strong relationship with student coping and academic outcomes.

There was some collapsing of variables to reduce the number of subscales into one variable, to reduce the risk of creating an over complex model. For example, the six health promoting behaviour subscales, namely nutrition, interpersonal relations, health responsibility, physical activity, spiritual growth and stress management, were combined into the one variable of *Health-Promoting Behaviours*. In the case of health-promoting behaviours, the total of each of the six subscales, not the mean of each subscale, was used.

Similarly, student stress, strain and coping scales were combined. Personal stress, academic stress, lifestyle/financial stress were combined into one *Stress* variable. *Strain* was created by combining academic strain, psychological/interpersonal strain and physical strain. *Coping* was derived from recreation and self-care coping, problem-focused coping and social support.

Accessing USQ support was found to correlate poorly with student stress, strain and coping, and therefore was removed from the proposed model. Both *GPA* and *Intention to Leave* were retained, as these were shown previously to have small to moderate effects with many key variables of interest. Only listwise cases were considered in the path model ($n = 641$), excluding cases with no GPA data. Table 30 presents the means and standard deviations of the proposed variables for the path model. The correlations for the path model variables appear in Table 31.

Table 30

Means and Standard Deviations for Reduced Path Model Variables

Variables	<i>M</i>	<i>SD</i>
Health value	19.16	4.31
Self-reported health	2.72	1.00
Psychological distress	21.89	7.25
Health-promoting behaviours	2.48	0.43
Stress	2.61	4.47
Strain	2.75	0.62
Coping	3.32	0.53
Grade point average	5.20	1.18

Note. $n = 641$. Intention to Leave was not calculated, as this is was a dichotomous variable.

Table 31

Correlation Matrix of Study 1 Variables for Proposed Path Model

Variables	1	2	3	4	5	6	7	8	9
1. Health value	1.00								
2. Self-reported health	.10**	1.00							
3. Psychological distress	-.09*	-.43**	1.00						
4. Health promoting behaviours	.26**	.34**	-.46**	1.00					
5. Student stress	-.10**	-.42**	.60**	-.47**	1.00				
6. Student strain	-.14**	-.50**	.75**	-.55**	.74**	1.00			
7. Student coping	.15**	.35**	-.49**	.69**	-.55**	-.63**	1.00		
8. Grade point average	-.05	.14**	-.19**	.10*	-.11**	-.20**	.11**	1.00	
9. Intention to leave	-.03	-.23**	.29**	-.19**	.33**	.33**	-.23**	-.07	1.00

Note. $n = 641$. * $p < .05$, ** $p < .01$. Health-Promoting behaviours = Interpersonal Relations, Nutrition, Health Responsibility, Physical Activity, Spiritual Growth, and Stress Management. Stress = Academic, Lifestyle/Financial, Personal. Strain = Academic, Psychological/Interpersonal, Physical. Coping = Recreation and Self-Care, Problem-Focused, and Social Support.

Table 31 presented the significant relationships between Health-Promoting Behaviours and Coping, and in particular, the strong negative correlations with Stress and Strain. There appeared to be a much smaller positive relationship between Health-Promoting Behaviours and GPA and negative correlation with Intention to Leave. Furthermore, Self-Reported Health was positively correlated with Stress, Strain and Coping, with moderate to large effects noted.

Proposed Path Models

A path analysis model was developed using (AMOS Version 19), examining key predictors of Stress, Strain, Coping and Academic Outcomes, with particular emphasis on the role of Health-Promoting Behaviours in Stress, Strain and Coping. To date, there has been no evidence that such a model has been developed, with Australian on-campus and distance students in relation to the study variables. The proposed model began considering a theoretical fit for general health variables, namely Health Value and Self-Reported Health, in relation to Health-Promoting Behaviours. Secondly, the relationship between Health-Promoting Behaviours and Stress, Strain and Coping was also considered. Given that Health-Promoting Behaviours were strongly correlated with Coping, this provided a clear rationale for placing these behaviours near Coping.

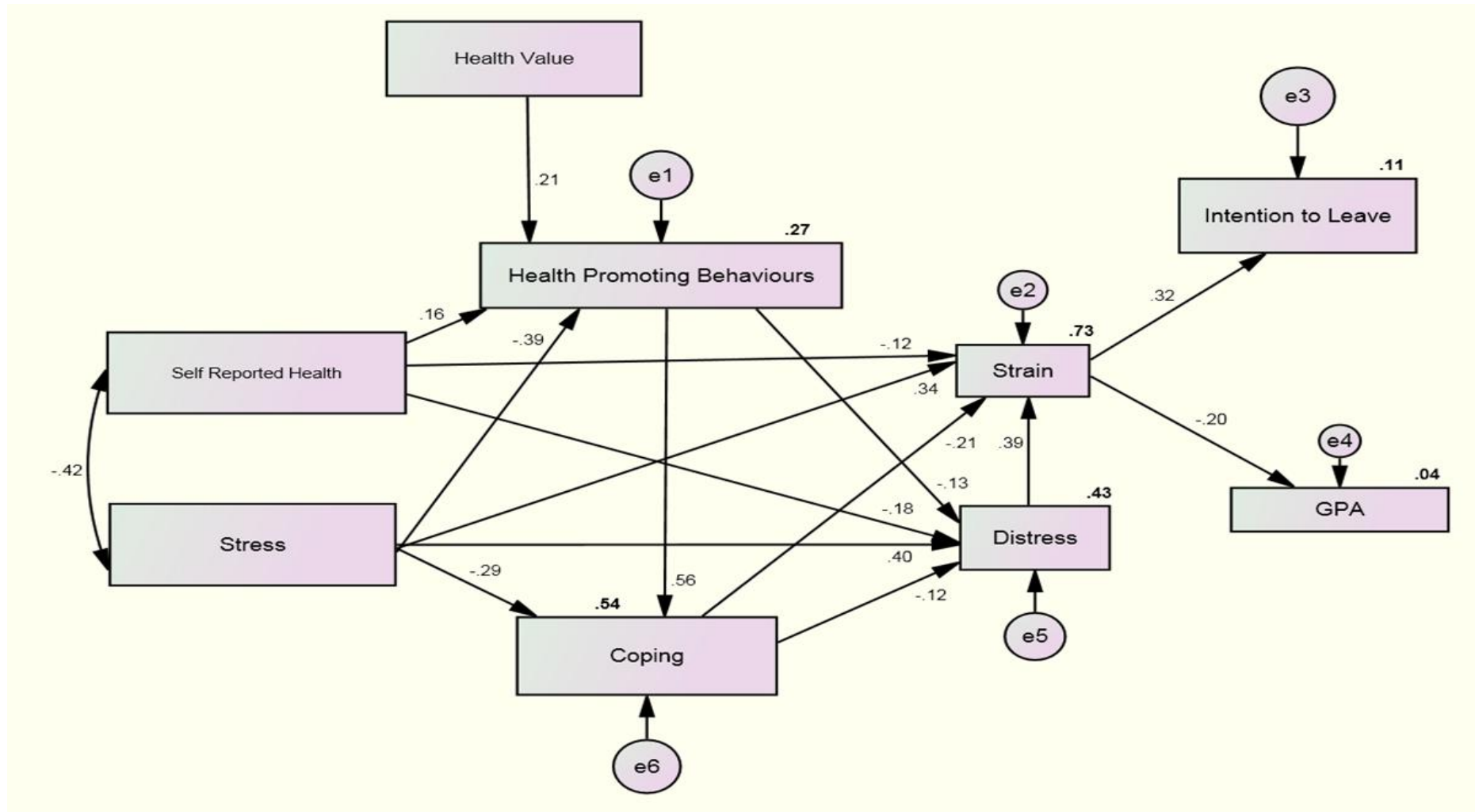
Whilst a number of plausible models may be possible in exploring the variables, it was decided that if a model was found to be a good statistical fit, then alternative models would not be generated. It is acknowledged that this is a potential area for further research.

The first overall model presented as Figure 10 was developed and tested with a dataset of $n = 641$, including both on-campus and distance students, excluding those who had not yet acquired a GPA at the time of analysis. Figures 11 and 12 present unconstrained models for on-campus students and distance students, respectively. Figure 13 is a constrained residual path model, which was tested to determine if the model behaved in the same way across the two modes.

Overall Path Model

Figure 10 presents the proposed model of key predictors of student stress, strain and coping and academic outcomes (Intention to Leave and GPA), including relationships with general health (Health Value and Self-Reported Health) and health-risk behaviours (Psychological Distress).

Figure 10. Overall Path Model for On-Campus and Distance Students



Note. Variances are presented in bold. e1-6 represents error variance.

The total explained variances shown in Figure 10 are presented in bold. All other values represent standardised path coefficients. Table 32 provides the fit indices for the overall path model, which combined on-campus and distance students (see Figure 10).

Table 32

Fit Indices for the Overall Path Model

χ^2 (df)	<i>p</i>	RMSEA	NFI	CFI	PCFI
46.2 (20)	.001	.045	.979	.988	.549

Note. n = 641. RMSEA = Root Mean Square Error of Approximation; NFI = Normed Fit Index; CFI = Comparative Fit Index; PCFI = Parsimonious Comparative Fit Index.

The fit indices indicated that the model was a very good fit. In terms of Health-Promoting Behaviours, 27% of the variance in the model was predicted by Health Value, Self-Reported Health and Stress. Both indirect and direct effects occurred between Health-Promoting Behaviours and Coping. The indirect effect occurred via Stress through Health-Promoting Behaviours to Coping. The direct effect occurred from Health-Promoting Behaviours to Coping. Health-Promoting Behaviours had less of an effect on Psychological Distress than the direct effect of Stress. Health-Promoting Behaviours had more of an indirect effect on Strain via Coping, rather than a direct relationship. Table 33 presents the path relationships for Figure 10.

In terms of the estimates for the model, all hypothesised paths in the model were significant, either at $p < .001$ or $p < .05$, as indicated in Table 33. The next stage was to determine whether the model was an adequate fit for each of the two modes of study.

Table 33

Output of Relationships in the Overall Path Model

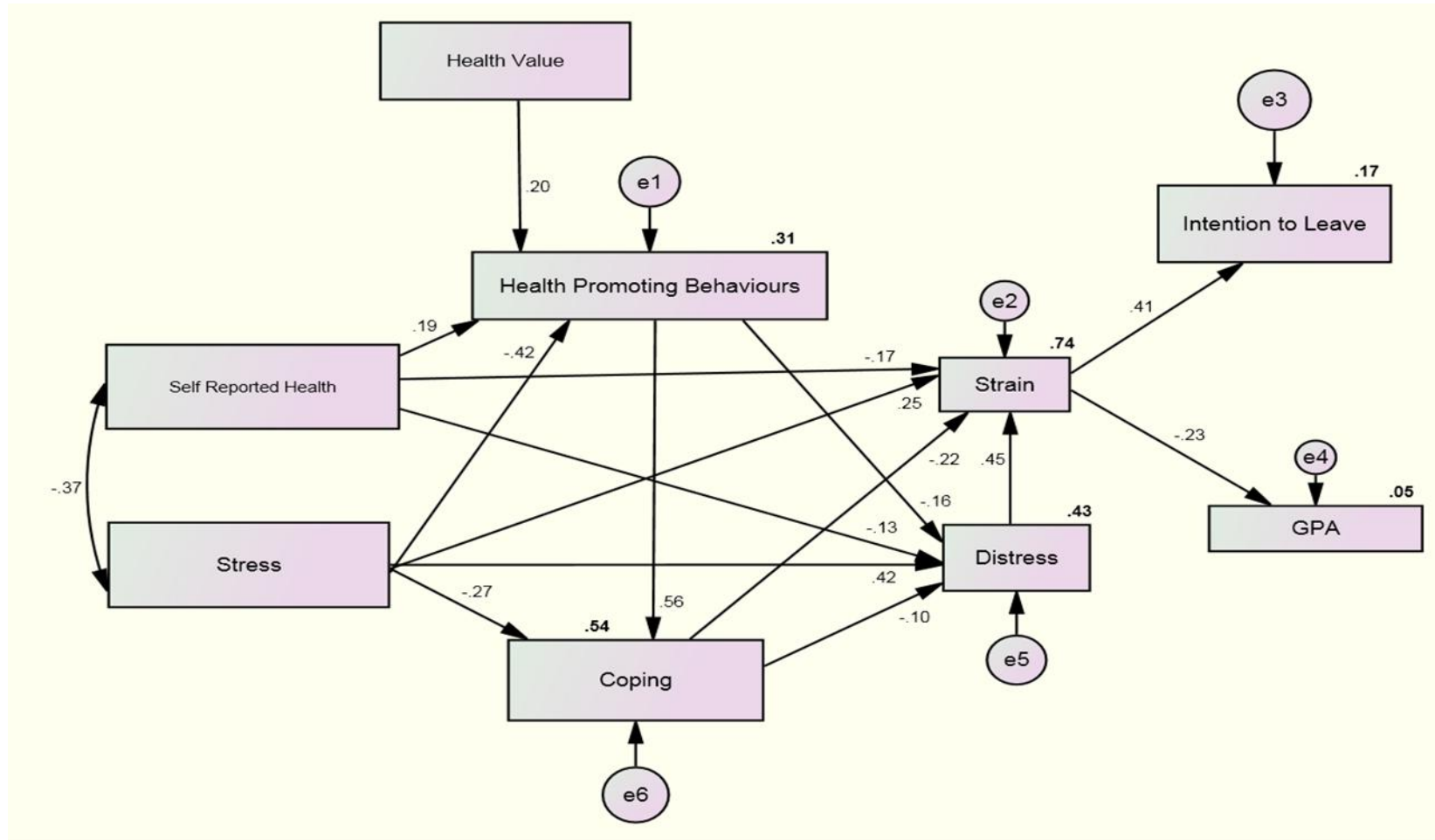
Path Relationships	β	S.E	C.R.(t)	<i>p</i>
Health value → Health-promoting behaviours	1.07	.18	6.10	<.001
Stress → Health-promoting behaviours	-.77	.07	-10.35	<.001
Self-reported health → Health-promoting behaviours	3.52	.83	4.25	<.001
Stress → Coping	-.01	.00	-9.56	<.001
Health-promoting behaviours → Coping	.01	.00	18.43	<.001
Stress → Psychological distress	.26	.02	10.53	<.001
Self-reported health → Psychological distress	-1.27	.24	-5.25	<.001
Coping → Psychological distress	-1.61	.61	-2.66	.008
Health-promoting behaviours → Psychological distress	-.04	.01	-3.17	.002
Stress → Strain	.02	.00	12.23	<.001
Coping → Strain	-.24	.03	-8.25	<.001
Self-reported health → Strain	-.07	.01	-5.05	<.001
Psychological distress → Strain	.03	.00	14.64	<.001
Strain → GPA	-.38	.07	-5.14	<.001
Strain → Intention to leave	.25	.03	8.67	<.001

Note. *n* = 641. S.E = Standard error of measurement, C.R.(t) = Critical Ratios.

Unconstrained Models for On-Campus and Distance Students

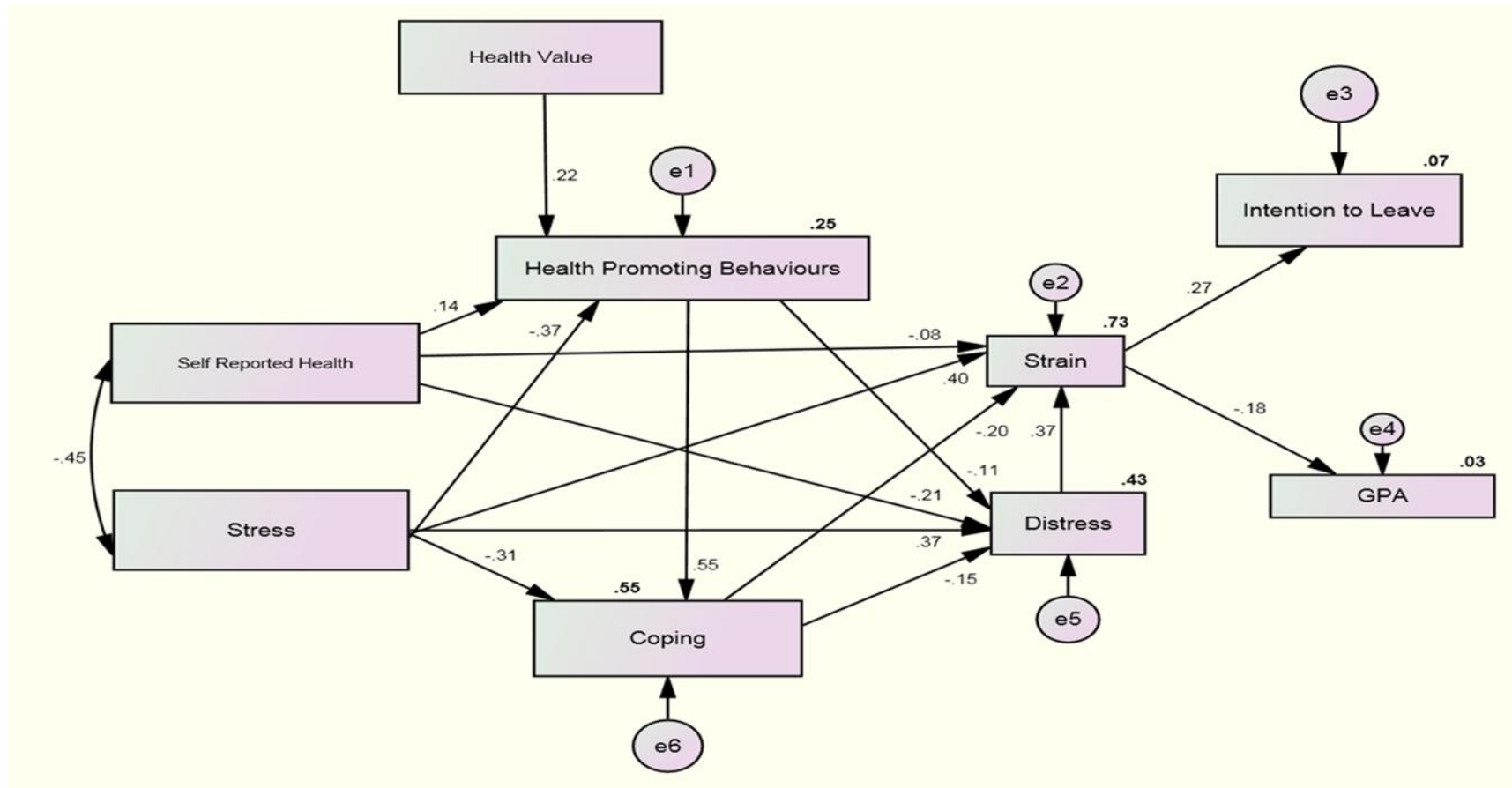
In the following analyses, unconstrained path models were tested to determine whether the proposed path model presented as Figure 10, was an adequate fit for each of the two modes of two separately. The models are presented as Figure 11 (Unconstrained Model for On-Campus students), and Figure 12 (Unconstrained Model for Distance Students).

Figure 11. Unconstrained Model for On-Campus Students



Note. Variances are presented in bold. e1-6 represents error variance.

Figure 12. Unconstrained Model for Distance Students



Note. Variances are presented in bold. e1-6 represents error variance

Table 34

Fit Indices for the Unconstrained Models for On-Campus and Distance Students

χ^2 (df)	<i>p</i>	RMSEA	NFI	CFI	PCFI
72.834 (40)	.001	.036	.968	.985	.547

Note. $n = 242$ (on-campus students), $n = 399$ (distance students). RMSEA = Root Mean Square Error of Approximation; NFI = Normed Fit Index; CFI = Comparative Fit Index; PCFI = Parsimonious Comparative Fit Index

Table 34 represents the fit statistics for both unconstrained models, Figures 11 and 12, respectively. The original path model (Figure 10) was tested independently across on-campus and distance students. Whilst the model remained a good fit, it behaved slightly differently across the two groups in terms of estimates of paths. Table 35 presents the path relationships for on-campus students.

Table 35

Output for Path Relationships in the Unconstrained Model for On-Campus Students

Path Relationships		β	S.E	C.R.(t)	<i>p</i>
Health value	→ Health-promoting behaviours	1.07	.29	3.67	<.001
Stress	→ Health-promoting behaviours	-.86	.12	-7.29	<.001
Self-reported health	→ Health-promoting behaviours	4.62	1.40	3.30	<.001
Stress	→ Coping	-.01	.00	-5.33	<.001
Health-promoting behaviours	→ Coping	.01	.00	11.17	<.001
Stress	→ Psychological distress	.28	.04	6.97	<.001
Self-reported health	→ Psychological distress	-1.04	.42	-2.48	.013
Coping	→ Psychological distress	-1.42	1.01	-1.41	.159
Health-promoting behaviours	→ Psychological distress	-.05	.02	-2.27	.023
Stress	→ Strain	.01	.00	5.51	<.001
Coping	→ Strain	-.25	.05	-5.59	<.001
Self-reported health	→ Strain	-.11	.02	-4.85	<.001
Psychological distress	→ Strain	.04	.00	10.50	<.001
Strain	→ GPA	-.41	.11	-3.72	<.001
Strain	→ Intention to leave	.33	.05	6.96	<.001

Note. *n* = 242. S.E = Standard error of measurement, C.R.(t) = Critical ratios.

In Table 35, Coping did not predict Psychological Distress ($p = .159$) for on-campus students. Table 36 presents the path relationships for the unconstrained model for distance students (Figure 12).

Table 36

Output for Path Relationships in the Unconstrained Model for Distance Students

Path Relationships		β	S.E	C.R.(t)	<i>p</i>
Health value	→ Health-promoting behaviours	1.12	.22	5.10	<.001
Stress	→ Health-promoting behaviours	-.71	.10	-7.50	<.001
Self-reported health	→ Health-promoting behaviours	2.95	1.03	2.88	.004
Stress	→ Coping	-.01	.00	-8.23	<.001
Health-promoting behaviours	→ Coping	.01	.00	14.75	<.001
Stress	→ Psychological distress	.23	.03	7.59	<.001
Self-reported health	→ Psychological distress	-1.43	.29	-4.88	<.001
Coping	→ Psychological distress	-1.96	.76	-2.58	.010
Health-promoting behaviours	→ Psychological distress	-.04	.02	-2.03	.042
Stress	→ Strain	.02	.00	11.30	<.001
Coping	→ Strain	-.24	.04	-6.21	<.001
Self-reported health	→ Strain	-.05	.02	-2.54	.011
Psychological distress	→ Strain	.03	.00	10.73	<.001
Strain	→ GPA	-.36	.10	-3.74	<.001
Strain	→ Intention to leave	.20	.04	5.63	<.001

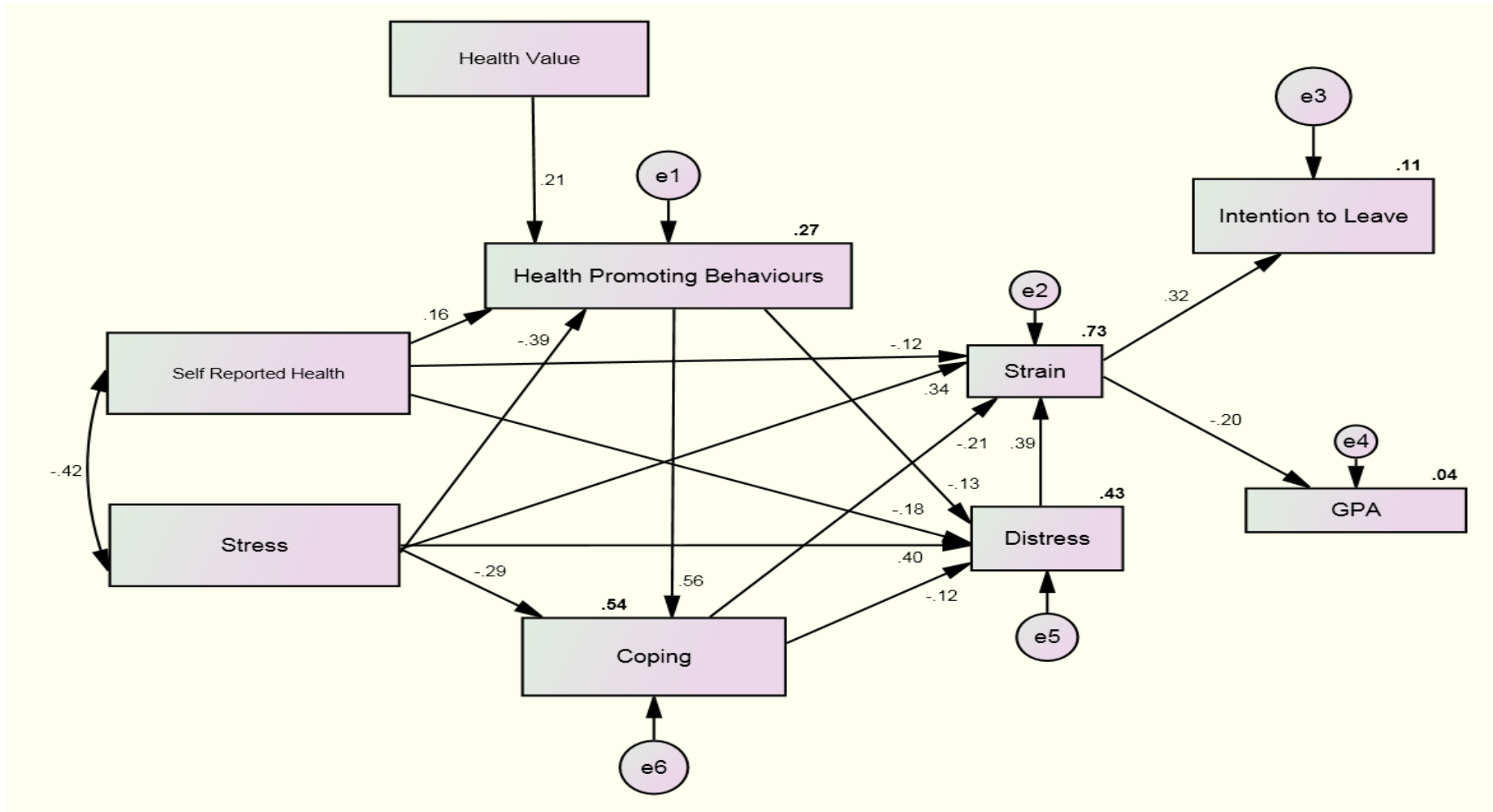
Note. *n* = 399. S.E = Standard error of measurement, C.R.(t) = Critical ratios.

Furthermore, there were differences between the total effect of Strain on Intention to Leave and GPA between the two modes of study. More than twice the amount of variance of Intention to Leave, was accounted for by Strain for on-campus students, compared to distance students.

Constrained Path Model for both On-Campus and Distance Students

Next, the model was then constrained to determine if it behaved in the same way across the two modes (see Figure 13). In this case, the on-campus and distance student data was separate but analysed simultaneously for each of the two modes of study. In the constrained model, the paths were constrained, and then tested to see if the model remained a good fit, using more stringent statistical processes.

Figure 13. Constrained Residual Model



Note. Variances are presented in bold. e1-6 represents error variance.

Table 37

Fit Indices for Constrained Model

χ^2 (df)	<i>p</i>	RMSEA	NFI	CFI	PCFI
136.58 (74)	.001	.036	.939	.971	.998

Note. *n* = 641. RMSEA = Root Mean Square Error of Approximation; NFI = Normed Fit Index; CFI = Comparative Fit Index; PCFI = Parsimonious Comparative Fit Index.

Table 37 provides the fit indices for the constrained model, (see Figure 13). Even when constrained, the model remained a good fit and indicated overall, that it supported the predicted relationships between key study variables. This further supports Study 1's findings that few differences existed between on-campus and distance students. Table 38 presents the path relationships for the constrained model.

Table 38

Output for Path Relationships for Constrained Model

Path Relationships	β	S.E	C.R.(t)	<i>p</i>
Health value → Health-promoting behaviours	1.07	.18	6.10	<.001
Stress → Health-promoting behaviours	-.77	.07	-10.34	<.001
Self-reported health → Health-promoting behaviours	3.52	.83	4.25	<.001
Stress → Coping	-.01	.00	-9.55	<.001
Health-promoting behaviours → Coping	.01	.00	18.41	<.001
Stress → Psychological distress	.26	.02	10.52	<.001
Self-reported health → Psychological distress	-1.27	.24	-5.25	<.001
Coping → Psychological distress	-1.61	.61	-2.66	.008
Health-promoting behaviours → Psychological distress	-.04	.01	-3.17	.002
Stress → Strain	.02	.00	12.22	<.001
Coping → Strain	-.24	.03	-8.25	<.001
Self-reported health → Strain	-.07	.01	-5.04	<.001
Psychological distress → Strain	.03	.00	14.63	<.001
Strain → GPA	-.38	.07	-5.14	<.001
Strain → Intention to leave	.25	.03	8.67	<.001

Note. *n* = 641. S.E = Standard error of measurement, C.R.(t) = Critical ratios.

Discussion of Study

Study 1 had three overall aims: (a) to examine the relationships between general health, psychological variables, health risk and health-promoting behaviours, student stress, strain, coping and academic outcome variables, (b) to examine the differences between on campus and distance students in terms of study variables, and (c) to develop a path model to best predict student stress, strain and coping and academic outcomes, using current theoretical understandings and relationships between the variables found in Study 1.

The first aim of the study focused on examining relationships between key study variables. One of the intentions of the correlational analysis, was to determine whether health variables such as general health, health risk and health promoting variables correlated with student stress, strain, coping and academic outcomes. In addition, psychological variables, such as general self-efficacy, positive affect and negative affect, were also examined in relation to health-promoting behaviours and student stress, strain and coping, as these have been previously found to be key predictors in health behaviour (Kelsey et al., 2006; Steptoe et al., 2009; Karademas & Kalantzi-Azizi, 2004).

Age was firstly examined in relation to the study variables. Age has been cited as one of the main differences between on-campus and distance students (Bean & Metzner, 1985; Burton & Dowling, 2010; Coates & Ransom, 2011) and found to influence engagement in healthy behaviours (Arras et al., 2006; Eshah, 2010; Hermon & Davis, 2004; Myers & Mobley, 2004). Despite previous research, age in this study, was not found to be significantly related across the study variables. Where significant relationships were found, generally these were only small effects.

Of the statistically significant relationships, age was found to be negatively correlated with student stress (personal stress, lifestyle/financial stress and academic stress), student strain (physical strain, psychological/interpersonal strain, and academic strain), and positively

correlated with problem-focused coping. The positive relationship between age and problem-focused coping has been highlighted in previous research (Haught et al., 2000). Age was positively correlated with only some health-promoting behaviours (nutrition, health responsibility and spiritual growth), again with only small effect sizes found. In terms of academic outcomes, age was positively correlated with GPA. Age was also positively correlated with general self-efficacy. Despite these significant relationships, overall, age did not correlate strongly with most key variables of interest, and consequently was not considered for further analyses.

In relation to health-risk behaviours (BMI, smoking and hazardous drinking) and student stress, strain, coping and academic outcomes, health-risk behaviours were found to poorly correlate. In addition, the health-risk behaviour grouping itself was poorly intercorrelated. Psychological distress was the only variable significantly correlated with other health-risk behaviours.

BMI was negatively correlated with most health-promoting behaviours, except for health responsibility, with only small effects noted. Psychological distress was found to correlate well across all study variables with small to large effects noted, including negative relationships with health-promoting behaviours. In terms of student stress and strain, as students' psychological distress levels increased, so did their levels of stress and strain. Interestingly, larger effects of psychological distress were noted with stress and strain than with coping, indicating that reducing distress levels may be more beneficial in reducing the effects of stress and strain.

The second intention of the correlational analyses was to re-examine the relationships between study variables, with the view of discarding variables that correlated poorly with the target variables of student stress, strain, coping and academic outcomes. The correlational analysis also determined if subscales of key variables, if strongly intercorrelated, could be

collapsed into single variables. A more refined selection of variables was important to inform deeper analyses, namely, the MANOVAs and path models. As a result, the variables that were considered to be the most robust and theoretically relevant to include in the path model were Health Value, Self-Reported Health, Psychological Distress, Health-Promoting Behaviours, Stress, Strain, Coping, GPA and Intention to Leave.

The second aim of the study examined differences between on-campus and distance students. As age had been found to correlate poorly across most study variables, it was decided to instead examine the effect of gender between groups of students in relation to study variables. “Between-group” differences were examined for on-campus and distance students across key groupings of variables including; general health, psychological variables, health risk and health-promoting behaviours, student stress, strain, coping and academic outcomes.

The findings indicated that there were some gender effects, although small, between on-campus and distance students in relation to health-promoting behaviours and student stress, strain and coping, and psychological variables. Firstly, female participants engaged in more frequent interpersonal relations and health responsibility behaviours than males. Secondly, females experienced more lifestyle/financial stress and physical strain than males, but engaged in more social support behaviours. Thirdly, males had higher levels of general self-efficacy than females. This may indicate that female students may be more inclined to actively seek support than males. This may infer that interventions may need to be enhanced to support male students, to better seek help and develop a network of social supportive relationships whilst studying.

Significant effects of mode were also found in general health variables, health-risk behaviours, health-promoting behaviours, student coping, psychological variables, and academic outcomes. Distance students placed a higher value on their health, engaged in more

problem-focused coping and nutrition related behaviours, had less psychological distress, and less negative affect than on-campus students.

With respect to health value, the value that distance students placed on their health ($M = 19.58, SD = 4.31$) was higher than previously reported in other university sample. Burris et al. (2009) reported the average health value was ($M = 16.6, SD = 3.3$) although this result was based upon a younger sample of students ($M = 19.8$ years). Distance students experienced less strain and stressors than on-campus students, and they used more problem-focused coping than the other two types of coping. Problem-focused coping is considered an important mediating variable in dealing with stress (Chao, 2011; Karademas & Kalantzi-Azizi, 2004). Higher levels of problem-focused coping may play an important role, given that the distance students in this sample accessed fewer support services in general than on-campus students.

These findings may indicate that reflecting and placing a higher value on health as well as taking proactive approaches to solving issues, may all be protective factors. As such, these behaviours could be actively promoted with distance students. Whilst not within the focus of this research, these findings may also be relevant for on-campus students, to enhance their protective behaviours.

In this study, distance students accessed USQ support significantly less than on-campus students. The lack of access to support services has been previously documented as an issue for distance students (La Padula, 2003; Nichols, 2010). This finding could indicate several things, first that distance students may be unaware of the range of supports provided. Second, they may not consider them relevant to their needs. Third, despite the services provided, they may perceive difficulties in accessing them, particularly if they are not living in the local area. Another possibility is that distance students may perceive that they have other adequate mechanisms and supports to cope with their study and care for their health.

This may indicate that they do not consider it necessary to access supports such as counselling. Nevertheless, given the lack of access to support services by distance students in general, it is important to explore students' perceptions of the role that the university may play to best support their health and coping. Therefore, this will be addressed in the second phase of the study.

The third aim of the study was to develop and test a path model based upon the relationships between key variables, designed to best predict the role that general health, health-promoting and health-risk variables may play with student stress, strain and coping and academic outcomes. Subsequently, an overall path model was developed and tested, both independently, and simultaneously with on-campus and distance students' datasets.

As such, it was then important to consider the path relationships between the key variables. More specifically, it was important to consider if the path relationships were similar for both on-campus and distance students. When developing the path model it was noted that other than psychological distress, no other health-risk behaviours had significant or strong enough relationships with the key variables, to be considered for inclusion within the path model. Consequently, the model focused on whether Health-Promoting Behaviours would mediate between Stress and Coping, and Stress and Strain. In order to be comprehensive, Health Value, Self-Reported Health, Psychological Distress and Academic Outcomes, such as GPA and Intention to Leave, were included in the model.

This model was tested in three ways with increasing levels of stringency. First, the path model (Figure 10) was tested with all students combined. Second, the model was examined independently for on-campus and distance students. On both occasions, a good fitting model was achieved. Health-Promoting Behaviours partially yet strongly mediated the relationship between Stress and Coping. Health-Promoting Behaviours also partially mediated the relationship between Stress and Psychological Distress. It was of particular

note, that the standardised path coefficients for the two groups of students were remarkably similar.

Third, when variances were constrained between on-campus and distance students, the model was found to be the same. That is, the relationship between the variables would be of similar magnitude for both groups. Even when constraining the variances to be the same, a good fitting model was still achieved. This indicated that the final model (Figure 13) behaved in a similar way for both on-campus and distance students.

Chapter Summary

This study established a number of important findings. Firstly, in relation to the relationships between study variables, age was not found to be significantly correlated across the study variables. Secondly, of the health-risk behaviour variables, psychological distress was determined to be an important variable. Psychological distress was correlated negatively with health-promoting behaviours and student coping, and positively with student stress and strain. Thirdly, as expected, this study found strong and positive relationships between health-promoting behaviours and student coping.

As highlighted in the literature review, there has been little previous research which has examined differences between on-campus and distance students with respect to these combined study variables. In Study 1, there were few differences noted between the two student groups. One interesting finding from the MANOVAs, was that distance students may have a number of protective factors towards their health and coping, such as placing a higher value on their health, using problem-focused coping, and having lower levels of psychological distress, than on-campus students. Phase 2 of the research involves a more in depth investigation from distance students about such protective factors, which is important in understanding how they may cope with their studies.

Furthermore, when testing the two groups of students using a path model, health-promoting behaviours were found to have a large degree of variance in student coping. Again, these behaviours may actually be a protective factor, acting as mediator between stress and strain. Whilst health-promoting behaviours did not have a direct relationship with academic outcomes, the significance of their role appears most salient with student coping.

The current findings support previous understanding of the role that health-promoting behaviours may play in promoting positive coping, and how these behaviours buffer the effects of stress and strain (Pomaki et al., 2007). The development of more in-depth understanding of how specifically distance students use these behaviours to help them cope, warrants further investigation, and as such will form the basis of Study 2. The next chapter (Chapter 5) outlines the second phase of the research (Study 2). Chapter 5 outlines the methods and results of a qualitative study conducted with distance students, aimed at exploring their experiences of their study and their health. This builds on the findings from Phase 1 of the research, by providing more in depth explanations from students' perspectives.

Chapter 5: Phase 2 (Study 2)

Chapter Introduction

The second phase of this research aimed to explain the nature of the relationships from Study 1, based on students' perspectives. As Study 1 found, health-promoting behaviours (nutrition, physical activity, stress management, spiritual growth, health responsibility, and interpersonal relations) were a significant predictor of coping, as presented in the path model (see Figure 13) in Chapter 4. Despite many factors known to influence student coping, this study aims to provide rich descriptions about distance students use health-promoting behaviours in particular to cope with their studies.

Previous research has focused on health-promoting behaviours of on-campus students, however little is known about these behaviours for distance students. The second phase of this research aims to bridge this knowledge gap, by providing a deeper understanding of students' behaviours and experiences. This knowledge may assist universities to put in place strategies to positively influence distance students' study experiences.

This chapter outlines the research approach and methodology used in Study 2, including a description of the study participants, data collection and data analysis. In total, seven participants were involved in Study 2. Findings from this research are presented as key themes from participants, based on a thematic analysis approach.

Research Approach

To address the aims of this study, a methodology best suited to building a new knowledge base upon individual perceptions was sought. In line with the mixed-method approach outlined in Chapter 3 (see Table 2), the second phase of this research aimed to provide in-depth qualitative explanations of the relationships found in the quantitative stage of this research (Study 1). This approach is consistent within an explanatory mixed-method design, through which the qualitative component explains the relationships found in

quantitative data (Hanson, Clark, Petska, Creswell, & Creswell, 2005; Tashakkori & Teddlie, 2003; Teddlie & Tashakkori, 2009). The explanatory nature of Study 2 was focused towards the role that health-promoting behaviours play in student coping. This was achieved by exploring the social and academic contexts for distance students and how these influenced behaviour.

Research Aims

The first aim of Study 2 was to explore distance students' perceptions of their stressors, strains and coping, and in particular the role of health-promoting behaviours and student coping. Of interest was how distance students used these behaviours to cope with the demands of juggling multiple roles and responsibilities.

A second aim of Study 2 was to explore how distance students perceived the role/s and responsibility of the university in supporting their coping and health and wellbeing. This aim was not intended to provide an explanation of previous quantitative findings, therefore was merely designed to understand how students perceived a role of the university and supports or strategies which distance students thought would best support their study experience.

The aims of Study 2 and their related research questions are outlined below:

Research Aim 1: To explore the role of health-promoting behaviours within the context of distance students' stressors, strains and ways of coping.

Research Question 1: What stressors and strains are experienced by distance students, and how do they impact on health?

Research Question 2: How do distance students cope with stressors and strains and what role do health-promoting behaviours play in their coping?

Research Aim 2: To explore distance students’ perceptions of the role/s and responsibility of the university in supporting their health and ability to cope.

Research Question 3: What do distance students perceive as the roles and responsibilities of the university in supporting their health and coping?

Methodology

Qualitative research in essence involves exploring the subjective experiences of an individual and their interpretations and meaning which are given to certain phenomena, sitting within a naturalistic paradigm (Polit & Beck, 2010). Philosophically, Studies 1 and 2 sit within contrasting paradigms, often in reference to how knowledge should best be acquired. Table 39 presents these assumptions within qualitative and quantitative approaches (Liamputtong, 2010, p. 15).

Table 39

Comparison between Qualitative and Quantitative Approaches

Qualitative Approach	Quantitative Approach
Words	Numbers
Participants’ point of view	Researchers’ point of view
Meaning	Behaviour
Contextual understanding	Generalisation
Rich, deep data	Hard, reliable data
Unstructured	Structured
Process	Static
Micro	Macro
Natural Settings	Artificial Settings
Theory emergent	Theory Testing
Researcher close	Researcher distant

Table 39 presents key differences between qualitative and quantitative approaches. As noted, qualitative approaches are important to understand the meaning from participants' points of view. In Study 2, it was posited that students' experiences were grounded within their own socially constructed and subjective reality.

Philosophical Underpinnings

Given that distance students are also positioned within a learning context, it is important to consider how their knowledge may be created, and how relationships with others in the learning process may shape their experiences. Commonly in educational literature, there are two overarching perspectives to learning and teaching: objectivism and constructivism.

Objectivism has been described as the process which underpins most traditional educational approaches, in which the teacher imparts knowledge to a student; by contrast, constructivism sees learning as occurring from the construction of meaning which creates knowledge (Brown, 2009). Social constructivism is of particular relevance to this study, where the creation of learning is not just seen as an internal process, but rather is influenced by culture and context, which are also important in forming knowledge. In this sense, other students also involved in the learning process are pivotal in the formation of new knowledge. This is because the influence of others can greatly shape an individual's knowledge. This knowledge is often derived when students have the opportunity to work on shared projects, where deeper learning may be facilitated from understanding different perspectives (Woo & Reeves, 2007).

Adams (2006) states that social constructivism requires the attention to learning as a "mindful activity", where new knowledge builds upon previous knowledge and social influences. These influences may either inhibit or support new knowledge. The role of

others in the formation of new knowledge is derived from a cultural and social process, shaping knowledge around the person's context. In this sense, teachers may play an important role in co-facilitating learning with the student, ensuring that learning is relevant to the student and that they can connect new learning with previous learning. This can be achieved by supporting students in a safe learning environment to ask questions, and share what they think and why, whilst relating to their socio-cultural context (Adams, 2006).

Within a learning context, the building of knowledge is thus created from within a student's social world. Learning may not be just about content, but also knowledge and understandings that arise from learning and interacting with others. Within online environments, creating opportunities in which students can meaningfully interact and create new learning, is seen as a major challenge for educators (Senior, 2010; Woo & Reeves, 2007).

In this study, the social construction of the student experience is likely to be formed based on their relationship with the university, their fellow peers, and the learning and teaching environment, as well as their own social circumstances (Coates, Nesteroff, & Edwards, 2008; Hagel & Shaw, 2006; Kennedy, 2002; Moore & Anderson, 2003). As such, the student may be viewed within both a learning context and a social world. This is particularly important when considering the range of stressors and strains which students may experience, as some of these may be due to factors within the learning environment, or from interactions between the individual and outside social influences.

Method

Rigour and ethics are important issues to consider in all forms of research. In qualitative research, rigour is described as including aspects such as credibility and authenticity, transferability or applicability, dependability, and confirmability (Liamputtong, 2013). First, credibility and authenticity are used to describe the extent to which the research

findings can be trusted. Strategies to ensure credibility and authenticity may include ensuring careful selection of participants, and ensuring that the data is checked in various ways, for example, participant or member checking and peer review, or using data triangulation (Liamputtong, 2013).

Secondly, transferability or applicability relate to the extent to which the findings may be generalisable within a theoretical context. In this case, strategies to ensure again that the sampling strategies are well considered, and that the description of the research setting or context is provided are important. Thirdly, dependability refers to methods used to ensure that the process of data collection and analysis is consistent and accurate. This may include strategies such as keeping audit trails of coding schemes, or keeping an audio recording for confirming accuracy of transcripts. Fourthly, confirmability refers to how closely the data reflects that of the participants' experiences, and not that of the researcher. This can be enhanced by using strategies such as audit trails and triangulation.

In this study, a variety of strategies was used to improve the rigour of the findings, involving the research design and process, research participants and peer researchers. These included: (a) selection of study participants, (b) use of semi-structured interviews to gain insight into distance students' experiences, (c) use of verbatim quotations from the participants' transcripts, (d) checking of the transcripts by participants to ensure accuracy, (e) use of memo notes at the time of interview and comparing these initial thoughts with emerging themes, and (f) involving the researcher's supervisor in reviewing themes.

Recruitment and Selection of Participants

Students were recruited via the online USQ Health and Wellbeing Survey, with a link provided at the end of the survey, enabling them to indicate their interest in Study 2. A total of 310 students indicated their interest in participating in Study 2. Examination of the study interest data meant that some students could be excluded, because (a) they were not

categorised as distance students, or (b) had not completed the consent process. These exclusions resulted in a reduced subset of potentially eligible students ($n = 135$). From this list, a further process of selection was developed. Given that it was not possible to interview such a large group of students, it was decided that students' data would be entered into an excel database and a random number generator used to select a subset of students. This process resulted in a randomly selected group of 12 students. This process was considered a fair and equitable way of choosing students.

Once the group of 12 students was selected, the characteristics of the potential participants were examined. Subsequently, a purposeful selective process based on the demographic and health characteristics of participants took place. This was considered necessary to ensure that the characteristics of the participants would best inform the research questions. Demographic characteristics such as age, gender and ethnicity, marital and employment status, and general health variables such as self-reported health, were used to select suitable students. For example, attempts were made to include an equal number of males and females of varying ages and self-reported health categories. Selecting students based on a variety of characteristics was considered important to obtain a more representative sample of distance students at USQ. In total, 12 students (including students from different ethnic backgrounds) were initially approached by email to participate in Study 2; however a final sample of seven students indicated their willingness to participate. The following inclusion and exclusion criteria were applied to this study.

Inclusion Criteria for Study 2

- Currently enrolled students of USQ (2011) – “active student”
- Minimum 18 years of age
- Mode of study = external/distance/online (for the majority of their program)

Exclusion Criteria for Study 2

- Students not currently enrolled at USQ – “inactive students”
- Students under the age of 18 years
- Mode of study = on-campus students, mixed/flexible mode (for the majority of their program)

Participants

Seven participants in total were involved in Study 2, including four females and three males. Table 40 represents the demographic characteristics of the study participants. Five of the students were married, with ages ranging for all participants from 35 and 51 years. On average, female participants in Study 2 were younger ($M = 38.25$) than male participants ($M = 47.67$). When compared with the general USQ student population, the Study 2 female participants were representative of other distance students, however the male participants in this study were slightly older than the typical USQ male student, whose average age is usually between 30 and 40 years.

Five of the participants were either in part-time or full-time employment, and six were caring for dependent children. Comparable demographic data regarding employment status or caring responsibilities was not available from USQ; however the characteristics of the seven participants were similar to that described in the literature for mature-age or distributed learners (Coates et al., 2008). With regards to the level of program of study, six of the Study 2 participants were studying in an undergraduate Bachelor program, including one student studying a tertiary preparation program to potentially gain entry into an undergraduate program. This is consistent with most students studying by distance at USQ, who study in an undergraduate program. In terms of self-reported health, five students reported their health as between good and excellent, with two participants rating their health as either poor or fair.

Figure 14 represents the geographical location of the participants in Study 2. All participants lived in either a major city or inner regional area. Participant seven was marked twice on the map, as although his home address was Gold Coast, he spent much of his time living and working in Western Australia due to a “fly in, fly out” position. Whilst there are usually great disparities in geographical locations for USQ distance students in general, it is common for many students to reside in regional or metropolitan areas. Given that this study is about distance students, the context of distance is relevant to the context of their experiences, and availability of supports.

Table 40

Demographic Characteristics of Study 2 Participants

Participant Number	Interviewee (pseudonym)	Age	Gender	Marital Status	Employment Status	Faculty	Dependants	Level of Program	Self-Reported Health	Grade Point Average
1	Cassie	35	Female	Married	Full time	Sciences	Yes (2 children)	Bachelor	Fair	7.0
2	Margaret	42	Female	Separated	Not employed	Arts	Yes (5 children)	Bachelor	Very Good	4.7
3	Bill	42	Male	Married	Full time	Sciences	Yes (2 children)	Postgraduate	Excellent	7.0
4	Shelley	41	Female	Married	Full time	Arts	Yes (3 children)	Bachelor	Good	4.9
5	Jenny	35	Female	Married	Not currently working	Education	Yes (2 children)	Bachelor	Very good	5.8
6	Brie	51	Male	Single	Employed	Non-award	No	TPP ^a	Good	1.5
7	Fred	47	Male	Married	Permanent Full time	Business and Law	Yes (3 children)	Bachelor	Poor	5.3

Note. Grade Point Average = Low to moderate < 5, Creditable 5-6, Outstanding > 6. Self-reported health descriptions were obtained from the Study 1 data. TPP^a = Tertiary Preparation Program.



Figure 14. Geographical Location of Study 2 Participants

Data Collection

Given that this study aimed to involve students who were likely to be busy and living at a distance, the research method chosen needed to be cognisant of both time constraints and location. It was decided that semi-structured interviewing using phone interviewing, would be the most suitable approach for gathering data.

Conducting interviews by phone is seen to have a number of advantages over other research methods, despite highlighted disadvantages (Sweet, 2002). Table 41 outlines both the advantages and disadvantages of phone interviewing.

Table 41

Advantages and Disadvantages of Phone Interviewing

Advantages	Disadvantages
Time, money and space efficiency	Lack of visual contact
Reduced travel requirements and costs	Inability to observe communication behaviour
Less intrusive than in home interviews	Inability for researcher to be immersed in the culture or phenomena
May protect participant anonymity which may increase participation	Difficulty in building rapport
Participants at a great geographical distance are able to participate	Lack of visual cues during conversation can make it difficult for the researcher to delve more deeply based on prompts
Enables interviewer to take notes during the interview, thus not detracting from the interview process	Silences may be less tolerated over the phone than in person

(Sweet, 2002)

To address some of the issues raised in phone interviewing, the following steps were taken to ensure the collection of good quality data. Building rapport was viewed as an essential element for effective communication. This began by having a

general conversation, and “engaging in small talk” before the interview. This was an opportunity to reiterate the research aims and consent, and to clarify any questions. In order to create a comfortable situation for facilitating good conversation, it was important to use open-ended questions, limit the use of jargon, match linguistic style with the participant, and to encourage the participants to “get comfortable” (grab a drink, remove shoes, and sit in a comfortable chair).

In addition, during the interview it was important to use active listening in which the participants’ responses were paraphrased to ensure understanding, or more aptly, to avoid misunderstanding. It was important to respect silences on the other end of the phone by not trying to respond too quickly.

Conducting interviews. A digital recorder was used, with an attached phone microphone. Notes were taken during the interview, which were used to prompt the researcher to clarify or summarise key points. Developing a demographic picture of the student, for example how many children they had, or their employment status, was used to tailor more specific questioning.

Each participant was advised that the interview would take approximately one hour to complete. Whilst most interviews were of one hour duration, some interviews lasted 1.5 hours, with the length of the interview guided by the discretion of the participant. All interviews were conducted by the end of Semester 2, 2011.

The interview questions explored students’ perceptions of how their study had impacted on their health and also how they perceived the role of the university in supporting their health and wellbeing.

The following questions were used as the basis for the semi-structured interviews:

1. What has your experience been like whilst studying by distance? (Study 2, Aim 1)
2. Have you faced any challenges with your study, for example balancing family and work with study? (Study 2, Aim 1)
3. How have you tried to cope with these challenges? (Study 2, Aim 1)
4. Has it been hard to stay healthy whilst studying, for example, getting enough exercise? (Study 2, Aim 1)
5. Can you think of ways in which your study impacts on your health and wellbeing including your emotional or mental health?
(Study 2, Aim 1)
6. How do you feel about the supports that the university offers you to cope with your studies, or to support your health and wellbeing? (Study 2, Aim 2)
7. Could the university do more to support distance students like yourself through your studies? (Study 2, Aim 2)

In this study, once some initial interviews had been conducted and the audio reviewed, the researcher reflected on the data to “get a sense” of emerging themes. At this time, it was also important to reflect on the style of interviewing and ensure that further interviews were reflecting the experiences and perceptions of students. This allowed for more opportunities for students to express their thoughts, often using a less structured style of questioning. After all the interviews had been conducted, it was important to reflect on whether data had been saturated. A decision was made at the conclusion of the interviews that this had been achieved, and no new emerging themes were apparent.

Data Analysis

The aim of the data analysis was to (a) present findings related to addressing Research Aim 1 and (b) present findings and discussion in relation to Research Aim 2, which explored the students' perceptions of the role of the university and strategies for improving students' health and wellbeing. It should be noted that as Study 2 was explanatory in nature, the main emphasis of the research focused on Aim 1, rather than on Aim 2.

With regards to qualitative data analysis in general, this is seen to be an “ongoing, cyclical process that occurs from the very beginning of the research itself” (Liamputtong, 2010, p. 371). Teddlie and Tahakkori (2009) stated that, “qualitative data analysis is predominantly inductive in nature” (p. 251). This back and forth iterative process between the data and the analysis, heavily involves the researcher as integral to the interpretation of the data.

One of the most common forms of qualitative data analysis methods is *thematic analysis*, which was the chosen method for this study. Thematic analysis has been defined as “identifying, analysing and reporting patterns (themes) in the data” (Liamputtong, 2009, p. 284). This process involves reading and re-reading each transcript to make sense of the data, using constant comparison between participants' transcripts. This is followed by a collective interpretation of data from all participants, in which broader themes or even more concise or collapsed themes may develop.

Once all interviews had been conducted and recorded, the audio files were transcribed by an external transcription company. Each file was checked against the original audio recording, to ensure the accuracy of the written transcript. Any discrepancies at this point were amended. To verify the accuracy of the data, participants were emailed a copy of their transcript and requested to check for errors,

and to confirm that the transcript reflected the intent of their conversation. This was an important aspect of participant checking, which aids in the overall trustworthiness of qualitative data (Flick, 2008; Teddlie & Tashakkori, 2009).

Initial codes were developed into a theme concept map which was later refined to a narrow set of core study themes. The naming of themes was sometimes derived from the participants' own words (also referred to as 'in vivo coding'), which helped to preserve the meaning of data from participants (Liamputtong, 2009). De Santis and Ugarriza (2000) suggest that themes have five aspects; form (patterns, configurations), function to unite or unify, the underlying factor, web, essence or meaning of an experience, woven throughout, and exist apart from their individual properties. For the data analysis in Study 2, the essences of the students' discussions were developed into the final themes.

Overall, the data analysis process followed the Liamputtong and Serry's (2010) conceptual framework for the practise of coding. This framework includes the following stages; (1) descriptive or open coding (i.e., sorting the data in preparation for further analysis, (2) focused coding (i.e., working with codes to make sense of the data, (3) axial or interpretive coding (i.e., reassembling and organising the codes, and (4) selective coding (identifying a central theme based on previous coding). For example, initial codes such as "student stressors", were more broadly developed into "time issues", which were later developed into time pressures. This was based on the interpretation of the overall feeling of a "pressure" rather than a combination of stressors.

Procedure and Ethical Considerations

Ethics approval was obtained from the USQ Human Research and Ethics Committee (H10REA137.1) with a later amendment (H10REA137.2). As part of the USQ Health and Wellbeing Survey (see Appendix H), students could indicate their interest in participating in Study 2. A separate link was created within the online survey (Study 1), to ensure that no links could be made between the Study 1 data and Study 2 interest, in order to protect the confidentiality of participants.

Interested students were asked to provide their contact details in the online survey, so that a consent form and plain language statement could be sent later by the researcher. After selection of the potential participant sample, each student was sent an email with an attached consent form and plain language statement (see Appendix I). The plain language statement outlined the aim of the study, details of an incentive, and their level of involvement in the study. This statement also outlined that participation was voluntary and that withdrawal from the study could occur at any time. An incentive was offered to all students who completed an interview, which included the chance to enter a draw to win a \$25 USQ book voucher, from which one student was finally chosen.

After reading and understanding the plain language statement, each student was asked to complete and return a completed consent form by email to the researcher. Following receipt of the participant's consent form, the researcher contacted each participant with a follow up phone call to arrange a suitable day and time for an interview. Consent was clarified at this time and also prior to audio recording on the day of the interview. The researcher also confirmed with each participant that the interview would be tape recorded, and to seek their permission. To also protect students' confidentiality, each student was asked prior to the

interview, to provide a pseudonym. The pseudonyms were used in the development of the transcripts and in the reporting of study findings.

One of the potential risks for participants during the interview process was that they could become upset by discussing issues or problems which affected their study. Students were advised initially that they should only discuss matters which they felt comfortable in sharing, and also that USQ services, such as Student Services were available for counselling if required.

With respect to data storage and collection of data, the researcher used a password protected computer, which is maintained and regularly backed up by the universities information computer system network. Computer files of the students' transcripts (including their pseudonym name) have been retained by the researcher and backed up on the password protected computer. The data will be stored for five years (including the audio taped interviews), which at this time would be destroyed.

Results

The focus of Study 2 was to explore distance students' perceptions of the stressors and strains they experienced and how they used health-promoting behaviours to best cope with demands and study. As the path model presented in Chapter 4 (Figure 13) indicated, health-promoting behaviours had a large effect on student coping both directly and indirectly, and as such this relationship was worthy of deeper analysis. Furthermore, the second aim of the study was to explore students' perceptions of the role of the university in supporting distance students' health. Students highlighted a range of strategies which they felt might enhance the support currently provided to distance students.

In Study 2, it became evident that students used a range of strategies to help them cope with their studies. Many of these strategies centred on managing their time effectively and creating a better life balance, given the fact that many of their stressors and strains centred on both work and family commitments. The findings portray the tension felt by students to fit study around their busy lives.

The stressors and strains experienced by students brought challenges in maintaining their health, with students discussing the mental and physical impacts of study on their lives. Some students made active decisions to maintain their health whilst studying, whilst others "put their health on hold" whilst studying.

Given that the participants were studying by distance, not surprisingly some of the study challenges revolved around their online learning experience. Whilst these challenges sometimes existed, they were not always central to their experience. Overall, the themes presented in this chapter reflected both the challenges of distance study balanced with the strategies that students used to maintain their health and wellbeing.

The themes reflected in this study were: (a) Struggling to balance time, (b) Studying online, (c) This study is taking it out of me, and (d) How I get through.

Each of the four themes is described as follows:

- **Theme 1 (Struggling to balance time):** This theme reflects the pressures faced by students trying to juggle family, work and study, related to time pressures.
- **Theme 2 (Studying online):** This theme reflects the pressures faced by students in the online learning environment.
- **Theme 3 (This study is taking it out of me):** This theme reflects the effects of stressors (strains) experienced by students, including mental, physical and relationship stressors.
- **Theme 4 (How I get through):** This theme reflects the variety of ways by which students actively sought to cope with or manage their studies, with their everyday demands.

To provide context around each of these main themes, sub-themes were created. Both the main themes and sub-themes are presented in Table 42.

Table 42

Study 2 Themes and Sub-Themes

Study 2 Themes and Sub-Themes
Theme 1: “Struggling to balance time”
Sub-theme: Daily busyness
Sub-theme: Balancing family ill health and study
Sub-theme: Judging the workload
Theme 2: “Studying online”
Sub-theme: “Struggling with computers”
Sub-theme: “Worrying if you’re on the right track”
Sub-theme: “Feeling disconnected”
Sub-theme: “How do I navigate this online environment?”
Theme 3: “This study is taking it out of me”
Sub-theme: “I’m brain dead!”
Sub-theme: “It’s hard to balance everything and everyone”
Sub-theme: “I don’t have the time to look after myself”
Theme 4: “How I get through”
Sub-theme: Being proactive and organising time
Sub-theme: Having a clear sense of purpose
Sub-theme: Aiming to do well
Sub-theme: Finding balance
Sub-theme: Placing importance on health
Sub-theme: Being realistic and flexible
Sub-theme: Seeking support from others

As this qualitative chapter aimed to explain important findings from the quantitative study, the themes have centred on some of the relationships presented in the path model in Chapter 4 (Figure 13). Figure 15 was developed to represent the alignment of key themes with study findings.

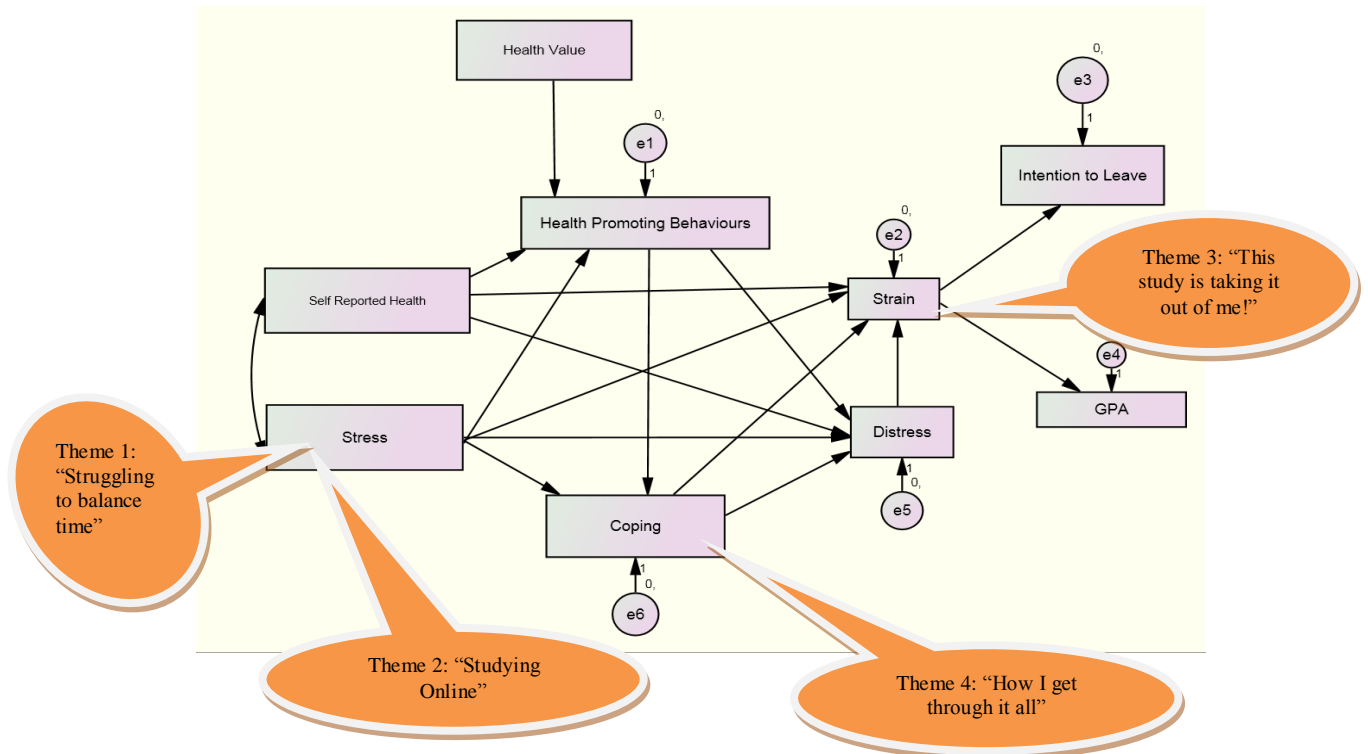


Figure 15. Study 1 Path Model and Relationships with Study 2 Themes and Sub-Themes

As presented in Figure 15, "Struggling to balance time" and "Studying online" related to stress, "This study is taking it out of me" related to the construct of strain and "How I get through it all", related to coping. Whilst each of these themes relates to a key relationship in the path model, it should be noted that as Study 2 is qualitative, participants themselves may not describe the same constructs used in Study 1 explicitly, nor may they describe their experiences in a linear manner.

Types of Stressors and Strains Experienced by Distance Students

The first research question related to Research Aim 1, asked students about the types of stressors and strains experienced, and how these impacted on their health. These understandings are important in contextualising the factors which may inhibit the engagement of positive health behaviours.

The themes related to this research question were “Struggling to balance time” and “Studying online”. With respect to Figure 15, it was important to first understand the types of stressors students experienced and how these affected health-promoting behaviours. As themes 1 and 2 related to student stress, the findings for each of these will be presented, followed by an explanatory summary of how these related to health-promoting behaviours. This theme had relatable sub-themes including: (a) daily busyness, (b) balancing family ill health and study, and (c) judging the workload.

Theme 1: “Struggling to balance time”

The concept of time or lack thereof, greatly contributed to student stress. Students often described busy and full lives, caring for dependent children, caring for elderly parents or being in paid employment. Consistent with the nature of stressors, many of these were perceived to be “out of their control” or just something which they “needed to deal with” as part of life.

For female students, fitting study around family appeared particularly challenging. Their study pressure at times was exacerbated by the additional stress of having family members being unwell. Acknowledging and being sensitive to family health needs of students, is an important issue for consideration by academic staff, particularly if and when the student may require an assignment extension.

Time pressures also appeared within an academic context, for example, unclear course workload demand created additional pressure. It appeared that

receiving study materials in a timely manner could help students cope more effectively.

Sub-theme: Daily busyness. This sub-theme reflected the pressures faced by students dealing with everyday tasks. For most students, their day centred on family commitments. The following excerpts reflect the typical nature of the students' day and demands placed upon them. For female participants, their discussions centred on a "mental list" of things to achieve each day, with study often "fitting around" these demands:

"...work, pick up the kids; go home, the kids have a few things to do in the afternoon, so if it is one of those days, take them to their singing lesson or the Girl Guides or whatever it is. Then when they're finished bring them home, make them dinner, get them in the bath and get them to bed. If I'm not too tired and I feel like I've got stuff to do, then I'll get onto the computer and do stuff." (Cassie)

"Time is the biggest thing. I'm up at 6 in the morning and doing housework, running around getting the kids to school, getting ready for work then bang, straight to work, home, kids and we go and walk the dogs every afternoon for our exercise...then there's homework for them and pressures with their school..." (Shelley)

"Every morning I take the kids to school and day care and Kindy, so I do a big run... Then I take the kids, the little girls, when the big kids are doing their homework in the afternoon, I take them to the beach if we don't have karate." (Margaret)

"You can't really get two solid hours to listen to a lecture or work on an assignment." (Cassie discussing the challenges of studying with two small children, including a new baby)

Cassie, more broadly considered a variety of roles she had in her life and how important the concept of time was in fulfilling each of these:

“I do a lot, like I work full time, I’ve got two kids, and I’m studying. I’m involved in my church, I’m a singer so I like to do concert’s and stuff ... I’ve got all these strings to my bow, so every second counts.”

Many of the students were in paid employment; however most felt that going to work was just part of their busy lives. One student had recently changed jobs, and another had a demanding job which involved large financial contracts, resulting in a great deal of pressure. For Brie (a hairdresser), the pressure to maintain an adequate level of income was a major stressor. The tension to fit his study around his work was evident:

“I think one of the hardest things that I’ve found is trying to juggle that [work and study]. I can’t afford to live on Austudy. I’m not that wealthy. So I need to work as well as do my study. I find study is like a full-time job, like 35 to 40 hours a week for me.”

At times, Brie’s study demands meant that he needed to reduce the number of clients he saw at home, which sometimes meant that he fell behind in his study. For him, the lack of financial stability was a major contributing factor to his stress. On the other hand, Shelley identified as a working mother, where she discussed time pressures between work and study:

“I’m a full-time working mother. I’m working 40 hours a week. I’m spending 40 hours a week with my kids. There’s only so much time and I need 22 hours a week for study.” (Shelley)

For these students, study needed to fit around family, and was generally slotted into whatever time was “left over”. For some, this meant starting their study late at night after children had gone to bed. This resulted in some students feeling

tired due to reducing the amount of quality sleep. For female students, their comments reflected pressures placed upon many women in today's society, juggling work, family and home (Von Prummer, 2000). The division of labour in many of the students' homes, reflected women's heavy involvement in caring for children and engaging in domestic duties. The fact that women often structured their study time at the end of the day "after everything else was done" reflected their sense of priority towards caring for their family.

The busyness of their day reflected both physical demands placed upon them (housework, driving, bathing), and psychological (helping children with homework, or debriefing about their day). For many, their own personal time was limited. Study time was generally tailored around their "downtime" or at the expense of their own personal time.

One student described the busyness of her day as "spinning plates". This was an analogy in which keeping balance was dependent upon keeping the plates (parts of her life) spinning. This meant that she was constantly monitoring and adjusting each pole to ensure that each plate spun in time. The spinning plate concept may be indicative of the need to fulfil multiple social roles.

The need to keep plates spinning, or more broadly to find a sense of life balance, didn't seem to come naturally for students. This was something which was constantly challenged. For some, finding balance seemed to be a learnt skill, requiring them to be reflective of their demands and of their resources to deal with them. This resulted in some readjusting or reprioritising. Maintaining balance therefore was not always static:

"It's all spinning plate stuff. They're all just spinning all the time and sometimes you need to run around and spin one of them. You never know

which one is going to start slower than you have to do something with.

There's no formula.” (Cassie)

“I'm sort of trying to learn how to balance a bit better. I guess that balance is always the challenge.” (Cassie)

Sub-theme: Balancing family ill health and study. Another stressor experienced by some students was family ill health. The unplanned time taken to deal with ill family members, added to their time pressures and demands of study, or was an unwanted distraction. This resulted in students either needing to “make up time” or “work harder” to meet their study deadlines:

“The last 2 months – well this semester in particular my mum – she's down in Adelaide. She's got cancer, and has been going through some pretty horrific treatment. So that's been kind of I guess an added distraction from – if that doesn't sound too harsh – in terms of my bigger focus for me than uni....like at the moment I come back and I'm feeling a bit stressed about this assignment thinking I don't know how I'm going to get this done....” (Bill)

“A couple of weeks ago I had two days of study through my work... I'd book those days in and on the Friday my husband got really ill and got taken to hospital by an ambulance. So that was the whole day gone and that put more pressure on me later which was not good.” (Shelley)

“I've had my brother in law in hospital. We nearly lost him, and nearly lost my dad and then my other brother in law had a severe motorbike accident. In the last month I've had my dad, my brother in law and my husband in hospital and my uncles in hospital and my sons have both broken their arms this year. I think those external pressures on everyday life have most probably had the biggest impact on my health, more so than uni and work.” (Shelley)

“My two youngest ones are asthmatics...then to still try and get an assignment in on time?” (Margaret discussing the challenges of being a sole parent and the added pressure on her study when her children became unwell)

For Cassie, she expressed frustration when applying for assignment extensions. She mentioned the difficulties in meeting the university’s need to always obtain a formal medical certificate when children were unwell. The challenge is that sometimes children may just have a “day off sick” without needing to see a doctor, despite needing to be cared for at home. She didn’t feel that the university always understood this issue, which added to her study pressures:

“It’s like today. I spent all day in the hospital with my daughter. I have a medical certificate today, but if I hadn’t been to the hospital...it wouldn’t be considered appropriate to give any extra time... I can’t ignore my kids and I think it would be wrong to expect me to.” (Cassie)

Sub-theme: Judging the workload. Students sometimes had difficulties judging how much time they should dedicate to specific courses. This included time spent on discussion forums and course readings. Some students felt they needed clearer guidance from lecturers about how best to spend their time in a course. This indicates a more strategic approach to their learning. Examples of comments included:

“It’s sort of hard to judge from the outset how much work is going to be involved in the unit that you can fit around stuff. Because some units they might have a lot of reading and so you can only fit in maybe one of those”
(Cassie)

“I’m trying to get in and do what I can on them [forums]. I find that a little bit frustrating because I’m thinking, am I not balancing my time enough or are

there people that obviously are full time uni students and have plenty of time to do this? Being time poor is the issue. I don't have time to spend as much time reading a lot of the discussions. But I will try and pick out the things that I need to help me along with my assessments.” (Shelley)

“When you’re studying externally, if you want to know something you have to send emails, and it’s all time consuming. Then you have to wait for one back. If you forgot something, you’re like sending three or four emails, that’s a pain.” (Margaret)

The time taken to complete required readings was a challenge:

“I found there’s so much more reading than I thought there would be. You could just stay inside all day.” (Jenny)

“My thing is just the balance of time and the workload and there’s so much to do with the readings and everything else which can be quite intense.”
(Shelley)

Cassie talked also about the lack of clarity about what resources to use in the course. Not knowing what was “essential” for the course, meant that she spent unnecessary time working this out:

“I think it would be much better if they say, these are the core things you need to use, and these are the other things only to help.” (Cassie)

For both Cassie and Jenny, having study materials ahead of time helped them with their overall level of coping. This meant that upcoming family commitments could be tailored around study commitments, and more generally could be better prepared for the semester. This could be a positive strategy by the university to support student coping:

“I think especially for distance students, you need to have everything before semester starts. You have to be able to hit the ground running. So you can't

sort of get introductory books a week or two into semester. By then you've really missed the boat.” (Cassie)

“Generally for all the courses I started a lot of materials for the first few weeks were up at the beginning of semester. So you could get a head start, you're not limited by the information being released week by week. That's a good thing, especially if you do have something coming up and you know you can plan ahead and get a couple of weeks ahead if you need to.” (Jenny)

Theme 2: “Studying online”

Despite the fact that most students were positive about distance study, some did experience difficulties. Interestingly, most students did not refer to themselves as distance students nor discussed issues related to distance study; rather they referred to challenges in relation to online or external study. Hence, this theme reflects students' comments about their online study experience. The main theme of online student challenges is supported by a number of sub-themes including: (a) struggling with computers, (b) worrying if you're on the right track, (c) feeling disconnected, and (d) how do I navigate this online environment?

This theme reflects the impact of the online learning environment on student stress. Many of these challenges related to academic stressors, such as students lacking necessary computer skills for successful study, or feeling disconnected from peers within a learning environment. These issues, in combination with study desk inconsistencies (including the large amount of online content in lectures), left some students frustrated.

Students discussed the need for information to be readily accessible and/or the content to be designed effectively for online learners. As part of their learning, they felt the need to connect with other students, which was useful in grasping the content,

and creating an opportunity to ask questions. The lack of computer skills was a learning barrier for some, but also highlighted students' resourcefulness in trying to find solutions to their academic problems.

Sub-theme: Struggling with computers. A number of students experienced difficulties with technology, either related to enrolment or assessment. Some students lacked the skills required to effectively engage in online study, and as a result, required them to quickly "get up to speed". This was particularly challenging for Margaret, who, lacking basic computer literacy skills, felt that the universities should provide better information about how to do things like developing a PowerPoint presentation:

"I've had trouble with enrolling and they were really good, like they talked me through it, but not the other technical stuff. Like they do technical uni stuff, but not technical assignment-driven things."(Margaret)

To manage, Margaret turned to her children to provide guidance on how to develop a PowerPoint presentation for an assessment task. Given her family's lack of support, she then sought help from a local computer shop. This represented her sense of helplessness but also resourcefulness in trying to overcome this challenge:

"My kids get like really angry at me, the big kids, when I go, can you show me how to do a slide show? They say - they just don't have patience... I'm going this afternoon up to the computer shop where I bought my laptop and hopefully one of the guys there will feel sorry for me and help me."(Margaret)

"I didn't even know how to upload an assignment... when I started I didn't even know how to cut and paste." (Margaret)

Jenny similarly struggled with her ability to use her computer, which was exacerbated by the fact that her computer was not supported by the university's

operating system. In addition, she had limited knowledge of types of files used in data storage:

“We had to do a group presentation. I’ve got a Mac, and recording what I had to say on my Mac then didn’t convert over for them to be able to hear it at Uni. So I had to re-record it. Then I sent the file to the lecturer and she couldn’t open it. So I had to save it as different files and I’m not overly good with that type of information. I don’t know the difference between an .mpeg file and an .av file.” (Jenny)

Sub-theme: Worrying if you’re on the right track. One of the major issues with studying online was the uncertainty of knowing whether you were on the right track with assignments or understanding the course content. This inability to grasp the content knowledge or assignment requirements and expectations resulted in a degree of “study uncertainty”.

Several students compared their current distance experience to that of previous classroom situations. They perceived that being a student on campus had the advantage of being able to hear questions from other students, which either clarified their own questions, or prompted them to ask new questions.

This lack of study certainty, meant for some that they could more easily get “off track”, which was likened to a “guessing game”. As a result, students sometimes received a lower mark than expected, confirming their problem around a lack of clarity. For others, this study uncertainty resulted in reduced study confidence, as evidenced by these comments:

“Correspondence is a lot harder online, asking questions. Because usually you ask a question and another question comes up. Having to, not that you have to wait a long time for responses in the main, but just the flow if you

have three or four questions that come up from asking one... the biggest thing I found moving to online was I wasn't as confident in my knowledge that I was grasping the right context.” (Jenny)

“Even though the online lectures are really good, I think it's just throwing around ideas and talking and seeing if you're on the right track can make it most probably more challenging.” (Shelley)

The ability to clarify expectations with lecturers, or to glean important assignment tips, was at times difficult:

“If you were going off track you knew that what, within five minutes. You could put your hand up and say I was thinking of going this way. They'd say no, we would prefer it if you focused on this area of the assignment.”

(Margaret)

Furthermore, there was uncertainty from one student about what resources were required in the course:

“With the first couple of units I did, there were so many resources that they put out for the students to use, so there was like the textbook, plus there was like the lectures, and then there was a second lot of lectures that you could use if you didn't like the first lot. There was some online stuff and then there was some CD stuff as well. It was never clear what someone needs to use.”

(Cassie)

Receiving feedback too was problematic, as evidenced by this comment:

“When you get your comments back being an external student, they've got to be more in-depth and more constructive. On campus, and I can only go by my own experience, it's much easier to say - to get your comments and then say to your lecturer, can you just explain that a bit more. Then they'll take the time to say this comment really means this.” (Margaret)

Sub-theme: Feeling disconnected. Some students commented on the lack of online interaction with fellow students. This lack of social connectedness resulted in feelings of isolation, abandonment, and an inability to share in a common goal. This was particularly an issue for Margaret. Overall, the social connections with students appeared to be of greater importance than connectedness with academic staff.

The following comments reflected these feelings, and also how academic staff appeared to address this:

“When you’re at uni, everyone is like minded, like when you’re on campus I mean. They’re all there for a common goal. You don’t have that sort of support when you are out here alone... The thought of doing another year just breaks me. I’ve got to get amongst it. I need to speak to adults.” (Margaret)

“I actually find it hard not to be able to connect with people and talk to people in a class situation...it’s different trying to build up rapport over computers than it is face-to-face. What you’re putting in words sometimes can be misinterpreted than if you were speaking to somebody.” (Shelley)

Even when strategies were put in place to encourage communication, not all students took this opportunity:

“With the course I’m doing this time, there was a particular forum set up for Assignment 2. I’m the only one that’s asked any questions in there. So I don’t know how other people are communicating, whether they’re just emailing the lecturer directly.” (Jenny)

Whilst this problem was not experienced by all study participants, the lack of physical or social connections with lecturers, appeared to be a communication barrier:

“Sometimes, yeah, it would be nice to have that interaction. Just to be able to drop in and say, oh I just wanted to ask about this or I need to see you about an extension or something.” (Cassie)

“Not having any face- to- face contact you are really just picturing them... So you can imagine them but you don’t have that cultural interaction.” (Bill)

Margaret experienced difficulties communicating online, which were exacerbated by group dynamic difficulties, resulting in a frustrating experience. This resulted at the time, in her doubting her motivation to continue studying:

“I think group work online is just a joke, because when we were doing it on campus it was instantaneous, everyone - and you could read body language as well... I've found online there are some students who are quite aggressive and I can only relate it to my own life... online it's much harder to read what people are really saying. Then for the final submission - so this was like toing and froing over a matter of weeks. We had three assignments with the same group dynamic. I just felt like giving up in the end because I felt that nothing I was doing was taken on board, so why bother.” (Margaret)

Sub-theme: How do I navigate this online learning environment? Some students faced difficulty in being able to find information easily online, or had difficulty in listening and gaining content from lengthy lectures. Issues related to the way in which learning material was delivered, which did not always engage the learner. Students perceived that lecturers were tempted to provide large amounts of content information, without perhaps considering how the student would use the material in an online environment. Listening to lengthy audio presentations or excessive reading may not suit all styles of learning preferences of students. This has potential for students to “switch off” from learning, and become disengaged.

Inconsistencies existed between the delivery of on-campus and online material, with the study desk layout considered a main problem:

“You know when you open up a page [study desk] and then you go to your other subject, it’s not consistent with how it’s set up. Like you can go to any ‘Woollies’ in Australia and the peanut butter is next to the Vegemite. Like you need that. It’s too confusing.” (Margaret)

Difficulties listening to lengthy online lectures, problems opening up the associated files, and inability to understand a face-to-face lecture delivered online were all issues expressed by Jenny:

“For one course that we did, we had a two hour and a quarter lecture, that was a bit much in one go, you had to break that up.” (Jenny)

“The lecturer did record them [lectures] separately, but then you had to open all these files to get to it. It was a bit painful when it’s for two hours.” (Jenny)

Jenny also thought that audio recordings provided from a face-to-face lecture were not enough to enable her to determine what the lecturer was demonstrating:

“The lectures were only audio recorded, and it was a maths course. The lecturer would do examples for the people in the auditorium on an overhead projector. But because it wasn’t a video recording or didn’t have a PowerPoint attached to it, then that made it hard, because you weren’t quite sure what she was doing.” (Jenny)

For Margaret, she felt that her preferred learning styles were not being addressed adequately in an online environment:

“For me personally I hate reading. When I studied last year on campus I got a lot more out of the lecture than tutorials, when I was able to read what I had to read before and then ask questions.” (Margaret)

Finally, Jenny discussed how lecturers should be flexible in organising times for non-traditional students outside of normal business hours for online chats. This meant that ideally, lecturers should schedule times either during various times throughout the day or at night. Without this flexibility, some students may not be able to make the sessions:

“I think there were two or three choices, and we replied with what would suit us. She picked the two that got the most responses.” (Jenny)

From the stressors or challenges outlined in theme 1 and 2, the resultant strain trying to juggle these demands will be discussed in the following theme of “Burden of Study”.

Theme 3: “This study is taking it out of me!”

The pressures discussed in themes 1 and 2 can affect students in a number of ways. Most commonly, students experienced mental exhaustion, relationship/family strain, role conflict strain, and physical strain. The dominant issue experienced by students was a feeling of being “brain dead”, indicating socially or emotionally based effects.

Sub-theme: “I’m brain dead”. The way in which students described mental exhaustion was more akin to a numbing effect or feeling “brain dead”. Students discussed how after working and studying all week, they had little motivation and energy to think, or be inspired to engage in healthy activities. The effect on the uptake of physical activity behaviours was experienced to a greater extent by female participants, who felt that to engage in healthy activities, would take too much physical or mental energy.

“I’m like I’m brain fatigued, because I’ve worked all week and studied all week. I find I get brain exhaustion more than anything – which is maybe not healthy.” (Margaret)

“It can be very draining, some of the work that I do. I can just end up at the end of the day brain dead, and I just don’t feel like doing anything.” (Fred)

“Well it’s a time pressure and I think also a mind pressure, if that sort of makes sense. In that it takes mental energy to think of what meals you’re going to have or to - like I find it takes a fair bit of mental energy just to make me walk into the gym ... When I’m overwhelmed with study and kids and work happening and other things, it’s just like I can’t face putting energy into anything else.” (Cassie)

For Brie, his study impacted on his mental health. The pressure to keep up, contributed to his feelings of anxiety, which in turn affected the quality of his sleep:

“My undertaking of study, even though it’s my own choice, has affected my anxiety level...this is probably due to my own self-doubt and doubting my ability and my self-discipline... If I get behind in what I’m trying to do, then of course this means anxiety. I can sometimes have restless sleep, wake up at three o’clock in the morning.” (Brie)

Sub-theme: It’s hard to balance everything and everyone.

“It’s a daily or weekly thing I’d say. You know some weeks you can have some bad balance, and others – yeah it’s a pendulum. You swing too much spare time and study builds up. Too much study and the kids are – haven’t spent as much time with them. So you have to strike a balance.” (Bill)

Bill’s comment reflects the constant checking or reflective process in trying to achieve good family, work and study balance. When students perceived an imbalance between these domains, there was underlying guilt associated with taking the time to study, and a tension to “make time up”. If they spent too much time studying, then

they felt guilty because they were using quality family time for their own personal good.

This finding was evidenced by:

“This weekend I’ve got a bit of down time now between the next assignments. I can have a family day out with my kids and make up for it, so I don’t feel so guilty.” (Shelley)

Whilst Brie did not have dependent children, he supported his elderly parents. Brie saw himself as a “carer”, often doing odd jobs around the house. He discussed the tension when he had to set time limits with family members to enable him to study:

“I’m eager to, particularly with my family, put my foot down and say, no, I can’t do this today. As much as I feel obliged to do something for my parents, I do a lot of looking after them. They’re not elderly, but 70 and 75. But I mow their lawns and do a lot of their garden work for them.” (Brie)

For some female students, the pressure to maintain a clean house whilst studying created tension. This was particularly important for Cassie, where a clean house appeared to have a positive effect on her mental health. This may be related to her perceptions of social roles as a mother and wife. By not having a clean and tidy house, she was not able to fulfil these roles satisfactorily:

“I hate being in clutter and mess. Certainly when everything’s been cleaned up and I’ve got a clean desk and clean tables and all the rest of it, I feel calmer...it just sort of helps all around, because you don’t have that sort of ticking time bomb in the back of your mind, going ‘oh I should be doing this’.
(Cassie)

“I’m one of those people that love to have my house tidy and clean and I’ve just had to go, it’s just not happening and it’s okay... It’s hygienically clean and stuff hasn’t been put away here or there but that’s okay. I can’t do it all....

“I always feel that level of stress that I’m working under...so now there’s that constant level of a bit of stress of the house is never quite right, and I don’t feel like I’m doing 100% in everything well.” (Shelley)

In terms of how study impacted on relationships, Cassie discussed how study had taken a toll on her relationship, whilst for Bill, he experienced a partner who was not particularly supportive and felt alone in what he was studying:

“I yell at my husband, poor man. I don’t know. It [study] has an effect on the relationship’s health. Like I’ll cope fine on my own, but it does affect how we are together and how we interact together and that’s probably what suffers more than anything.” (Cassie)

“She sometimes can see it [study] as a bit of a threat, because she doesn’t understand any of what I’m doing, and there is no real way that I could even have a discussion with her about the sorts of things that I’m studying. The support from my direct family you could say is probably negligible because they really have no interest in the subjects I’m studying.” (Bill)

Sub-theme: I don’t have the time to look after myself. Comments by some students reflected the effect of sitting for prolonged periods at a computer. Their sedentary study resulted in either physical strain (eye strain or muscular strain), or reducing their physical activity levels. The following comments relate to the physical impact of study:

“I’ve been having a lot of trouble with my eyes, reading. I think the brightness of my computer screen. I’ve toned it down. I’ve got a cataract growing all over this eye and it seems to be getting bigger.” (Brie)

“I have put on some weight [since studying], which I'm not happy about... I'm six feet three tall. I wouldn't say I'm lean, but I've never been over my recommended weight. But I am now.” (Brie)

“Can get sore eyes and a bit of a sore lower back...If you slouch in a chair all day you can end up with a sore back for months. You can actually find that that changes life and it's quite avoidable. So it's kind of one of those balances.” (Bill)

One student attributed her Vitamin D deficiency to the amount of study time spent indoors:

“I've recently been diagnosed as being Vitamin D deficient. Part of that is always being inside and not going out, and part of that is because I'm studying.” (Cassie)

Juggling demands, including study, made finding the time to exercise difficult for some. Sometimes there was a “trade off” between study and exercise, with study often taking precedence:

“I'm not big into physical exercise. It's just being realistic with yourself, and not beating yourself up. Because I mean, yeah, I should be going to the gym and doing all this other stuff, and the kids play sport as well. So there's a juggle between taking them to and from sport and sometimes after work.”
(Shelley)

“It [study] does keep me from exercising - because when I haven't been studying I like to spend my lunch hour in the gym that we've got at our work. So at the moment it's like well, I'm in the middle of semester and I need to study. So I can't afford to go to the gym I need to focus on study. It's hard to find a way to fit that in.” (Cassie)

Distance Students Coping

The second research question examined how distance students coped with stressors and strains, including the use of health-promoting behaviours. Despite the stressors and strains experienced, this theme outlines the ways in which students actively sought to overcome them.

Theme 4: “How I get through”

This theme reflects strategies used by students to effectively manage or cope with their study. The sub-themes contained within this theme were written as “action statements”, reflecting the methods used by students to create conditions which would best support their studies.

The findings in Study 2 indicated that students use health-promoting behaviours to support their coping. As anticipated, students also used other proactive approaches such as time management, to best meet the demands of family, work, and study. In their discussion, students spent much time reflecting on ways in which they could rearrange or capitalise on their time and resources, to facilitate more time studying.

There were some central tenets around their conversations. First, the concept of time was central. Many strategies discussed by students were aimed at maximising their time to study, such as using moments within their day (e.g., lunchbreaks) to spend time studying. Besides often actively finding ways to maximise time, finding ways to spend time with family, was seen to be very important in coping. Some students talked about the need to be organised ahead of time, and for others, setting realistic expectations, given their busy lives, was considered important.

Secondly, many of the coping strategies centred on the need to manage stress levels. Finding better balance in their life was critical, which included spending quality time with family members and friends, participating in recreational activities,

and engaging in exercise. This indicates that health-promoting behaviours were part of students' overall coping strategies. Most commonly, students discussed how they used physical activity to reinvigorate, provide energy, reduce stress, and help them to think more clearly. Furthermore, students felt that behaviour such as physical activity facilitated better problem solving, and counteracted the sedentary effects of study. Engaging in exercise and recreational activities were also seen as a positive "reward" from trying to manage the many aspects in their life.

Thirdly, students' coping was enhanced when they could see an end point to their study journey. Many talked about the satisfaction gained from studying something which had interested them, and how this related to life and career goals. Having a long term plan and goal helped students to put study challenges into perspective.

Sub-theme: Being proactive and organising your time. This sub-theme reflected the forward planning required in meeting the needs of daily family life and making time for study. Particularly for female participants, there was an overwhelming sense of the need to structure in study time with the general busyness of their day, thus making family a priority. For many, their experience meant that study was intertwined as part of their life.

Study at times was opportunistic, and even the type of study tackled at certain times of the day was considered. For example, some students chose to do "heavier" types of study when children were absent or were in bed. This may be indicative of students' ability to effectively problem solve, by anticipating greater demands and distractions. It was important for these women too to have the psychological space and time to study. Moreover, structuring family or partner time to create more balance was also seen as important:

“During the day when the kids are at school I'll watch the online lectures and start assignments, but I really do my writing at night when the house is quiet. Anywhere from say nine at night until two in the morning, that's when I get the bulk of it done. If I've had a big day, like during the day, I try and you know, participate in the forums and all that sort of stuff, do emails, get a mind map stuff going on so I'm ready to go, when I sit down at night.” (Margaret)

“I don't study until 8:30 at night. When I get home at night it's about the children and about their homework and about dinner, dishes and spending time with them. Once they're in bed at 8:30, then it's my time to study.”

(Shelley)

Shelley and Bill each discussed practical and proactive ways by which they needed to “get organised” to reduce stress. This reflected the need to “forward plan” by anticipating the family's needs:

“You're constantly managing your time. I have to be really, really disciplined. So I shop fortnightly. I get everything for a fortnight, my milk, my bread, so I'm not ducking down to the shops and getting bits and pieces here and there and all my bills are done automatically online....if I have to do any running around for the kids or things they need, I do that in my lunch break.”

(Shelley)

“I cope with it [study] by planning. I'm a list writer. I'm hopeless. I've got to list things out. It helps me to picture what I've got to do. So I've kind of mapped out this next week.” (Bill)

Cassie felt that distance students, whilst not needing to be more organised, did need to be self-motivated with task demands:

“I don’t think you have to be more organised [as a distance student], it’s just that you can’t get away with not being organised... I can’t rely on a class or anything, I know I have to do the readings.” (Cassie)

Shelley’s comment below reflected the need to be flexible around family and to set limits, ensuring that she spent quality time with her husband:

“There are a couple of nights a week where I won’t study and that’s spending time with my husband when the kids are in bed. It’s all about balance and being very organised and being flexible. Because it might be, okay, well I’m going to do it on a Tuesday night and it doesn’t happen, but okay I’m going to do it Wednesday night. So it’s all balance.” (Shelley)

Given the nature of Fred’s work in a “fly in, fly out” position, he tried to structure the bulk of this study whilst away, to minimise the impact of study on family. In this respect, his study planning was premeditated:

“I actually try and get as much study done as possible when I’m away, so that when I’m home for a week, I don’t have to do anything. So I try and keep myself – I try and do four weeks’ worth of study in three weeks, so that when I go home I don’t actually have the pressure of having to study and I just spend time with my family.” (Fred)

Another strategy used to maximise the time studying, was to listen to online lectures in the car. This was to save downtime and reduce their computer screen time. Both Bill and Cassie used the time spent in their car to listen to online lectures:

“I listen to the lectures when I’m driving so I’m not just at the computer again just watching... when you’re listening online, especially if you’re driving, you don’t get the same visual content. Often they’re playing a clip or they have notes up on the screen which I can’t see when I’m driving of course.”(Bill)

“I have about a 45 minute commute, so I usually have my iPhone in and have the lectures on the iPhone. I listen to those and absorb it as I go along.”

(Cassie)

Jenny’s comment below reflects the strategic learning that may occur when being time poor; as such, she scans the discussion forums, looking for relevant information which may help with her assignments:

“I do online discussions... I don’t have time to spend as much time reading a lot of the discussions, but I will try and pick out the things that I need to help me along with my assessment.” (Jenny)

Cassie used her time at work to engage with her study material. This reflects students’ problem solving in trying to find more time:

“Usually I sit down at lunchtime, and eat my lunch and I’ll usually read whatever I’m up to in my book, or read an article for my assignment or something.” (Cassie)

Sub-theme: Having a clear sense of purpose. Students commonly discussed the fact that their study was something they were really interested in. This kept them motivated to continue their study. For most, studying was linked to a “bigger picture” of beginning new careers or work opportunities. Seeing an “end point” appeared to be important, so that when faced with challenges, they were able to put their struggles into perspective.

For some students, this enabled them to not focus so much on their stressors, but to consider that their end journey would be worthwhile. As such, many saw their study as part of a longer term goal to “get to where they want to be”. For some, the sacrifices and limits on their life, were seen to be part of “short term pain” for “long term gain”.

The fact that they were enjoying what they were studying and could see a clear purpose, was a motivating factor and kept them wanting to study. For most, this was an intrinsic motivation, whereas for others their motivation, in part, was due to a broader desire to provide better opportunities for their family:

“I guess part of it is thinking that I’m not going to stay in the job I’m in forever....I’m happy to stay there while I’m studying. I want to be in a job that’s fulfilling. I guess that’s what I’m hoping to come out of it.” (Cassie)

“It’s something I’ve always wanted to do and it’s tied in with work.” (Fred)

“I worked for 16 years at one place and then just decided that I didn’t want to do that for the rest of my life...Teaching was something that interests me.”

(Jenny)

“I’m a pastor on the Sunshine Coast. That’s more than a full-time job. But I just reached a point where I wanted to stretch myself a little further.” (Bill)

“These studies have given me an opportunity to step into the management role and to increase my income for my family and give us more opportunities.”

(Shelley)

For others, the motivation for studying was due to a sense of timing, or even urgency, due to getting older:

“Well, part of my philosophy is just that if you just sit around and wait until the other stuff is finished, then you will never get around to doing it. I’m facing being 40 when I finish the Honours, with my Masters or whatever. I’m thinking well I don’t really want to be much older than that.” (Cassie)

Sub-theme: Aiming to do well. Another aspect of students’ coping was feelings of academic success. When they felt they were doing well, they wanted to continue with their studies, and maintain or obtain higher grades. Some had high

expectations of achieving good grades. For some this meant greater pressure on themselves, for others, it was a necessary part of their motivation to try and achieve their goals. Academic success appeared to have a positive effect on their self-esteem, boosting their confidence and minimising thoughts of self-doubt. For example:

“I’m really happy so far. I got a HD in my first assignment. It gives you a self-esteem boost. I think I can do this, because I haven’t studied for 15 years or so. I’m not a perfectionist in that way but I like to do well.” (Bill)

“I always aim to get high distinctions or distinctions. Because it’s something that I really want to do, it’s easier to aim a bit higher.” (Jenny)

“That’s just put a huge big spark under my bum, which is excellent.” (Brie’s reference to receiving a mark of 98% in an assignment)

Another student commented on the positive encouragement she received from a lecturer after obtaining good results. This made her feel inspired to continue with her studies, and created a greater connection between her and academic staff. This highlights the extrinsic value of positive encouragement. This, in turn, contributed to positive self-regard, which positively affected her coping:

“...at the end of last semester I did quite well in one of my units and the lecturer actually wrote to me personally to say congratulations on your result. I’m like I’ve never had this before....I guess that gave me sort of connection. You actually feel like, well it’s really worth keeping going. Not because I did well, but because it was acknowledged. I’m like when you feel good about yourself, you feel less stressed and you feel like you can cope better and all this.” (Cassie)

Sub-theme: Finding balance. There were a variety of ways expressed by students to find better balance. These included spending time with family, or more generally, finding enjoyable ways to reduce stress levels:

“I coach my youngest son’s soccer team...having that helps having balance in life. Because it’s not like I’m just stuck in the study. I’m having fun with the kids. It makes you think better, or think about yourself a bit better.” (Bill)

Again, this comment by Bill reflects the underlying guilt around not always being able to spend time with family. Despite this, he took steps to connect with family members, by bringing a greater sense of balance:

“I would actually contribute some of my balance to the fact that I do help other people.doing that [charity work in the local community via the church] gives you a feeling of I’m doing something for people around me. That gives you a sense of balance.” (Bill)

Other students commented on the fact that because distance study was flexible and best suited to their family, this contributed to their ability to find better balance between study and family:

“Flexibility means that I am able to study. If I couldn’t do this course by distance, I wouldn’t be able to do it. It just wouldn’t be feasible for me to go to uni with two kids or even one child. So yeah, it means to me that I am able to study and follow a new career path.” (Jenny)

“Studying when I choose to study... it works around my family.” (Shelley)

For Bill, the need to balance his mental and physical health was important in his overall sense of balance:

“If I wasn’t focusing on mental and physical health, I wouldn’t be doing well, or I may even just have dropped out.” (Bill)

It was important for students to find ways to de-stress from the pressures they faced. In relation to health-promoting behaviours, students discussed the use of physical activity, stress management, or behaviours to promote positive spiritual health as important for their health and wellbeing. Activities such as going for a walk

were more indicative of active strategies, whereas others were passive, for example, watching television, reading a book, designed to help the student “switch off”. All of these activities were seen to be important in achieving better balance and to help maintain not only their physical, but also their mental health:

“If I get anxious about things, I’ll go for a walk. I can do some postures [yoga] and try to meditate, trying to alleviate the situation from that point of view.” (Brie)

“I like the garden. I’ll go out and if I’m feeling stressed, I’ll just say to my husband, hands are in the soil, and I’m off. That’s a good way for me to unwind. I’ll do that with a glass of red. I’m not a big drinker. I might have one or two a week, that’s it. But if I’m feeling a bit stressed I’ll get my glass of red and go and get my gardening gloves on and just garden. That’s my way to unwind.” (Shelley)

“I’ll play a computer game... or I’ll just do nothing and just watch a DVD and just try and switch off... or I’ll just pick up my book and read a book that has got me interested at that point in time.” (Bill)

Whilst students engaged in a variety of physical activities, most commonly, students went to the gym or for a walk. As in the previous sub-theme, some of the reasons for these behaviours were to keep the balance between physical and mental health, to de-stress, and to enable better study focus:

“I do tend to make that [exercise] a bit of a discipline as well, because I’ve noticed the extra hours sitting at the computer. I don’t want to end up getting an over 40 gut. I’ve stepped up my working out. I’d probably [pre-study] once a week, go down and have a bit of exercise. Now it’s easily three times a week. That’s largely because I’m realising that I’ve got to keep that. I just

see that link between physical and mental as being a very strong association.”

(Bill)

“...when I get home from work I go for a walk and take the dogs and kids.

That’s 40-50 minutes chill -out time.” (Shelley)

“The gym thing is great, because it clears your head and you listen to music... then I feel like really pumped up to get into it [study] when I get home.”

(Margaret)

“Going for a walk in the afternoon, usually for a half an hour to 40 minutes would be the normal time frame. I was doing Pilates videos in the morning that was because that was all I could do. If I’m working on an assignment or just read stuff at uni, it [exercise] gives me an opportunity to think about it in I suppose a different environment. I find it really helps me clarify what’s going on and how to fix it as such.” (Jenny)

Margaret used her physical activity as a reward for working hard with her study:

“I’m doing scuba diving lessons in a tank. Because I don’t drink or smoke or have a life outside of doing all this stuff, so that’s my big splurge. I use it as my reward, my pay-off for working hard.” (Margaret)

Maintaining positive spiritual and social health was important for some students. Finding solace, or the need to feel connected or grounded, appeared important in maintaining these aspects of students’ mental health:

“If I am feeling like a few things are going on top of me I practise Buddhism. So I go out to the Chenrezig temple and that’s my happy place”. (Margaret)

“I’m a pastor and I also have a spiritual side of life. I find that element of my life as being something important and stress-reducing.” (Bill)

Whilst some of these comments may be consistent within religious or spiritual contexts, Brie’s comments indicate that other connections may be possible.

“I’ve got an interest in body harmony, which is a form of massage work or body work. It’s very much about listening again to people, but listening with all of your senses and listening to the person’s tissue.” (Brie)

Sub-theme: Placing importance on health. In Study 2, students did not directly refer to the value of their health; rather they described the importance of having good health. Some discussed their health as a “resource” which enabled them to function in life, work and study. Health was generally related to either physical or mental health.

Some students talked in detail about how important their health was to them, however for others, this was secondary to many other priorities in their life. All students generally acknowledged that having good health was a positive notion. Mostly however, the importance of health was related to their overall functioning, in which having good health enabled them to fulfil their roles as employees, parents and students, which therefore helped with their ability to cope. Having good health therefore, appeared to be an important precursor/enabler for tertiary study.

For some, health was expressed as a higher priority, and when this was the case, these students tended to be more proactive about engaging in activities which were supportive of their health. Some described this process as being health conscious, which involved regularly “checking in” or “being reflective” of their health, and tailoring their behaviour to manage demands placed upon them.

For other students, the low importance placed on their health, was reflected in their lack of discussion of ways in which they actively supported their health. The students’ comments in this theme supported the fact that placing a higher value on health had a relationship with engagement in health-promoting behaviours.

The following examples provide an illustration of students’ view of the importance of their health:

“I think about it [health] a lot, because I have to keep up... with five kids and two little kids, I’ve got to be on top of it.” (Margaret)

“I think one of the reasons [to have good health] is if you have bad health you fall behind in uni, it’s so hard to catch up. It’s so easy to fall behind and it’s so hard to catch up. If you fall one week behind, it takes you two weeks to catch up...it would add extra pressure on you to try and catch up. So I think having good health, as long as then you do your unit as you’re meant to, definitely helps.” (Jenny)

One student discussed the importance of having good health as you became older and the fact that health may not be experienced in the same way as when they were younger:

“I think it’s more important the older you get. It’s probably just as important when you’re young, but you can get away with it when you’re in your 20s. You can do an all-nighter, have a sleep and then you’re right the next day. You can’t do that when you’re 30. You just don’t bounce back as fast really.”

(Cassie)

Having good emotional health was deemed important by Brie, who felt that this was not only important for overall wellbeing, but also as a prerequisite to embark on a career in the human services field:

“If I’m not healthy then I can’t do anything. I don’t have the motivation. I’d rather sleep or do something else, watch TV or get into the garden. So yes, I need to be fit and healthy to undertake this career; most definitely...it’s really good to be emotionally balanced.” (Brie)

Being “health conscious” appears as a common idea from students. This concept is more akin to the concept of valuing health, examined in Study 1. Students

described health consciousness as the need to look after their health. This was represented by the types and extent of behaviours that students engaged in to maintain their health.

For some, being health conscious had already been a prior behaviour habit or routine, which had continued when study commenced. For others, the start of study resulted in their taking a healthy approach. In addition, for some, existing health issues or the presentation of new issues required them to reflect on the impact of study on their health, which resulted in the beginning of a change:

“I’ve always been really conscious of health and I like all the natural therapies and everything to do with health. I get health books sent to me regularly...I’m very health conscious with eating... We do eat really healthy. I take multivitamins and I’ve been taking Vitamin B for stress, because I figure I need that.” (Shelley)

“With eating it [study] probably adds a little bit of snacking in which I’m a bit wary about, because we’re pretty health conscious...I’m a bit of a health nut...I’m concerned about my eyesight more than anything else. I don’t mind if I get a bit fatter. It doesn’t really matter. I don’t want to get obese and I don’t think I ever will. I carry my weight very well. I am very conscious of what I eat. So what I think was, last semester with the whole unit of things, getting a little bit more into comfort foods, like having biscuits and cookies and cakes here and there. So I’ve cut that out.” (Bill)

In Fred’s case, he had recently become overweight, and was subsequently advised by his doctor to reduce his weight. This resulted in his recent change in eating habits and increased exercise, resulting in a renewed interest in his health. In this case, his motivation for needing to improve his health was due to an

extrinsic factor:

“The doctors told me that I have to, so I’ve got no choiceI had to because the doctor said that if you don’t lose some weight, you are going to get yourself into serious trouble....Since then I have lost 25 kilos. It was made easy to do, I’m only doing one subject over semester three... The crunch will probably come next year in semester one when I’m back doing two subjects.”

(Fred)

The importance of maintaining positive mental health was very important for Cassie. Cassie was cognisant of the need to set limits, so as not placing herself at risk of mental health problems. She had experienced high levels of stress during a previous degree, and did not want to repeat that experience. In this respect, her mental health was something that she valued and placed importance on:

“I’m more conscious of it [mental health] now because I had a couple of stress-related illnesses. Not to push myself when I get to that point.” (Cassie)

One way in which she aimed to reduce her stress, was to dedicate as much time as possible to her study. This as a result, was a conscious decision not to spend time exercising, rather spending more time on study:

“I’ve pretty much been studying on and off for six years... I have made that conscious decision at times, like I will not go to the gym because I need to study. Again, it’s sort of like time is really precious. So trying to use whatever time I’ve got for the greatest gain...” (Cassie)

Sub-theme: Being realistic and flexible. It was important for students to be realistic and flexible in their approach to responsibilities, and their division of time. This involved setting realistic expectations about their ability to get things done. Part of being realistic appeared to be related to previous life experiences:

"I have pretty high expectations of myself and I've had to learn that I can't be perfect in everything and if my studies are done, my house is not done."

(Shelley)

"....not beating yourself up. I'm working and yeah, I'm a mum, and I'm studying and there's only so much you can do in a day... It's all about balance and being very organised and flexible. Because it might be okay, well I'm going to do it [study] on a Tuesday night and it doesn't happen, but okay I'm going to do it Wednesday night. So it's all balance." (Shelley)

"I think also I'm a mature-aged student now. I'm more confident to say I actually need an extension... It's okay not to be coping." (Cassie)

Margaret's previous experience with her dying mother, helped to put her study stress into perspective:

"I try not to let things stress me, because I nursed my mum through a terminal illness. It really gives you [perspective], like what am I worrying about? I've held someone's hand when they died and that rocks you to your core. So I can sort the rest out" (Margaret)

Sub-theme: Seeking support from others. Another way students coped was to create opportunities to gain support from others, whether this be fellow students, or family and friends. Sometimes this was designed to create a sense of connectedness, emotional support or simply to provide practical support with assignments. This support occurred face-to-face or online:

"I've been quite lucky in that a few other girls were studying distance who I connected through a Facebook group...They've been really good support in that they are also studying by distance and have that experience and that's been good just from, I guess an emotional support point of view rather than

necessarily a study help point... for the most part it's just knowing somebody is out there, along the same sort of journey." (Cassie)

"I do have a mate here who's just started the same course. So I have contact with him and so we can kind of be study buddies in terms of we're only sharing one subject at the moment, but at least we can kind of compare notes." (Bill)

"There's a Facebook page that I'm a part of, which I don't contribute to, but sometimes I read." (Jenny)

Friends and family provided important practical and emotional support. For some students, friends proofread their work; others asked friends and family to help them to maintain their house or care for children:

"I've got some other friends that I've worked with over the years, and if I need an assignment reviewed, I'll flick it over to them...even though they don't have any real knowledge on what I'm writing, they can actually give feedback or comments." (Fred)

"I have my best friend Susan... She's a teacher, so I get her to proofread my stuff and give me a girl hug when I need one." (Margaret)

In other cases, friends and family helped with practical support whilst studying:

"My husband, does shift work, he helps out with the house and stuff. I occasionally pay my sister to come in and do things like windows and fans and things that I'm just not able to do at the moment." (Shelley)

"My husband's really good. Sometimes I'll walk in and he'll have dinner and a glass of red for me." (Shelley)

"I've got a good partner, he'll come home and feed our eldest daughter and bath her and stuff if I need to do stuff." (Jenny)

Seeking support also extended to the academic environment. Students commented on a range of academic supports that they considered important for their coping. Academic supports were often described in line with good online teaching practices. Some of these included the use of live Wimba sessions, ensuring that students understood the weekly material, and the use of discussion forums. Examples of comments are illustrated below:

“I always participate in them. Whether there is marks required or not required. It’s one of the best ways that you can actually learn...that’s where the interaction takes place is on the forums, so that you can actually discuss what you’ve read.” (Fred)

“...this semester [the lecturer] did an online live discussion for external students. I found that good.” (Fred)

“One of the courses I did online, we had a weekly Wimba catch up with the lecturer. It was great; it was a really enjoyable course. Because (a) he made sure you were on the right track with your interpretation of the material and (b) we, just as people in the course, we got to talk about our experiences and what we got out of the week’s reading.” (Jenny)

Flexibility of extensions for assessment was also seen to be very important. Students felt that, given their typical circumstances of juggling work and family, it was important for academic staff to be sensitive to their needs. The ease and flexibility of obtaining extensions was core to their ability to meet these demands.

Distance students’ perceptions of the university in supporting their health and wellbeing

The second aim of Study 2 was to explore students’ perceptions of the role that the university may play in supporting their health and wellbeing. This included

eliciting students' ideas about who had responsibility for their health, and also the roles of the university.

Additionally, the second aim was to examine what students perceived could be ways in which the university could support their health and wellbeing. This aim firstly presents the findings in relation to the perceptions of the roles and responsibilities of the university, followed by the students' ideas of ways in which enhanced support for distance students' health and wellbeing may be achieved.

The third research question asked distance students how they perceived the roles and responsibilities of supporting their health and wellbeing. The findings began with students' perceptions of the university's responsibility for their health, followed by their perceptions of what they considered to be the main ways in which they felt the university should support distance students' health.

Student perceptions of the university's responsibility for health. In terms of student perceptions of who should be responsible for their health, there was an overwhelming sense that the university was not responsible for their health and wellbeing. The term "responsibility" appeared to evoke a strong response from students, which was communicated at times with strong language.

There was a clear sense that undertaking distance study was one's own choice and responsibility; however, students acknowledged that welfare and health services were important for the university to offer. The following comment was typical of most students' responses:

"I don't think they have to mollycoddle anybody, because ultimately undertaking any form of study, is an individual's responsibility. As adult students and distance education, the responsibility is up to the student, but you feel that the university can give us as much help as they are able to." (Brie)

Bill talked about the issue of physical strain and studying and the university's responsibility:

“My only hesitation with responsibility, is that I can't blame the university for telling me not to slouch. If I get a sore lower back, it's purely my fault not theirs.”

Commonly, students felt that the main responsibility of the university was to provide quality academic support, with other non-academic supports as secondary. Nevertheless, students did believe that the university had a major role in supporting students to cope with their studies, and some support in maintaining their health. The following themes reflect the main ways in which students felt that the university played a role. Both preventative and reactive approaches were evident within the students' comments.

Health information and advice. One of the key ways students thought the university could support their health and wellbeing was providing health information and advice. These ideas often centred on issues to do with physical health, such as reducing physical strain, getting more active and eating well, or generally how to maintain balance in life. This information could be provided on the Student Services website, embedded into students' Study Desk, or students having access to specific online programs.

Whilst some discussed this information in general terms which would benefit all students, regardless of study mode, others felt that some messages needed to be tailored specifically for distance students. These messages needed to reflect and acknowledge the demands often faced by distance students, taking into account their stage of life, as well as the sedentary effects of study. These excerpts were indicative of students' comments about the type of health advice and information that should be provided to distance students:

“Maybe meditation skills... with eyesight [related to physical strain with using the computer], and nutritional information.” (Brie)

“Offer simple advice to students... don’t say you need to weigh this... give them some simple strategies...going okay you might be putting on weight, but how can you manage that?” (Bill)

“It would probably be a helpful thing at the beginning of semester to say, ‘here are some ideas of how to improve your study’. ‘Get up every half hour. Walk around for five minutes. Get some water. Sit with your back upright’. It sounds kind of stupid but I know it actually makes a difference.” (Bill)

“Try like drinking more water, or try taking time off for exercise.” (Jenny’s advice for distance students)

“I think putting the information out there is good, because you can get caught up in the uni thing and lose balance.” (Margaret)

One student put forward the idea that when the university presented advice for distance students’ health, these should be framed as “productivity hints”. He felt that the usual methods of convincing students to look after their health may not always be successful, unless you tailored them as tips to enable them to study better:

“It would be a helpful thing at the beginning of semester to say, you know what, here’s some ideas of how you can improve your study...Perhaps they do have a role in saying we’re forcing you to sit at a computer for so many hours a week, so it’s perhaps our role as well to give you some health hints that will keep you in shape while you’re doing that.” (Bill)

Cassie discussed the idea that having information sheets on the impact of study on relationships could help students. This could include information about warning signs to look for, or advice on how to support positive relationships whilst studying:

“Maybe from a preventative point of view, this is how it [study] could affect relationships. These are some of the things you could try and that could help.” (Cassie)

Despite these ideas, few suggestions were offered in terms of how best this information could be delivered, which would result in their accessing or utilising the advice. Providing regular prompts via emails, or embedding messages into courses, were the two main ideas. Bill suggested providing information through the students’ existing UMail account, which if used as prompts, could result in students self-checking as to whether they had engaged in any activity since the last email:

“If they gave prompts – we all live our life through the UMail pretty much...most people are checking their UMail a few times a week if not a few times a day...if there were prompts every couple of weeks going, ‘have you done any exercise since our last prompt?’ It might be enough to make you go ‘oh yeah,’ maybe I should take my dog around the block or my dog for a walk, run with the kids.” (Bill)

Whilst Brie felt that information giving is already provided, he also felt that it was the student’s individual responsibility to undertake their own activities to maintain their health whilst studying. He did, however, believe that the university played a role in communicating the importance of maintaining good health:

“I know that the university offers a lot of different things that students can attend on campus. But off campus obviously can’t ...but maybe the university for online students need to make some kind of point about the importance of a distance student undertaking some of these activities...” (Brie)

Brie’s comment below though, reflects the dichotomy between being responsible for your own health, and others also playing a role. Beyond individual

responsibility, he also felt that the university could play a greater role in embedding health messages and strategies to help reduce stress within courses of study:

“I think maybe, like within your study materials there could be a little bit more messages and maybe even some guided meditations...so we’re going to sit down and do a tutorial on our assisted guided mediation about relaxation...so it’s not something you go looking for outside of where you’re looking, where you’re mainly focusing.” (Brie)

Many felt that the existing system of information and advice from the USQ Student Guild via online emails provided some health information; others however, whilst knowing that the information was there, did not always avail themselves of it. Moreover, some discussed the challenges for students receiving too many emails from the university, which resulted in “email overload”. If students did not perceive that an email was relevant to their studies or course, then they were more likely to delete the email or not open it. Some students did, however, acknowledge the effort by the Student Guild to provide this information. The following excerpts provide an example of comments about the Student Guild:

“They’ve posted a number of things. I get the emails about health tips and things.” (Brie)

“We had candle making and I know that’s a part of uni. They did yoga stuff. They [Student Guild] organised netball teams. I miss the socialising.”

(Margaret, discussing her experience of when she was an on-campus student and the array of recreational activities provided by the Student Guild).

Margaret’s comments reflect on the recreational benefits of on-campus study, which she felt like she was missing. Not having this as a distance student, infers that she was not feeling part of the university, and therefore affected her connectedness with the university.

Support services. This sub-theme reflected students' awareness and knowledge of support services, or lack thereof, provided by the university. Many were aware of the fact that USQ offered counselling services, despite none of the students accessing this service as distance students. Their perception of counselling services was only in relation to counselling for personal problems, rather than for the array of services currently provided. For Margaret however, she was uncertain about the range of services, plus not sure of how to access counselling from USQ campuses. For example:

"I know there's counselling and stuff, but that's all I know of. I haven't really looked. If I needed something I would be proactive in looking...It's okay for them to offer it, but how do we access it? Like for me to get counselling, I am either going to Hervey Bay or to Springfield campuses?" (Margaret)

"As far as the student support services, like outside of the subjects, I guess I'm not really aware of what's on offer. But that's probably not the uni's fault. It's probably on their website and I just haven't looked it up. I tend to find I'm doing okay with subject to subject help....I guess there's counselling help and all that sort of thing offered." (Bill)

Most students discussed the fact that they had their own support networks and that this would be their "first port of call". There was some reluctance from students about accessing counselling. This was particularly so for Bill, whose previous experience with counsellors during a family tragedy left him feeling very negative about counselling. There were mixed comments about how effective counselling might be at a distance from the university. Students felt that it was important to build a good relationship with a counsellor, and as such, they felt it would be best facilitated face-to-face. For most students, they saw the role of Student Services as being to provide preventative, rather than crisis management support:

“Unless you get someone who’s really good, it can do more harm than good.”

(Cassie)

“I mean if you need someone on the end of the phone there’s Lifeline. Why reinvent the wheel? I don’t know. I guess if the university wanted to get involved, I think it would be more in preventative measures, rather than crisis management.” (Cassie)

Cassie’s comment reflected ambivalence around the university’s role in providing counselling services, but also highlighted the perceived role in preventative approaches. Cassie felt that the lack of closeness with the university experienced by distance students may be counter intuitive to the counselling process:

“It sort of needs to be much more personal from a distance point of view. The university can’t get personal – because they’re not in a position to. It really needs to be someone on the ground.” (Cassie)

Student support also extended to students at risk of “dropping out” of university, with some students commenting on the need for universities to take a personal approach, rather than an automated response:

“They should definitely make more than email contact, but an actual phone call.” (Bill)

Margaret discussed the need for the university to provide more academic support. This meant that for issues such as developing a PowerPoint presentation, technology staff could develop a visual tool to help students develop these skills:

“...whether they uploaded it on YouTube. They could get some of the tech guys to go on camera and start from scratch.” (Margaret)

Furthermore, she felt that academic staff could provide more specific assessment feedback, rather than providing just a mark:

“Even if they attached a file that was like a voice recording that you could play, because they can talk into the recording while they are marking it [assignment].” (Margaret)

Transition to study. The concept of transition involved two main aspects. Firstly, transition was related to settling in to a tertiary institution in general and incorporated elements of study skills, and time management, which included learning how to prioritise. Secondly, transition was perceived as the development of academic skills necessary to undertake study.

Students, who had previously been exposed to transition programs during on-campus orientation, felt that these were valuable and very positive. These students felt that this was an important aspect to the commencement of their studies, however they commented on the fact that no strategies appeared to exist for distance students. For example:

“When I first started uni they offered those courses [on campus] that you can go to. You know, they do like how to plan your day and how to read textbooks and different things. One of the things that the guy said, ‘with your day, you’ve got to plan your day. Put in what you eat, when you have dinner, your favourite TV shows, block that time out. If you usually do exercise put that in there. Then you fit your study around that.’ So that was really good.” (Jenny)

Cassie felt that the university could develop a welcome pack for distance students at the commencement of their study. This would acknowledge the unique transition for non-traditional students to distance study, and provide helpful tips:

“...maybe even send out an initial university welcome pack... acknowledging that you’re not just an 18 year old fresh out of school, and you have a life. You actually have these other pressures and we’re acknowledging that.”

(Cassie)

As part of her transition to tertiary study, Margaret completed an online test to determine her preferred learning approaches. She felt that by knowing how she best learnt, she was more effectively able to recognise the best study approaches that suited her. For example:

“It was a psych test to find out what type of student you were. Whether you were visual ...I think that we should do that or that it should be on study desk as an aid to students. I know it would be a lot of technical stuff, but if you knew what sort of learner you were, then you would work more effectively if you could identify how you learnt.” (Margaret)

Administrative issues. This was not a dominant theme in Study 2, although some ideas were noteworthy in relation to the administrative processes of the university and how these impacted on students. One student commented on the idea that having a longer time to drop subjects before a census date at the beginning of semester, would help those students who were not coping:

“I think you’ve only got like four weeks. Sometimes four weeks isn’t enough to know if you’re coping and by which point you’re locked in and you’re thinking I’ve already had to pay for this thing and I have to do it.” (Cassie)

Another student commented on the need for the university to have flexible support hours, particularly for those outside Australia:

“I think that they [the university] are going to need to make their office hours 24/7 so that people can get in touch by telephone.” (Brie)

Developing health partnerships outside the university. Some students discussed the fact that they could not access on-campus services, particularly recreational activities. They felt that there was potential benefit in the university developing partnerships with services in the local community, which could support their health and wellbeing.

Some discussed the use of existing counselling services, or even discounted prices for recreational or health related services. Others discussed the idea of having reciprocal relationships with other universities or services, so that distance students could access these more readily and at reduced costs:

“It’s not like you can drop into the uni health centre and speak to someone or see a doctor or something. You don’t have those resources available... maybe if the university had some reciprocal arrangements or something, to allow subsidised doctors.” (Cassie)

“I’m sort of thinking that we should get a voucher for you know, like the local TAFE and they have Computers for Dummies [courses].” (Margaret)

“I’m sure that there’s people out there... we call it being ‘povo’, even if you had like 50% of a dental visit or massage therapy, you know you would take advantage of some of those things.” (Margaret)

These comments reflect the fact that these services are not currently accessible by distance students; however the role of the university may facilitate students being able to more readily access services and goods which support their health. Margaret also went further to discuss other possibilities, such as receiving Subway vouchers, and even fundraising to raise awareness of health.

Discussion of Study

The first aim of this study was to examine the role of health-promoting behaviours within the context of distance students’ stressors, strains, and ways of coping. The process began by understanding the context of distance students’ stressors and strains. The stressors and strains that distance students experienced were related both to their social circumstances and the academic environment; however, most discussions centred on the challenges in juggling the demands of family, work, and study. Whilst discussions of students intending on leaving their

studies if “it all became too hard” did not feature in their discussions, they nevertheless experienced common frustrations and tensions as a result of their study experience. They did however demonstrate a sense of resilience to often overcome these challenges, and had the motivation to continue with their studies.

In relation to the first aim of this study, it was important to consider whether distance students experienced stressors, and if so, what types of stressors. This discussion presents key findings in relation to social and academic stressors and considers the impact these had on student health.

Stressors due to social circumstances. The findings in Study 2 revealed that commonly distance students faced stressors related to their social circumstances, for example, having to juggle the multiple demands from family, work and study. This confirms much of the previous literature about non-traditional students undertaking tertiary study (Gershuny & Rainey, 2006; Lowe & Gayle, 2007; Steele et al., 2005; Chur-Hansen, 2003). Whilst some of these stressors or challenges were ongoing and “just part of life”, at times unexpected stressors such as ill family members placed additional study pressure on them.

Stressors in the online environment. Students faced pressures engaging in an online environment. For some, studying by distance was a relatively smooth transition, whilst for others, issues such as the lack of computer skills meant that studying was challenging. Previous research indicates that online students do not always receive adequate orientation to the online environment, making transition to study difficult (Dzakiria, 2008; Forrester et al., 2005; Muilenburg & Berge, 2005).

The uncertainty of not always knowing how they were going, or having limited connections with peers and academic staff, proved to be additional barriers. Having to spend more time developing skills or “getting up to speed”, seeking help or support, or locating or deciphering information, meant that this all took away from

students' valuable downtime and caused frustration and feelings of helplessness.

Goode (2010) described the skills required for study as "invisible academic prerequisites" and stated that many students entering tertiary study were unprepared to face the digital environment (Goode, 2010). These academic stressors have been identified previously in the literature as common negative experiences of online students (Lee & Choi, 2011; Rudestam & Schoenholtz-Read, 2002).

Universities may be able to help students to develop time management strategies, such as using online timetables, which build in times for activities which support health, which in turn may support their ability to cope. Effective time management and planning skills may be helpful in buffering unexpected events which cause significant stress. Stress management strategies, particularly for part-time, non-traditional students, have been found to be critically important in positively affecting academic performance (MacCann et al., 2012). The use of online workshops related to time management strategies should also be available for students to complete in their own time (Lynch & Kogan, 2004).

As some students experienced difficulties with the online environment and teaching practices, the university could play a role in improvements which limit the frustrations experienced by students. Some of these related to more flexible arrangements with assignment extensions or online discussions, consistency with Study Desk layout, tailoring learning material best suited to the online learner, and ways to promote communication and connectedness with fellow students and academic staff. This is because those studying by distance often had multiple study commitments, therefore having study material available in advance for students would prove to be helpful. In addition, ensuring that learning materials were aligned with good online teaching and learning practices, again, may lessen student frustration and support engagement in learning material and environment. Creating opportunities for

positive social connections between peers and academic staff also helped students to feel connected and supported (Mayne & Wu, 2011; Boyle et al., 2010). Strategies such as learner centred forums, immediate feedback in online discussion forums and have a regular social presence could all be used as online teaching strategies (Joo, Lim, & Kim, 2011).

Impact of student stress on health behaviour. Students perceived that engaging in activities such as physical exercise took time, and time that they often did not have. As such, a lack of perceived time may be prohibitive to engaging in healthy activities (Ball, Salmon, Giles-Cortin & Crawford, 2006; O'Kane, Craig, Black & Thorpe, 2008; Yeats, 2010).

Another finding from this study was that some students placed higher importance on meeting family demands, rather than considering their own needs. Study 2 has found that students tried to balance multiple tasks throughout the day. These findings indicate that engaging in health-promoting behaviours is dependent upon how students perceive their time constraints.

These findings may have several implications. Firstly, as students may often experience being time poor, the promotion of these behaviours needs to consider these demands, therefore strategies or messages need to be tailored accordingly. For example, promoting quick and nutritious meals or participating in incidental physical activity (taking the stairs at work rather than a lift) may be more beneficial to promote to this cohort. This information could be provided as electronic pop ups to students via their Study Desk environment, provided on the Student Services website, or in a welcome pack as part of orientation material to distance students.

Secondly, students may not place a high importance on health-promoting behaviours, given other constraints. Some may not see the need or the importance of these behaviours in their ability to cope or reduce stress. This may mean that these

behaviours may need to be promoted as important “stress busters” or as making study time more effective, therefore having the potential to save time in the long run.

With respect to student strains, students discussed how the effects of study and life demands impacted on their health, including their engagement in health-promoting behaviours. The most common strains experienced by students were mental exhaustion, physical strain, and relationship/role strain.

Mental exhaustion. Mentally, students felt “drained” at the end of their week trying to cope and juggle aspects of their lives which were partly attributable to study. At times, study contributed to anxiety and feelings of mental exhaustion. The concept of mental exhaustion has been highlighted in other studies with university students, and can be related to study demands, or in combination with work and family and can be a sign of burnout (Law, 2007; Morgan & de Bruin, 2010; Pomaki et al., 2007).

When students felt mentally exhausted, this appeared to inhibit their engaging in health-promoting behaviours such as physical activity, or taking the time to cook nutritious meals. This appears consistent with previous research, which has found that feeling emotionally exhausted can inhibit engagement in physical activity (Peterson et al., 2008; Pender et al., 2011).

Thus again, promoting time efficient healthy activities may be beneficial to distance students. In addition, promoting strategies which may re-energise students, for example, getting enough sleep and engaging in physical activity, should also be considered. Strategies such as an online program titled “Project Fitness” developed by Moore, Werch, and Bian (2012) could be used with distance students to improve engagement in healthy behaviours and decrease health-risk behaviours. Encouraging students to structure recreational down-time is also important in promoting positive life balance and wellbeing (Trenberth, 2005). Moreover, promoting positive mental

health strategies for students is important, as well as providing information about where and how to seek help if they feel overwhelmed (Stallman, 2012).

Physical strain. Physically, the pressure to meet demands may also affect sleep, which could be a reduced amount of sleep or the quality of sleep. Therefore, promoting the benefits of sleep and good sleep hygiene practices would be ideal (Gaultney, 2010; Knowlden, Sharma, & Bernard, 2012), as well as supporting students to develop good time management and prioritising skills.

The sedentary nature of studying online also contributed to physical strain experienced by some students. This resulted in aspects such as eye strain and muscular discomfort, which have been reported previously as a complaint in university students (Hupert et al., 2004). Universities could provide ergonomic advice to students in an attempt to reduce the physical strain associated with online learning (see example in Appendix J), either via website information linked with Student Services or embedded as part of course material for distance students.

Relationship/role strain. Socially, study had an effect on some relationships. It was a challenge for some to spend quality time with partners and children, with students commonly discussing the challenges in trying to juggle study time with family time. Role strain in particular has been found to impact negatively on academic performance, with students needing to choose family time over study time (Gershuny & Rainey, 2006). Students may benefit from information and advice about ways to promote positive social relationships, identifying strain in relationships and how to avoid it, managing stress, and even time management and problem solving.

The second research question focused on the ways in which students coped and the role that health-promoting behaviours played in student coping.

Common coping strategies. Whilst the findings from Study 2 confirm this relationship, there were many coping strategies discussed by students, which helped

them to overcome challenges, or preventative strategies used to minimise stress. A key finding in Study 2 was that students often felt time pressured, therefore many coping strategies were related to maximising time. The challenge to juggle or balance aspects of their lives meant that strategies to find better balance were also central to their conversations. Coping efforts appeared to be aimed at reducing stress or pressures and lessen the likelihood of strain, which is indicative of coping being used as a buffer between stress and strain.

Commonly, students discussed strategies such as time management (including prioritising, problem solving and planning), reflection of life balance, setting limits, engaging in positive recreation time, and connecting with others. The benefits of developing these strategies with students have been reported previously, and can be part of specific interventions provided by universities (MacCann et al., 2012).

In addition, students discussed other positive cognitive thoughts, such as goal setting, having a sense of purpose, and being self-motivated. These findings indicate that intrinsic factors influence student coping. This may have implications for developing student strategies which promote positive problem solving, goal setting and time management, which have previously been found to be effective in promoting coping (MacCann et al., 2012; Lynch & Kogan, 2004, Beccaria, 2010; D’Zurilla & Nezu, 2007). Furthermore, studying something they considered worthwhile and interesting had a positive effect on students’ coping. Therefore, ensuring that distance students have ready access to career counselling may be critical to their coping. This could occur via phone counselling or online programs to support students in their decision making.

Encouragement and support from family and friends was also important for student coping, as well as positive encouragement from academic staff. This highlights that extrinsic factors can positively influence coping as well. Therefore,

encouraging students to develop and maintain positive social relationships is important. Students should be encouraged to access support from Student Services, particularly if students identify issues with social relationships.

Within an online environment, academic staff may be able create opportunities to build student-based social networks. Examples such as online ice-breaker activities, “online chat rooms”, the use of structured group work activities (Cameron, Morgan, Williams, & Kostelecky, 2009), and encouraging asynchronous and synchronous communication via forums (Forrester et al., 2005) can all be used to foster greater social interaction. For academic staff, the positive use of encouragement and personal acknowledgement of student achievement is also important to emphasise.

The role of health-promoting behaviours and coping. In Study 2, health-promoting behaviours (stress management and physical activity) appeared to be most commonly used to buffer the effects of stress and strain. This relationship has been previously reported in the literature (Pomaki et al., 2007). Of the health-promoting behaviours, physical activity appeared to be the most commonly used, with students typically going for walks or going to the gym. Typically, students engaged in these behaviours to reinvigorate and re-energise, which had the additional benefit of helping to focus better on their studies.

It also appears that behaviours used to decrease stress for some students, were linked to the importance they placed upon their health or general wellbeing, like fitness or weight management. This may have implications for university health promotion. Universities should promote these behaviours as a way of reducing stress, which in turn may promote better coping and study success, and moreover to generally help students to feel good about themselves.

Furthermore, whilst many students saw the importance of having good health, this was largely in relation to their needing good health to function every day, including the ability to study. For those who placed a greater importance on their health, this was generally met with more engagement in activities to maintain or support their health, including active strategies to support their coping. Understanding this may assist those targeting interventions to students, to promote healthy activities which tie to one's ability to study effectively, rather than viewing healthy activities as "just important for health".

The types of health-promoting behaviours discussed by the participants were also noteworthy. In comparison with the Health Promoting Lifestyle Profile II measure used in Study 1, it became evident that students discussed aspects of each of the subscales, except for nutrition. Whilst some did discuss the importance of eating a healthy diet, the nutrition subscale of the HPLPII is more focused on aspects such as how often individuals consume fruits and vegetables each day.

The findings from Study 2 indicate a greater emphasis on the use of recreational activities to reduce stress, such as reading a book, gardening, or playing a computer game, rather than participating in regular moderate exercise. It was difficult to ascertain from students how often they exercised and to what intensity, whether light, moderate or vigorously. This is despite the effort by some students to engage in exercise, such as going to a gym, going for a walk, or exercising at home with their own gym equipment. Nevertheless, in Study 2, health-promoting behaviours were described as part of one's coping repertoire.

A key finding was that some students placed emphasis on the importance of maintaining spiritual health as a way of maintaining positive mental health; and others felt that being physically active was more important to their coping. Again, this may influence how these behaviours may be promoted in university settings. Promotion of

health-promoting behaviours should emphasise a range of strategies which are positive for one's health.

The second aim of this study was to explore students' perceptions of the roles and responsibilities of the university in supporting their health. There were mixed comments about what role the university should play in terms of health, coupled with a strong sense of self responsibility for health. Despite this, providing health information and advice, was considered a core way by which the university could support health.

In this study, distance students saw the university playing important roles in providing services and information to support their health and coping. In essence, these related to the transmission of health and wellbeing information, and the provision of support services for emotional, mental health or academic reasons. These findings support those of Dunne and Somerset (2004) who found that students perceived that the role of the university was to address health needs (including health-related lifestyle behaviours), provide assistance with adjusting to life at university, and to provide student support and welfare services (Dunne & Somerset, 2004).

Some of these supports are already provided by the USQ Student Guild and Student Services. Despite this, some students are often not aware of the range of services provided, nor know how to access them. This finding is supported by previous research with distance students (Dunne & Somerset, 2004; La Padula, 2003; Stallman, 2011; Ryan et al., 2010).

Providing services to students such as counselling, was considered important by some students, however for others, they were unsure of what they could access as distance students, or how to go about this. Some were also ambivalent about using counselling services without a face-to-face experience. Therefore, the university may need to consider the promotion and delivery modality for distance students. Overall

though, students felt that there was a need for both preventative support and services for dealing with student issues.

The fact that students discussed supports such as the need for information about aspects such as physical, mental and emotional health, as well as providing recreational activities in providing balance and coping, reflects students' holistic perceptions of how universities may support their health and wellbeing. The findings related to the lack of recreational activities, often provided to on-campus students, suggest that students studying by distance feel disconnected from these programs and in turn, potentially the relationship with the university. Recreational programs are often provided as ways to reduce student stress and help to adjust to university life, thus positively influencing student health and wellbeing (Brunette, Lariviere, Schinke, Xiaoyan, & Pickard, 2011; Wan-Chi, Ko-Chia, Yao-Shun, Chao-Ping, & Chia-Ming, 2012). In addition, programs such as online weight loss programs designed for university students could also be implemented (Harvey-Berino, Pope, Gold, Leonard, & Belliveau, 2012).

Given that this study involved distance students studying online, the inclusion of advice for students on the sedentary nature of online study, as well as the potential for physical strain, was also important. Given that eye and muscular strain may be largely preventable (Hupert, 2004), this is worthy of further consideration. Information about practical ways to reduce strain whilst studying from home could be beneficial to distance students.

In terms of general health information, students believed that this is important to provide, however, the methods by which students currently received this information appeared to be an issue. Given the student email overload experienced by many students already, this may mean that strategies need to be embedded or

incorporated into the students' Study Desk or content material, rather than seen as an "add on" only for those students seeking help.

Organisational factors also seem to play a role in student health and wellbeing. One of the main ideas was providing transition to study programs for distance students, whilst incorporating academic skills development. Best practice guidelines for higher education recommend, that transition interventions should occur even before the student commences their formal study. Some skills may be beneficial to learn prior to the commencement of their program, such as computer literacy, but they should encompass other aspects beyond academic skills, relating to personal and social development (Gale & Parker, 2011).

Forrester et al (2005) recommended that universities undertake an audit process of how they provide induction to distance students. They developed an audit checklist, titled "Start Out", which focused on aspects such as orientation to the learning environment, including tutor support, and administrative process in the university.

Interestingly, some students discussed potential opportunities for the university to form partnerships with others in local or regional communities. It was felt that this would enable distance students to access a far broader range of supports and services. For example, as distance students may not be able to access recreational services typically offered to on-campus students, arrangements to access other local community services could be arranged in partnership with the university, at a reduced cost.

Chapter Summary

The current data provides further insights into the Study 1 findings. First, students experienced significant time pressures in meeting their family, work and

study demands. A lack of time, and even feeling mentally exhausted, was perceived as a key reason for not being able to engage in activities such as physical exercise.

Furthermore, given students' demands, some students placed a higher importance on spending time with family, at the expense of looking after their own health and wellbeing. For those students who did place importance on their health, they did appear to engage in health-promoting behaviours, supporting the relationship between health value and its role in health-promoting behaviours, previously found in Study 1.

Students experienced stressors and strains, yet were focused on activities to study successfully. Aiming to do well academically was important for students, and despite their challenges, students in this study demonstrated their commitment to completing their studies. As many of them had achieved good grades, this continued to give them confidence and motivation to "keep going". This has implications for university health promotion strategies. Promoting ways to enhance coping skills, including staying motivated, can help reduce stress and strains, and positively influence engagement in healthy behaviours.

Secondly, whilst the findings from Study 1 indicated a large effect of coping attributable by health-promoting behaviours, in Study 2, the findings indicated that coping was also related to other factors. Health-promoting behaviours were seen as only part of their coping repertoire, and tended to focus on the use of recreational strategies to help cope. Therefore, promoting health-promoting behaviours within a university setting, should consider these within the context of a range of students coping behaviours. In addition, encouraging more "active" activities such as getting physically active and promoting its benefits with study, may also be warranted, given the tendency for some students to use sedentary activities.

Thirdly, this study indicated that distance students perceived clear roles of the university to support their health and ability to cope. Some of these services or strategies may already exist within the university, however these may need to be tailored more specifically towards distance students or promoted more widely. Additionally, influencing students' health may be in part, through enhancing students' coping. A number of suggestions were provided by students which to enhance coping, which has implications for services such as Student Services, Student Guild, but also administrative or academic staff in seeking ways to minimise common frustrations by students, and maximise engagement and create opportunities for study success.

The findings overall, suggested that health was not clearly delineated as a separate construct in students' coping. This infers that students perceive multiple stressors and strains, but also a diverse range of strategies which help them cope with their work, life, and study balance. All of these factors were intertwined, and therefore to improve or enhance students' health and wellbeing requires multiple strategies to address social and academic issues.

The next chapter provides an overall discussion of the findings from Study 1 and Study 2. A discussion of how these study findings contribute to the existing body of knowledge of distance students' health and coping are provided, as well as a discussion of the implications of the findings for the university. Finally, recommendations for universities to further support student health and coping are provided.

Chapter 6: Discussion

This chapter is structured around the key findings of the research and discusses how these findings add to the existing body of knowledge. It is argued that this research makes a valued contribution to the body of higher education literature, and also to the underlying theories. This chapter presents key recommendations, specifically for USQ, and more broadly, implications for higher education to support distance students' health. Furthermore, it provides an overview of the limitations of the research, and highlights areas for further research.

As identified in the literature review, one of the major gaps is seen to be the lack of knowledge about how distance students as a cohort might differ from on-campus students in terms of health behaviours, and student stress, strain and coping variables. The demographic and social differences already appear in the literature, with distance students, who are more often mature-age, studying part time, caring for dependants, in paid employment, and who usually have had a break since studying at high school (Coates & Ransom, 2011; Gershuny & Rainey, 2006; Hermon & Davis, 2004).

As previously highlighted in the literature, studying by distance may hold many advantages, such as allowing those in paid employment to further their careers (Rudestam & Schoenholtz-Read, 2002; Watts & Waraker, 2008), but it may also pose social and academic challenges. It is not uncommon for those undertaking distance study, to have experienced a significant break from previous study, or to be working to support themselves financially, or to have other social and family commitments, all of which placing demands on the student (Dzakiria, 2008; Gershuny & Rainey, 2006; Muilenburg & Berge, 2005).

Whilst there is literature about common stressors and strains experienced by university students, there is limited research about how distance students cope with their studies. Moreover, there is scant literature in relation to the role that health behaviours may play in distance students' stress, strain and coping. Of the literature that does exist, this is focused towards younger "traditional" on-campus students, largely outside Australia, with many interventions and supports aimed at addressing issues often related to health-risk behaviours.

To date, there has been limited research comparing on-campus and distance students in terms of health behaviours, student stress, strain, coping, and academic outcomes. In addition, there has been no research which has examined the role that health-promoting behaviours (nutrition, stress management, nutrition, spiritual growth, interpersonal relations and health responsibility) may play in distance students' coping.

As discussed in the literature review, health behaviours, whether risk or health promoting, have the potential to impact on academic outcomes, satisfaction with study, and students' intention to leave (Ansari & Stock, 2010; George et al., 2008; Trockel et al., 2000). Given that distance students are often older and juggling work, study and family commitments, it was important to identify key behaviours they engage in, and how these may be shaped by their study and social experiences.

The purpose of this research was fourfold: (a) to examine the cohort differences between distance students and on-campus students in relation to health risk and health-promoting behaviours, stress, strain, coping and academic outcomes, (b) to examine distance students' health risk and health-promoting behaviours and the relationships of these behaviours with stress, strain, coping and academic outcomes, (c) to explore distance students' perceptions of their study experience and health and

(d) to explore distance students' perceptions of the role of the university in supporting their health and wellbeing.

This chapter is structured as follows. First, key findings in relation to the examination of the relationships between health behaviours, and student stress, strain, coping and academic outcomes will be discussed. Next, the key differences found between on-campus and distance students will be outlined, which will discuss the findings based on both the MANOVAs and path models. The findings of the path model will be discussed in light of the qualitative findings which were aimed at explaining key findings from the students' perspectives. This discussion follows with key findings in relation to how distance students perceived the role of the university in supporting their health and coping.

Secondly, this chapter will outline key considerations to support distance students' health and coping. It will also outline the limitations and strengths of the study, as well as implications for theory and recommendations for universities. A table of the key research findings is presented in Table 43.

Table 43

Summary of Key Research Findings

 Main Findings

Health risk and health-promoting behaviours, student stress, strain and coping and academic outcomes

- Age was not found to be a significant factor across many study variables
- Psychological distress was found to be the most significant health-risk variable in terms of stress, strain, coping and academic outcomes
- Health-promoting behaviours were found to have small, negative correlations with academic outcomes
- Health-promoting behaviours were found to have the most significant positive relationship with student coping
- Health-promoting behaviours help to buffer the effects the stress of students

Cohort differences between on-campus and distance students

- Negligible differences between on-campus and distance students
 - Few gender differences – small effects
 - Health value higher in distance students (protective factor)
 - Lower levels of psychological distress (distance students)
 - Low levels of access to USQ supports (distance students)
 - More problem-focused coping (distance students)
 - More nutrition-related behaviours (distance students)
 - Regardless of study mode, health-promoting behaviours played an important role in mediating between student stress and psychological distress
-

Table 43 (continued)

Summary of Key Research Findings

Main Findings

Role of health-promoting behaviours within the context of distance students' stressors, strains and ways of coping

- Distance students experienced social and academic stressors and strains (time pressures discussed most)
- Appraisal of study stress was important in context of other life stressors
- Distance students used a range of coping strategies (largely proactive)
- Health-promoting behaviours were used primarily to promote spiritual health, reduce stress or gain more balance in life
- Physical activity, stress management and social activities were commonly used to buffer stress
- Having good health was seen to be important in being able to study

Distance students' perceptions of the role/s and responsibility of the university in supporting their health and wellbeing

- Individual self-responsibility
 - Roles of the university – provision of health and welfare services
 - Health information and advice e.g., work/life/balance, computer strain, relationships
 - Learning support to assist coping
-

Key Findings in Relation to Research Aim 1

The first aim was to examine the relationships between health risk and health-promoting behaviours and stressors, strains, coping, and academic outcomes. Of particular interest in Study 1, were the relationships between socio-demographic, general health, health risk and health-promoting behaviours, and student stress, strain, coping, and academic outcomes.

Previous literature had suggested that age was a key predictor in health behaviours (Arras et al., 2006; Eshah, 2010; Gill & Loh, 2010; Pirincci et al., 2008), stress, strain and coping (Forbus et al., 2011; Gerrard & Roberts, 2006; Gershuny & Rainey, 2006) and academic outcomes (Burton & Ropolo, 2008; Bye et al., 2007). As such, age was included as the main socio-demographic variable to examine in relation to other study variables. In Study 1 however, age did not correlate well with many variables, and where there were significant relationships, effect sizes were small. Demographic variables such as marital status, and hours caring for dependants and hours working in paid employment were also examined, however again any statistical significances were noted as small effects.

In terms of examining the relationships between health-risk behaviours, stress, strain, coping, and academic outcomes, psychological distress was moderately to highly correlated. This finding supports previous research, where psychological distress has been found to be associated with increased student stress and strain and decreased student coping (Bewick et al., 2010; Gibbons et al., 2009; Stallman, 2010). In addition, psychological distress had a moderate relationship with intention to leave, and a modest relationship with GPA. Not surprisingly, these findings indicate that the more distress a student experiences, the more that this negatively impacts on their

academic performance. In addition, increased distress and levels of stress are contributing factors to student attrition (Watson et al., 2009).

Interestingly, the current study found that psychological distress was negatively correlated with all health-promoting behaviours (nutrition, stress management, physical activity, interpersonal relations, spiritual growth and health responsibility). Whilst most health-promoting behaviours had small to moderate effects with psychological distress, stress management and spiritual growth had large effects. This result indicates that these behaviours in particular may be most influential in terms of reducing psychological distress and enhancing students' coping.

One of the most important findings from the current study was the relationship between health-promoting behaviours and student stress, strain and coping. Whilst all health-promoting behaviours were negatively correlated across all stress and strain variables, most notable were the large and positive effects of health-promoting behaviours with respect to coping. In particular, the most notable health-promoting behaviours in terms of coping were stress management, spiritual growth and interpersonal relations. With respect to stress and strain, health-promoting behaviours as group of behaviours had the largest effect on reducing personal stress, and their psychological/interpersonal strain.

This finding is supported by Moonmuang (2005) who found positive relationships between interpersonal relations, stress management and spiritual growth and reducing daily stressors in university students, although effect sizes were found to be more modest. Stress management strategies involve the recognition of one's own stressors and stress responses and the ability to find ways to relieve tension (Walker et al., 1995). As such, they are important in enhancing student coping, thus reducing study stress and strain (Galbraith & Brown, 2011; Stallman, 2012).

Spiritual growth is related to one's ability to feel balanced, to work towards goals, and have a clear purpose in life (Kane & Jacobs, 2010; Lee & Loke, 2005; Walker et al., 1995), and may be considered a wellbeing indicator (Lee & Loke, 2005). Hui (2002) found that as nursing students' level of stress increased, particularly when nearing completion of their degree, and facing clinical workplace realities, this reduced their behaviours in relation to spiritual growth. Kane and Jacobs (2010) found the active spiritual/religious beliefs and practices of students, were a positive predictor in overcoming psychological challenges. Having a sense of purpose, fulfilment, and satisfaction with one's choice to study, has also been shown to be a positive factor in helping students cope with the demands of study, and balancing family life (Ogunsiji & Wilkes, 2005).

These findings have important implications. Firstly, distance students' need to have access to adequate counselling programs, including personal counselling, career counselling and stress management interventions. This includes access to counselling either by phone or online. Supporting students to develop clear goals, including life and study goals, and develop strategies to help students achieve positive balance in life, can all enhance students' coping (Higgins et al., 2009). Secondly, the findings support the use of positive constructs, for example health-promoting behaviours, in researching the relationships with student stress, strain and coping, and subsequently developing interventions with students.

Another important finding from Study 1 was that health-promoting behaviours were only found to have small but negative correlations with intention to leave, and not GPA. In Study 1, the on-campus students commonly considered leaving their studies due to stress or health. For distance students, stress or health is in the top five reasons for intention to leave. This finding supports previous research where health

concerns are an important factor in attrition (Coates & Ransom, 2011; Kernan & Wheat, 2008).

This research therefore provides clear perspectives of the role of these behaviours within the constructs of student stress, strain, coping, and academic outcomes, particularly in the context of distance students. The focus of positive constructs of health, rather than on the influence of health-risk behaviours is seen as a major contribution to examining student health and wellbeing.

Key Findings in Relation to Research Aim 2

One of the major identified gaps in the literature is the lack of knowledge in relation to the impact of health behaviours on stress, strain and coping, and academic outcomes with respect to distance students. Distance students are often cited in the literature as being different than their younger on-campus counterparts, in areas such as types of stress experienced (Bennett et al., 2007; Carroll et al., 2009; Dzakiria, 2008; Liu et al., 2007), learning motivations (Bennett et al., 2007; McCune et al., 2010) use of coping strategies (Forbus et al., 2011; Heiman, 2004; Stallman, 2010; Steele et al., 2005) and risk of attrition (Angelino et al., 2007; Barefoot, 2004). Much of the previous research in relation to health behaviours, such as health-promoting behaviours, has been conducted on younger samples of university students studying on campus (Al-Kandari & Vidal, 2007; Haddad et al., 2004; Peker & Bermek, 2011).

In Study 1, these differences were examined in relation to the key study variables, and the effects of both mode and gender, using MANOVA. Gender has previously been found to predict engagement in positive health behaviours (Al-Kandari et al., 2008; Felton et al., 1997; Trockel et al., 2000), and therefore was considered important to examine for differences between on-campus and distance students. One of the notable findings from this research has been the negligible differences found between the two student cohorts. Despite some differences due to

mode or gender for on campus and distance students, only small effect sizes were noted. Intuitively, greater differences would have been expected across the study variables given differences in demographics and health behaviours reported in the literature, and found in the current study sample.

With respect to differences due to mode, the main findings were that distance students had higher levels of health value, engaged in more nutrition-related behaviours, and used more problem-focused coping than on-campus students. Additionally, distance students had lower levels of psychological distress and accessed USQ support less often than on-campus students.

With respect to health value, previous research has indicated that age positively predicts health value (Chassin, Presson, Rose, & Sherman, 2001; Jackson et al., 2007; Lau et al., 1986). Given that the distance students in this study were older than on-campus students, this may a possible reason for the higher value of placed on health. Most of the studies examining health value with university students have only done so with young on-campus students, and measure the construct of health value differently, thus making comparisons difficult (Jackson et al., 2007; Burris et al., 2009). Nevertheless, this research indicates that health value may be a protective factor for distance students. Therefore encouraging distance students to value their health and place importance on their health, in relation to their study is important. This may have implications for student services in encouraging distance students to reflect on their health and develop plans to care for their health whilst studying.

As distance students had slightly higher nutrition related behaviours than on-campus students, this may also be related to age. This was supported previously in Study 1 where age positively correlated with nutrition. Another possible reason for the difference could be that distance students in Study 1 were more likely to be

married. Al-Kandari and Vidal (2007) found that older married students were more likely to engage in nutrition related behaviours than single students.

In Study 1, distance students used more problem-focused coping than on-campus students. Given the demands typically experienced by distance students, it is not surprising that many choose to proactively seek support, or find ways to minimise downtime. Problem-focused coping has been found in the literature to positively predict health outcomes including psychological wellbeing (Gibbons, Dempster, & Moutray, 2011; Lazarus & Folkman, 1984; Park & Adler, 2003), and engagement in health-promoting behaviours (Moonmuang, 2005). It is often a key strategy used by older students to manage their studies and life demands (Bye et al., 2007; Haught et al., 2000). Therefore, this research indicates that strategies to enhance distance students' problem-focused coping must be developed.

In terms of psychological distress, distance students were found to have lower levels than on-campus students. This finding is consistent with previous research, where distress may be higher in younger students, and those studying in undergraduate programs (Stallman, 2010). As in this research, a greater proportion of students were postgraduate. This may be a factor in that these students have more study experience and may not be experiencing the types of transition issues commonly experienced by young on-campus students.

Despite distance students having less psychological distress than on-campus students, they still had moderate levels of distress. Therefore interventions aimed at preventing psychological distress, or reducing the likelihood of further distress, thus decreasing the risk of poor mental health outcomes or functioning (Stallman, 2012) should be considered. This may include greater access to counselling services, and strategies to promote mental health and resilience via their coursework.

Finally, distance students were found to use significantly fewer USQ support services, compared to on-campus students. This finding may be due to a number of factors. First, distance students may have difficulties in accessing supports typically provided to on-campus students. Concerns have previously been expressed in the higher education literature about the lack of services provided to those studying externally (Cameron et al., 2011; Forrester et al., 2005; Kember, 1995; Kwan et al., 2010; La Padula, 2003; McLeod & Barbara, 2005; Nichols, 2010; Rumble, 2000; Simpson, 2002). Secondly, they may have a lack of awareness of the range of services available, or a reluctance to engage in services, such as counselling.

In Study 1, differences between on-campus and distance students were also examined with respect to gender. Again, whilst some differences were noted between male and female students, the effect sizes were small. Of the significant findings, female students engaged in more frequent behaviours related to health responsibility, interpersonal relations and social support, but experienced higher amounts of lifestyle/financial stress than males. In addition, male students had higher levels of general self-efficacy than their female counterparts.

In the current study, female students were more likely to seek and use social support as a coping strategy. This finding is consistent with previous research, where females may be more inclined to discuss their problems with others, or visit friends to reduce stress (Forbus et al., 2011; Soffer, 2010). For male students, this may mean examining ways to encourage males to connect with others and create supportive social networks. Study 1 also found that lifestyle and financial stress was statistically higher in females than males. Lifestyle and financial stress measured aspects such as “*I feel confident in my home surroundings*”, “*paying the bills is of concern to me*”, and “*I am concerned about not getting enough exercise*”. The lack of confidence in home surroundings may be partly due to the challenges facing women studying in a

home environment, in prioritising family around study, and finding the physical space to study (Andrews & Tynan, 2012; Von Prummer, 2000). Other studies have also found that female students do get concerned about their financial stability whilst studying, which may be related to a reduction in their income or the need to gain employment to support their study (Hixenbaugh, Dewart, & Towell, 2012; Steele et al., 2005). One implication of this finding is that advice to students on how to reduce stress needs to address common concerns for female students.

As an extension of these important findings, the next research stage was to develop a theoretical model which would best explain the relationships between study variables. Of particular interest was which general health, health risk and health-promoting behaviours would best predict student stress, strain, coping and academic outcomes. In particular, the focus was on determining whether health-promoting behaviours would mediate between stress and coping.

A proposed model was developed initially, including on-campus and distance students (see Figure 10, Chapter 4), which was found to be a good fit across the two modes of study. The model (Figure 10) was then tested independently with on-campus and distance students (Figures 11 & 12). When variances were constrained between on-campus and distance students, the model was found to be the same and a good fitting model was still achieved (Figure 13).

One of the most important findings from this research is that health-promoting behaviours partially, yet strongly, mediated the relationship between stress and coping. An extensive review of databases (e.g., Academic Search Complete, CINAHL, PsycINFO), failed to reveal any previous research which has similarly examined the role of health-promoting behaviours in student stress, strain and coping in university students. Consequently, the development and testing of the model

presented as part of this research, is considered a major contribution to current research.

To date, there has been no other research which has examined these study variables together in a model, or tested the relationships with on-campus and distance students in Australia. Despite this, previous research has explored the relationships between stress, strain and coping with university students, and found that student coping does buffer the effects of stress (Chou et al, 2011; McCarthy, Fouladi, Juncker, & Matheny, 2006).

The implication of this finding is that existing strategies to support students' coping, should include interventions related to increasing engagement in health-promoting behaviours. These may include the use of wellness strategies and programs using online technology to promote these behaviours. It is therefore recommended that interventions are developed both as preventative strategies, and as ways of buffering the effects of stress.

A secondary finding of the model was that health-promoting behaviours were found to partially mediate the relationship between student stress and psychological distress. Previous research has supported similar relationships. For example, seeking social support has been found to mediate the effects of stress and feelings of burnout (Gibbons et al., 2009). Physical exercise and help-seeking behaviours may also reduce levels of psychological distress (Reaveley et al., 2012).

This indicates that health-promoting behaviours should be promoted as part of student coping. This in turn, may indirectly decrease the risk of psychological distress, which is important for student wellbeing (Stallman, 2012). It is recommended that health-promoting behaviours be focused towards enhancing student coping, rather than strategies to reduce psychological distress. This is supported by Ryan et al. (2010) who found that students with higher levels of

psychological distress were more likely to want to engage in online interventions, which included advice on workload life balance, and maintaining a healthy lifestyle.

The importance of the path model developed in this research is twofold. First, it provides evidence of the important role that health-promoting behaviours such as nutrition, stress management, health responsibility, physical activity, interpersonal relations and spiritual growth have with student coping. Secondly, the variables and paths which were found to best predict student coping and academic outcomes were found to be the same for both on-campus and distance students. This model could be refined and tested with other universities to determine whether the relationships found with the current sample could be replicated. Furthermore, this model may incorporate other variables to further develop a positive model of health and coping for students.

As discussed, intuitively it could have been expected that greater differences were found between the two cohorts of students. The strength of this research has been the robust testing of the two cohorts, which sets the foundation for new approaches to target strategies to support distance students' health and wellbeing.

Key Findings in Relation to Research Aim 3

The second phase of this research aimed to explore what stressors and strains were experienced by distance students, and what health promoting behaviours played in their coping. Given that the path model in Study 1 (Figure 13) found a large effect of health-promoting behaviours on coping, of interest in Study 2 was to ascertain how students used these behaviours to support coping. This discussion centres on the mediating role of health-promoting behaviours, between student stress and coping.

Student stressors and strains. Consistent with previous research about challenges facing distance students, study participants discussed issues in relation to the online study environment, the lack of social and physical connectedness, and a lack of computer skills (Andrews & Tynan, 2012; Dzakiria, 2008; Owens et al., 2009)

as all contributing to their stress. To address these issues, learning and teaching approaches to better meet the needs of distance students are warranted. Strategies including communication strategies such as email, embedded into courses to motivate and support students, use of peer-to-peer online mentoring, early interventions for at-risk students, online study-skills workshops, and strategies to improve computer literacy are all recommended in the literature (Boyle et al., 2010; Dzakiria, 2008; Lynch & Kogan, 2004; Turnbull, Royal, & Purnell, 2011).

With respect to personal stressors, pressures due to time were central to students' conversation. This is an important consideration in student retention as workload demands and difficulties maintaining a study/life balance are common reasons for students leaving their studies prematurely (Coates & Ransom, 2011). How students appraised their stress was dependent upon how stressful the situation was perceived to be. This finding is consistent with the transactional model of stress and coping, where how a person perceives a stressor in relation to their resources often predicts how they will cope (Lazarus & Folkman, 1984).

In terms of personal stressors, distance students may need timely and ready access to support, such as counselling, to help deal with their pressures. Secondly, distance students may benefit from support to develop and use effective time management and stress management strategies, and help in enabling students to be realistic with their expectations when it comes to balancing family and work with their study commitments.

In addition, academic staff could be more cognisant of students' time pressures. This may mean that academic staff should engage with students online using more flexible hours so that students feel less pressured. For example, after hours or scattered online discussions during the day, means that students can tailor their commitments more flexibly around study. Finally, if students are unable to meet

time constraints such as assessment deadlines, due to an ill family member, greater consideration for assignment extensions should also be considered.

With respect to strain experienced by students, physical strain was discussed most commonly. This was also supported by the Study 1 findings. In Study 2, students discussed spending long periods of time in a sedentary position, which resulted in discomfort, muscular aches and pains, namely back pain, and eye strain. Previous research has found that students can be at an increased risk of physical problems as a result of ergonomic factors, by not taking enough breaks or not engaging in preventative approaches (Hamilton et al., 2005; Hupert et al., 2004; Katz et al., 2002; Schlossberg et al., 2004). The sedentary nature of study and its impact on the physical symptoms associated with computer strain should be targeted as an area in which preventative messages are provided to students.

Whilst research has explored the prevalence of computer strain in students (Cortes, Hollis, Amick III, & Katz, 2002; Hupert et al., 2004; Katz et al., 2002; Schlossberg et al., 2004), there is little evidence of intervention programs designed for students, despite attempts to provide general web-based information (see Appendix J). It is recommended that future applied research consider interventions to alleviate the physical strain associated with online study. Furthermore, measures of student strain should seek to incorporate aspects of physical strain. Decreasing students' physical strain is important in reducing the risk of functional limitations (Hamilton et al., 2005; Katz et al., 2002; Schlossberg et al., 2004). Physical strain has also been found to compromise academic performance (Hupert et al., 2004).

Students also experienced psychological or emotional strain. These feelings were commonly described as exhaustion or feeling "brain dead". This is important, as feelings of prolonged mental or emotional exhaustion are commonly cited as a precursor or symptom of burnout within the higher educational literature (Morgan &

de Bruin, 2010; Pomaki et al., 2007; Stoeber, Childs, Hayward, & Feast, 2011). This tension between demands and resources can lead to students feeling overwhelmed, drained, and emotionally tired (Stoeber et al., 2011).

Web-based information could be provided on the USQ Student Services home page in relation to common signs and symptoms of burnout, embedded within strategies for work/life balance and stress management and accessing counselling. Furthermore, reflective checklists could be embedded into courses at key semester times, for students to identify signs of stress/burnout, with web links provided for support.

Largely, the distance students felt pressured to meet all of their demands. This also meant that they were constantly reflecting on whether their life was “in balance”. Literature related to work-life balance, and models and theories such as the Job-Demands Job Control Model and Life-Course Fit constructs, all emphasise the to and fro relationship between an individual and their social world, resulting in perceived tension (Greenhaus, Collins, & Shaw, 2003; Moen, Kelly, & Huang, 2008). In this research, finding balance was something that students had to “work at”, and did not necessarily come naturally. However, some students appeared better at being able to organise themselves, their work, and family commitments. Given that the ability to reflect, prioritise, and to consider ways to find better balance did not come easily for students, this may have implications for strategies which seek to develop these skills, such as work-life balance reflections during counselling.

Both male and female participants made adjustments to their study based on family. For example, female participants tended to discuss more readily their need to prioritise study around care-giving responsibilities. Whilst the act of study may be considered emancipatory for women, the fact that students sometimes struggled to find the physical and psychological space to study indicates that this remains a

challenge (Von Prummer, 2000). Listing all the things needed to be achieved during the day, or timetabling “heavier” or “conceptual” study when children were not present or had gone to bed, is testament to the issue of psychological space.

A lack of perceived time was a strain for students and for some this resulted in difficulties in maintaining physical activity. Some female participants discussed foregoing exercise for study, or spending time with family, so that they could spend more time studying. A lack of time is frequently cited as a common barrier for adults, particularly women, to engage in physical activity (Australian Bureau of Statistics, 2011; Ball et al., 2006; O’Kane et al., 2008; Yeats, 2010), and older women may engage in less activity than younger women (Kelsey et al., 2006).

Strategies to promote physical activity need to be cognisant of women’s family commitments, and include ways to maximise time, such as time management and timetabling. This is because some students will decide to forego physical activity because of the perceived time it takes out of their day. Encouraging students to engage in incidental activity or be active with their family, is an example of a relevant strategy.

Distance students’ coping. Distance students discussed many ways in which they coped with pressures and demands in their lives. Previous research has indicated that mature-age students may be more likely to use problem-focused coping (Bye et al., 2007) and use proactive approaches to their study. This may include “getting organised” with study materials and seeking study assistance from their lecturers and other support services (Bagana, Negovan, & Vanea, 2011; Steele et al., 2005; Wiesenberg, 2001). The results of the current study indicate that fundamental to students’ coping is the need to take an active or proactive approach to study.

Despite this finding, some students used less proactive approaches to cope, such as watching television. This form of coping is argued to be a negative,

characterised by avoiding situations, or not wanting to deal with problems (Kauser, 2010; Lazarus & Folkman, 1984). This means that students could benefit from developing more active ways to cope with stress, as passive approaches may not address the underlying stressor. Active strategies for example, may include engaging in physical activity to maintain healthy life balance or help-seeking behaviour for stress management to facilitate better coping (Kauser, 2010).

Having positive support, encouragement, and practical support from others, was identified as an important aspect of coping. Most students in the study had good support networks. Support in its broadest sense, was seen as practical assistance, such as help with babysitting, reading over assignments, and helping with housework, but also extended to emotional support. Utilising social supports is a positive predictor of mental health in university students, resulting in decreased stress and enhanced coping (Morgan & de Bruin, 2010; Steele et al., 2005; Tajalli et al., 2010).

Interestingly in Study 2, students' coping was also related to intrinsic psychological aspects. Students needed to feel confident and positive about the direction in their life and their ability to do well academically. Being motivated and having clear goals and career aspirations therefore also appears important for coping. This finding has been supported by previous research which has found that having clearly-orientated goals can be a protective factor against attrition (Carroll et al., 2009).

The concept of time was a critical factor overall in terms of student coping. Study participants commonly discussed feelings that their choice to commence study at that point in their life was the "right time". In addition, in terms of their career goals, students looked prospectively to the future. It appeared important for students to envisage an "end point" to their study or simply to imagine what their life would be like, once their study was completed. It is suggested that adults go through many

transitional phases throughout their life, and decisions made about one's future are often made, taking into account their perceptions of their multiple roles and current life circumstances (Greenhaus et al., 2003; Smart & Peterson, 1997).

Using a future time perspective (used in career counselling), may enable an individual to establish new goals and expectations, by engaging in behaviour change which connects with future goals (Walker & Tracey, 2012). To help cope, students will consider a "trade off" between current challenges, and the future prospect of acquiring a valued qualification, which they see as beneficial, both individually and for their family. This suggests that this ability to consider the future results in a "temporal shift from the immediate concern to the rewards that would accompany successful completion of a course" (Steele et al., 2005, p. 579).

Consequently, students evaluated a short term sacrifice as "being worth it" for a longer term future reward. Whilst this concept of "seeing into the future" was a positive construct for some students, for others, the pressure of time, particularly the perception of the need to complete study "before they got too old", was also salient.

The concept of time extended to students taking active steps to minimise downtime, enabling them to spend more quality time on study. Planning meals ahead of time, listening to lectures in the car, or using lunch breaks at work to catch up on study material, were all effective strategies. This supports the fact that to study successfully, students needed to manage their time effectively, plan ahead and look for opportunities to maximise time in their day (Lynch & Kogan, 2004; MacCann et al., 2012).

Whilst time may be considered as a positive construct for coping, a lack of time may negatively contribute to students' coping. Time also permeated students' tensions around needing a sense of balance. This process to some, although difficult, seemed to come more naturally. Students felt most "out of balance" when they

perceived that they did not have the resources either physically or psychologically to meet their demands. Greenhaus et al. (2003) stated that a notion of balance in which balance extends beyond a sense of time balance with an equal amount of time devoted to work and family roles, is an equal level of psychological involvement in work and family roles. Satisfaction balance has been defined as an equal level of satisfaction between work and family roles (Greenhaus et al., 2003). In Study 2, students also discussed having a sense of guilt around not being able to meet all of their demands. This is because they wanted to achieve more with their studies, but simply did not have the time. Interventions such as counselling to address guilt and helping students to set realistic expectations, is important in this context.

The role of health-promoting behaviours in distance students' coping.

This research found that distance students primarily used physical activity, stress management, including social activities, or behaviours to promote positive spiritual health as ways to reduce stress and create more balance in their lives. Behaviours such as physical activity have previously been found to moderate between stressors and strains, and contribute to reducing stress levels (Moonmuang, 2005; Nguyen-Michel, Unger, Hamilton, & Spruijt-Metz, 2006; Oswald & Riddock, 2007; Pfeifer, Kranz, & Scoggin, 2008; Pomaki et al., 2007).

Other than aiming to reduce stress, this research illuminated the fact that students perceived “getting active” as helpful in creating more energy, thus allowing them to think more clearly and focus more effectively on their studies. The students' strategies were also focused towards maintaining connections with others, the land, or with a higher spiritual being. As an example, one student recalled how she used gardening to help her manage her stress. Another student regularly visited a temple, which enabled her to maintain a sense of spirituality, which was effective in reducing her stress.

Therefore, when promoting these behaviours, it is imperative that strategies are not considered as an “add on”, but rather should be intertwined with students’ sense of balance, and ensure a life beyond study. This has implications for Student Services. For example, if a health promotion aim is to increase students’ physical activity levels, simply informing students about the importance of physical activity may not be as effective as embedding the idea of being active as part a stress management activity. Some students may be more amenable to ideas that will support their studies, rather than that which may support their health. In this instance, strategies which might be aimed at health and wellbeing may in fact be incidental to the importance of achieving well in their studies or completing their studies.

The time that some students spent with family, such as going for afternoon walks with children, was beneficial in maintaining positive relationships and facilitated open communication with family members. In addition, family members also played a role in healthy behaviours, for example, encouraging students to “get a massage”, to reduce their stress. This finding highlights the importance of interpersonal influences in predicting health behaviour (Pender et al., 2011). Therefore, in promoting health-promoting behaviours, the university should consider ways to increase the opportunities for online social interaction in the uptake of healthy behaviours. For example, this could encourage like-minded distance students to form networks and meet and be active together, or simply provide online encouragement and strategies.

The ways in which students see health in relation to their study is important. This was also highlighted in Study 2, when students discussed the importance of needing good health to be able to study well. Some of the distance students did appear to be motivated to be “health conscious” and were also motivated to obtain good grades. The sense of being health conscious appears similar to the concept of

health awareness discussed by Ansari and Stock (2010), where health awareness is seen as the extent to which “*you keep an eye on your health.*” Students who are aware of their health have been found to also place a high importance on achieving good grades (Ansari & Stock, 2010). In Study 2, having good health was important for life in general and was a necessary resource to be able to meet demands. For students this appears as a pervasive construct.

Overall, health-promoting behaviours were inextricably linked as part of the distance students’ coping repertoire. They were not central to students’ discussions, but were among many of the strategies or approaches taken to cope with stressors and strains. This was evidenced by the lack of specific strategies discussed by students. This could mean that students did not see delineation between strategies that helped them cope, and strategies which may be positive for their health whilst studying.

When used however, they were aimed at reducing the effects of stress or to create a greater sense of life balance. The importance that students placed on their health was a precursor to engaging in healthy behaviours. Therefore, encouraging students to reflect and consider the importance on their health in relation to their study, rather than health as purely an altruistic concept, may be more acceptable to students.

Key Findings in Relation to Research Aim 4

The final aim of the study was to explore students’ perceptions about the roles and responsibilities of the university to support their health and coping. In Study 2, distance students perceived that the main responsibility of the university was to provide academic support. As discussed in the literature review, one of the challenges in promoting health within a university environment is that the university may not acknowledge its role as a system influencing health and wellbeing by way of policies, practices and decision making (Baum, 2008; Byrd & McKinney, 2012; Doherty &

Dooris, 2006; Dooris, 2002). In addition, making changes to become a health-promoting university requires the development of a clear ethos which students should be able to identify with. Unless this is developed, students may not see clear roles and responsibilities for health and wellbeing by the university.

One of the main findings from Study 2 was that distance students perceived that their health was “their individual responsibility”. This is one of the challenges of health promotion, to find a balance between individual and broader social changes to improve health (Minkler, 1999). Whilst it is not denied that individual responsibility for health should be an important factor, it is argued that often health behaviours are influenced by broader factors such as the physical, social, cultural and political environment, and as such, often changes need to occur beyond the individual to influence health (Keleher et al., 2007; Linsley et al., 2011; Minkler, 1999).

Health promotion practice should be about working with people to enable change and encourage participation. It appears however, that distance students themselves have had no input into shaping supports, or providing feedback about their needs. In essence, distance students need the opportunity to feel empowered to contribute to building capacity for change. Facilitating change in a university towards a “healthy setting” requires a shift in thinking from largely individual approaches to incorporate a population based approach.

Despite a sense of individual responsibility, the distance students nevertheless felt that the university had a clear role to support their coping and health and wellbeing. This included the provision of welfare (counselling) and health services (medical), health information and advice (how to reduce physical strain, work/life/balance strategies), help with transitioning to online distance study, and having administrative processes which were supportive of students (i.e., having more flexible after hours support). These findings are consistent with previous research

(Dunne & Somerset, 2004; Ryan et al., 2010), and are also aligned with key principles of a healthy university model which is based upon a “whole of university” approach to improving health and wellbeing (Dooris et al., 2010).

Implications for Supporting Distance Students’ Health, Wellbeing and Coping

It is acknowledged that many strategies may support students’ coping. These may include the student’s own strategies, but may also require changes within the online and academic environment to support coping. The following recommendations are made to support students’ health, wellbeing and coping. An overview of current USQ supports and recommendations for distance students are provided in Appendix K.

Transition. It is acknowledged that the overall student experience is different between the modes of study, particularly in terms of the physical environment. It should not be assumed however, that distance students receive equal opportunities to access information and support. For example, on-campus students often receive orientation and transition to study sessions at the commencement of their study, including learning how to balance one’s time and study effectively (MacCann et al., 2012), and these could also be provided to distance students.

Transition strategies are often overlooked for students studying online or by distance. This may contribute to a lack of connectedness with the university and affect overall transition into study (Forrester et al., 2005; Hixenbaugh et al., 2012; Scagnoli, 2001). Existing on-campus strategies should be redeveloped in an online format (Dzakiria, 2008; Forrester et al., 2005; Muilenburg & Berge, 2005). Whilst some strategies such as online tutorials on how to use the library resources have already been developed at USQ, the students in this study felt that more could be done to help them transition more effectively to study. Engaging distance students in providing feedback about these supports, is arguably important for the university.

Further research could focus on exploring what distance students perceived to be important transition issues.

Rather than as a one-off process, transition strategies should consider how students settle into university, particularly within the first semester of study (Leese, 2010), or even prior to commencing study. Peer mentoring programs may also be effective in helping distance students transition to study (Boyle et al., 2010).

Considerations need to be made for the context of the student's program of study, for example, either undergraduate or postgraduate. Examples such as the "StudyLink" transition program developed by Charles Sturt University, could be adapted for distance students (Smith, 2009). Some suggest that online transition to study, can include aspects such as face-to-face orientation prior to commencing the course of study (e.g., short residential schools), "live help" sessions, and group formation with fellow students to encourage collegiality (Scagnoli, 2001).

In addition, given that students in Study 2 discussed many challenges in balancing work, family and study, it may be important to communicate the importance of setting realistic expectations around study. Whilst most of the students effectively problem-solved around this, it could be expected that other distance students may not have this experience. The students did indicate however that managing balance was a constant process, therefore any potential students may benefit from suggestions from those with multiple demands about study, work, life balance tips and how they successfully use them to continue with their study.

Overall the findings from Study 2 indicate that a range of strategies are required to support distance students' transition to study, which may in turn have the potential to decrease their stress and strain and support their coping. For example, some students in Study 2 discussed positive experiences with on-campus orientation

programs. It may be necessary for a blend of approaches which also extends beyond orientation to study throughout their program.

Online environment. Students in this study talked positively about the experience of studying by distance, however it was not without its challenges. For some, these challenges related to navigating the online learning environment.

Within an online environment, students discussed at times feeling that they lacked necessary computer skills for effective study, experienced a lack of social connectedness with other students, were sometimes uncertain whether they were on the right track, and had problems engaging with online material. This finding suggests that to address student stress, factors within the learning environment also need to be considered for improvement.

Developing computer literacy skills for online students is recommended as a necessary component in enabling students to succeed with their study and it may also decrease feelings of helplessness and may increase study confidence (Dzakiria, 2008; Leese, 2010; Ng, 2012; Owens et al., 2009). Furthermore, given that distance study involves online study, learning inventories to ascertain the readiness of a student to engage in online learning are likely to be helpful. Based on the inventories, students should also receive prompt feedback to enable them to incorporate this into their plan for study (Dray et al., 2011).

With respect to fostering online social interactions, there are many examples in the literature which provide strategies to encourage this (Dzakiria, 2008; Mancuso-Murphy, 2007; Mayne & Wu, 2011; Muilenburg & Berge, 2005; Sit et al., 2005). Evidence of this affective aspect is often seen via technology media such wikis, podcasts, and social networking sites to build social relationships, and to bridge the “distance divide” (Boyle et al., 2010; Mayne & Wu, 2011). Even within a course site,

academic staff can create activities such as online “coffee shops”, where students can connect with their peers without the presence of an instructor (Mayne & Wu, 2011).

The result of a lack of social connectedness or the affective component of study, can make studying by distance a potentially lonely experience (Forrester et al., 2005; Watts & Waraker, 2008). Opportunities for students to engage with each other either formally or informally, could be further enhanced within their learning experiences.

Students in Study 2 discussed the need for consistency between study desk sites to allow for ease of finding information. This requires academic staff and learning and teaching support staff to consider ways in which course material is presented online and across courses. Another frustration for distance students was that at times learning materials did not appear best suited to an online environment. Therefore, it is important to ensure that online course material is engaging, interactive and meaningful, if it is to enhance learning.

Finally, clear expectations and guidance as to how to be effective with time is also warranted. This means that academic staff may need to direct students’ focus towards key content areas or provide study tips to maximise academic success, and minimise unnecessary downtime. Having a more strategic approach to learning has been found previously with USQ students to positively predict academic success of distance students (Ballantine, 2008).

Student support. Some students in Study 2 discussed a lack of willingness to seek counselling “over the phone” with someone that they did not know, which may have implications for how USQ Student Services staff engage in counselling. Commonly in an on-campus environment, students can readily access student support or welfare services in times of stress or distress. Whilst most participants in this study

had good coping skills and were performing well academically, and as such their experience may not be indicative of all distance students.

In Study 2, students were not fully aware of what was available, had limited knowledge regarding how to access this support, or held negative perceptions of certain types of services, for example counselling services. Support such as counselling may need to be framed differently to make students more willing to access this service. This may mean that counselling services may need to be demystified, which requires communicating with students the role of counselling and different types of counselling support provided.

In addition, given that there may be key times of distress during the semester, if programs or strategies are designed to decrease stress or psychological distress, and aimed to build “mental health resilience” of on-campus students, distance students could also benefit from these same strategies throughout the year (Ryan et al., 2010; Stallman, 2012).

As previously highlighted in the literature, students are not often aware of the types of services typically offered by Student Services, nor how to access them, with distance students often not able to access traditional on-campus based services (La Padula, 2003; Stallman, 2008, 2011). Furthermore, previous research conducted at USQ by Student Services, has found similar results (Ballantine, 2008). Therefore ensuring that distance students are made more aware of existing services may require strategies to promote them, without overburdening students with excessive emails.

The lack of access also to recreational activities resulted in some students feeling disconnected from the university. This means that the university needs to consider more effective promotion to distance students about the existing services provided within the university. In addition, the university should consider ways in

which it can engage with local communities to increase the range of recreational activities on offer to distance students. For example, there may be opportunities to form relationships with fitness centres or adventure centres so that students can access these more readily and at an affordable rate. These types of strategies often require more holistic or even population based strategies towards supporting health (Stallman, 2012; Tsouros et al., 1998; Whitehead, 2004).

Embedding health strategies within the university. The findings from this research indicate that strategies to promote health need to be multifaceted. As Dooris (2002) states, universities should seek to “develop an appropriate policy context and provide a supportive environment that enables students to gain knowledge and understanding, to explore possibilities, experiment safely, and make their own informed choice” (p. 20).

First, it is recommended that Student Services or the Student Guild provide a wider range of advice and information to students about adjusting and coping with studies (which commonly reflect the experiences of non-traditional students), but also web-based information, such as reducing the risk of physical strain. It is also recommended that intervention programs be designed and evaluated in relation to distance students, for example, ergonomics and computer use.

Embedding health strategies should also extend to the learning and teaching environment. Whilst some of these strategies may already be provided by Student Services or the Student Guild, it is recommended that other ways of disseminating health or coping messages by embedding them into curricula or individual courses be explored. For example, interventions such as “the Desk” could be incorporated into courses which students can do at their own leisure.

In addition, strategies should take into account that not all distance students will be the same, and even that students could be at various life stages; the social

context in which their health behaviours occur and are shaped, should also be considered. This means that whilst this study found that distance students were often juggling multiple demands, it should not be assumed that this is the case for all distance students. Nevertheless, this research supports the notion that strategies should be more focused towards their needs and circumstances.

How to translate important key messages to students is noted as a key challenge for universities (Dunne & Somerset, 2004; Kwan et al., 2010). Strategies such as *curriculum infusion*, in which health messages are embedded into existing courses is one option. For example, arts departments being involved in tailoring choreography emphasising the issue of suicide prevention, or marketing students developing social strategies to promote mental health, can all be used effectively (Mitchell et al., 2012; Yearwood & Riley, 2010). In this sense, there could be existing opportunities to embed messages about the importance of good health and health-promoting behaviours within current educational programs, depending upon key stakeholder support. These types of strategies could align with other marketing or Student Services initiatives to promote health and wellbeing.

It is argued that strategies to improve students' health need to be developed in line with the ethos of the university, including the alignment of supports and curriculum (Dooris, 2001, 2002; Tsouros et al., 1998). As such, to improve distance students' health and wellbeing, will not be achieved by only providing health information and advice, nor should it be seen as only the domain of Student Services. Population based approaches such as improving mental health outcomes via resilience programs which are compulsory for students are also needed within universities. Critically, these programs need to be based on the needs of students and considered acceptable by the student population and have broad applicability (Stallman, 2011, 2012).

Furthermore, changes need to be made where “health” becomes part of core business. This may mean having dedicated staff whose role is to promote wellbeing and health within the university, and to develop collaborative partnerships from both within and outside the university, to drive the “health agenda”. Key stakeholder partnerships with academic staff, are critical, to ensure the sustainability and acceptance of interventions.

In addition, these study findings have implications for academic staff and administrative processes, which need to be cognisant of students’ commitments and constraints. This may mean considering changes towards more flexible assessment deadlines or extensions and easier online enrolment procedures. As such, improving students’ health becomes part of the academic environment as well as the welfare environment. Making changes to enhance students’ coping, should inevitably influence better health and wellbeing.

Programs and interventions to support coping. As the current research found that stress management as a health-promoting behaviour had a large effect on study coping, strategies to reduce stress in students is paramount. There are numerous suggestions in the literature about how universities can support students’ coping, with many of these interventions using online technology as a means of providing interventions and support. Often these programs are based upon strengths-based approaches, which often affirm skills, knowledge and supports.

Stress management programs and resilience programs such as a “*Staying on Track Seminar*”, developed by the University of Queensland, aimed at enhancing help seeking among university students, would be useful in helping to decreasing the risk of psychological distress and promoting positive mental health (Cress & Lampman, 2007; Stallman, 2012). The Staying on Track Seminar is a 90-minute strengths-based

resilience-building seminar, which has been developed for on-campus students, however could be modified for distance students.

In addition, other strategies related to improving time management and study skills (Eskin, Ertekin, & Demir, 2008; Lynch & Kogan, 2004; MacCann et al., 2012), problem-solving (Beccaria, 2010; D’Zurilla & Nezu, 2007), mindfulness or resilience training (Palmer & Rodger, 2009), cognitive behaviour therapy (Hamdan-Mansour, Puskar, & Bandak, 2009) use of online internet information sources (Heiman, 2008), and stress management strategies (McGrady, Brennan, Lynch, & Whearty, 2012) need to be considered. Furthermore, providing better links with external mental health providers (Ryan et al., 2010; Stallman, 2012) and making students more aware of existing university supports (Storrie et al., 2010) may also be helpful to students.

Study 2 highlighted that many students use proactive strategies to enable them to access support, problem solve, and manage their stress, and time. In essence, protective factors such as positive social support and having a positive outlook, enable students to keep going.

The ability to effectively problem solve has academic and social benefits. As such, enhancing problem-solving abilities should be considered. The ability to successfully problem solve has been found to be a positive factor improving academic performance and reducing anxiety and depression in university populations, and as such, problem-solving programs are important to improve student retention (Baker, 2003; D’Zurilla & Nezu, 2007).

The finding that distance students used effective problem-solving techniques, confirms the importance of this skill in coping. It cannot be assumed however that all students possess this skill, and therefore programs to develop problem solving may also be warranted for distance students. Examples such as the “*Problem-Solving*

Program” (currently used at USQ for on-campus students), may be modified for suitable application for distance students (Beccaria, 2010).

Stallman (2012) recommends that programs designed to reduce student distress should be embedded into curricula, enabling the students to receive timely advice, information and support. Examples such as “*the Desk*” and the “*Learning Thermometer*” are two excellent examples of how universities can support students’ mental health and wellbeing, whilst not requiring a large amount of staff time to implement (Stallman, 2012). The programs can simply become available to students, where students can log into a website, and be able to download free information and advice. In terms of “the Desk” this can be incorporated as a compulsory activity which students need to undertake at the beginning of their course.

Taking a proactive approach and embedding health advice into course material facilitates the notion of positive mental health, rather than reacting with strategies for those with a “mental health problem”. This may act to de-stigmatise mental health problems in general, and allow for much greater access to timely support (Stallman, 2012). Furthermore, “the Desk” already incorporates aspects of wellbeing and health-promoting behaviours such as strategies to “help make you feel good”. As such this intervention is recommended for use by distance students.

The promotion of health-promoting behaviours. Given that the issue of time was central to the students’ experience, any advice about how to engage more in health-promoting behaviours needs to reflect student’s lack of time. As such, students can be encouraged to consider ways to still be healthy, such as being physically active, despite being time poor. For example, tips can be given on healthy meal choices that take little time to prepare, or how to find incidental exercise activities during the day, like walking up stairs instead of taking a lift, may be most beneficial to students. Furthermore, taking the time to walk with children after school was a

good way to keep fit and a positive way to talk and debrief about the day, and to de-stress.

As indicated in the study, sometimes students felt more productive and eager to study by being able to focus more clearly after being physically active. These messages could be communicated with other distance students, to promote the benefit of exercise and study. Furthermore, integrating messages into existing curricula or having set programs which require little time commitment, or are flexible in attendance, by being delivered online, would be optimal for students.

In general, health promotion strategies developed for distance students should be acceptable to students, and appear relevant within their social context. In Study 2, distance students did not always feel that messages about their health or coping were targeted towards them, particularly as they were older students. This indicates that targeted interventions need to reflect and represent the students' demographics and life stages. In addition, online programs should visually represent students of different ages, and not simply "younger looking" students who they don't feel like they relate to.

Moreover, promoting healthy behaviours should be promoted within the context of study success or productivity tips. These could be presented from students, thereby acknowledging the power of social role models, and utilising the "voices" of other distance students as a key source of information. The advice could be embedded within online courses, or made available on the USQ Student Services website, as short vignettes or videos. Social modelling has already been found to be a powerful mechanism in health promotion with peers communicating health messages within a university setting (White, Park, Israel, & Cordero, 2009; Xiangyang et al., 2003).

The main issues that students in Study 2 felt should be addressed by the university, were related to physical strain associated with long term use of computers, work/ life balance information, stress management techniques, and healthy behaviours, such as nutrition and physical activity. This is consistent with Ryan et al. (2010) who found that most commonly, students wanted online advice related to work/life balance, time management and stress management.

This study found health-promoting behaviours influenced student coping. Thus, most salient is how these could be best promoted for distance students. Students perceive that a major role of universities is to provide health information and advice (Dunne & Somerset, 2004). For distance students, they believe that this advice should be targeted towards non-traditional students, juggling the demands of work, family, and study.

Advice or strategies for students should therefore be tailored to how students might best manage their time and achieve a positive life/study/work balance. Students should also be encouraged to reflect on the dimensions of their life and to seek support or engage in strategies to create a more satisfactory life balance. This could be achieved by using online programs such as “the Desk”, where students can receive study tips and take quizzes to flag issues.

Information for students needs to include work/life balance strategies, time management, the importance of good mental health, and how to foster healthy relationships, including an awareness of signs that might indicate problems. All can be represented as common issues for students often juggling multiple demands and time constraints. Furthermore, students also felt that it was important to provide general health information related to good nutrition and physical activity. In addition, it is recommended that “pitching” non-academic messages may be best tailored

towards the potential benefit of strategies, which may enhance distance students' study experience.

Distance students in this research, perceived that the main focus of universities should remain as supporting their academic needs. However, they felt that emotional or psychological support should be provided on a needs basis. It is recommended that academic staff remain flexible in their teaching approach particularly for students experiencing unexpected events which impact on their study.

There are many existing examples of programs or interventions which focus on strategies to increase health-promoting behaviours in students; however the majority appear to be related to primarily encouraging physical activity (Moore, Werch, & Bian, 2012; Sidman, Fiala, & D'Abundo, 2011). For example, Sidman et al. (2011) conducted a study comparing a face-to-face format and an online program for physical activity. This involved both online lectures and students keeping records of their participation in physical activity and flexibility activities. Online students watched presentations about physical activity and participated in an online physical lab. The study found no statistical differences in behaviour regulation between the face-to-face group, and online students. Other examples, such as healthy lifestyle programs for nursing students, currently in a face-to-face format, could have good potential for online applications (Yeh, Chen, Wang, Wen, & Fetzer, 2005).

In addition, wellness programs designed to promote healthy behaviours and positive coping may be beneficial (McGrady et al., 2012; Reger et al., 2002). As previously highlighted, "the Desk" incorporates aspects of relaxation strategies, and encouraging students to appraise their health, and to take active steps towards "feeling good" whilst studying. This, in fact, incorporates aspects of health-promoting behaviours within the program itself.

Moreover, it is recommended that programs integrate aspects of each of the health-promoting behaviours as found in Study 1, namely, nutrition, stress management, spiritual growth, health responsibility, physical activity, and interpersonal relations, into their programs. Given that distance students study online, strategies need to be developed in an online format. Previous research has indicated that up to 47% of university students were either likely or very likely to use a wellness program if designed online, and furthermore, students with higher levels of psychological distress were also found to be more likely to use this medium (Ryan et al., 2010).

Developing university partnerships to support distance students' health and coping. Finally, students in this study discussed the opportunities for the university to establish connections and partnerships with other local services or agencies to help support distance students' health. This may not necessarily mean creating new services, but may involve linking and promoting existing services within local communities or general information provided on existing Australian health websites. This includes greater opportunities for distance students to access other health or wellbeing services and recreation programs. Linking with external service providers has been highlighted as a key strategy in improving mental health outcomes for students (Ryan et al., 2010).

Implications for Theory

The initial focus of this research was not about theoretical development. The research began by considering the constructs found in both the health promotion model (Pender et al., 2011) and the transactional model of stress and coping (Lazarus & Folkman, 1984), to explore and examine study variables of interest.

A criticism of the health-promoting behaviour literature is that most commonly, not all variables within the health promotion model are used to explore

health behaviour. This is evident in studies such as exploring barriers to health promotion in elderly populations (Stark, Chase, & DeYoung, 2010), factors predicting complementary medicine use with women with female specific cancers (Eschiti, 2008) and in university samples, such as predicting physical activity (Maglione & Hayman, 2009).

Despite this, there is emerging research involving a more comprehensive use of the model, such as structural equation modelling used to explore the health promotion model (Mohamadian et al., 2011). Mohamadian et al. (2011) found that 71% of the variance in health-related quality of life of young Iranian adolescents was accounted for by variables in the health promotion model. One of the complexities of testing the model in its entirety is its complexity and large number of concepts involved (Pender et al., 2011).

However, on examining the interrelationships between student stress, strain, coping, academic outcome variables and health promotion variables, a theoretical model was developed and tested. As far as the researcher is aware, this is the only model that exists which has attempted to test these relationships for both on-campus and distance students combined. This theoretical model was not only found to be robust as a single entity, but was equally robust when comparing distance and on-campus students. The development of this model is considered an important contribution to existing research, as it considers those factors which are most likely to predict health-promoting behaviours, which in turn may predict student coping.

Student coping negatively predicted student strain and psychological distress. This has important implications for distance health and wellbeing in general, but also has relevance to understanding academic outcomes such as intention to leave and GPA. That is, strategies should aim to enhance students' coping to reduce psychological distress. Failure to reduce students' distress levels may increase their

risk of wanting to leave their studies prematurely, and may negatively impact on their academic performance. Therefore programs or strategies need to be designed to increase coping and decrease psychological distress, which in turn may lessen the likelihood of negative academic outcomes.

In attrition models, health is generally considered as a negative construct. That is, if a student's health is poor they may be more likely to leave their studies prematurely (Bean & Metzner, 1985; Tinto, 1982). This study, however, contributes new knowledge, using a positive construct of health. This research presented an alternative view of how positive influences, such as health-promoting behaviours, may in turn influence academic outcomes such as intention to leave and grade point average. Previously, attrition has largely focused on negative variables, such as poor health, to increase the risk of attrition (Bean & Metzner, 1985; Carroll et al., 2009; Coates & Ransom, 2011). Attrition itself has been cited as an important issue in distance education, with distance students being more likely to leave prematurely than their face-to-face counterparts (Angelino et al., 2007; Barefoot, 2004; Liu et al., 2007). It is recommended that future research consider building positive models focused on student coping.

In terms of the health promotion model, this research has found that valuing one's health is positively correlated with engagement in health-promoting behaviours. This finding was supported in Studies 1 and 2. The qualitative findings from Study 2 indicated that those students who placed more importance on their health, engaged in more health-promoting behaviours, and were more health conscious and/or aware of their health. This is supported by other studies which have found that health value is a positive predictor of healthy behaviours (Felton et al., 1997; Pender et al., 2011; Steptoe & Wardle, 2001).

Whilst not labelled in the original Health Promotion Model (Figure 3-1), health value appeared as the *Importance of Health* as a *Cognitive-Perceptual Factor* (Pender, 1997). Although tested in the original model, Pender (1997) subsequently re-evaluated and removed “Importance of Health” as a predictor of health-promoting behaviours as “participants in all studies ranked health so high as a value in relation to other personal values that without variance, this variable was not useful as a predictor” (Pender, 1997, p. 65). As the path model demonstrates, health value was a predictor of distance students’ engagement in health-promoting behaviours. It is argued, therefore, that this construct should be considered in other health promotion research with students.

Simplistically, if students do not value their health, or perceive it to be important for their study, they may not see a need to change their behaviour. This finding has several implications. Firstly, students need to see a connection between their health and wellbeing, and their study. Previous research has indicated that this is not always the case (Crossley, 2002; Dooris, 2001).

Students should be encouraged to actively reflect on their own health, thus beginning the process of making positive changes. Secondly, developing action plans to be healthier, should include goal setting. Students could be encouraged to set health goals, which inadvertently may enhance their ability to focus better and have more energy, which in turn, may help them to study more effectively. This may also be an opportunity for further research, whereby interventions designed to promote healthy behaviours in line with study goals, could be developed and evaluated.

With respect to the transactional model of stress and coping, this research has clearly supported the role of health-promoting behaviours as a buffering effect of stress. As found in the path model (Figure 13), health-promoting behaviours contributed to a significant variance of coping, which was identical across both study

modes. In terms of the qualitative phase of this research, the students' appraisal of their study stress within the context of other life stressors was an important factor in them appraising the extent of the stressors and also their ability to cope with them. This finding may have implications for student counselling, where students appraisal is an important step recognising and dealing with stress.

In addition, mature age students may benefit from having their experiences normalised with other distance students, which may occur more naturally for on-campus students. Furthermore, often students considered their study stress to be short-term, therefore perceived this as something which could be actively managed. Students' ability to cope was also mediated by their social relationships, which supports interventions to encourage and nurture positive supports.

Finally, the findings of this research may have implications for higher education in which academic factors within the online environment continue to contribute to stressors and strains faced by students. In terms of the health promoting universities model, these issues do not currently feature in any of the focus or processes areas (see Appendix B), yet are recognised as important factors which impact on the study experience. As an example, in the current research transition to the online environment was problematic for some students, which included their need to develop computer literacy skills. Failing to recognise and address these factors may continue to negatively impact on the distance students' experience.

In addition, the emphasis of the physical environment in shaping health would not be applicable for distance students; however strategies to support students' learning in their home environment (i.e., advice on decreasing computer strain) may be important to include in the model. Furthermore, focus areas such as mental health and wellbeing would be important for students. This could translate to impact areas which could measure the effect of the targeted programs to enhance mental health

(e.g., online problem solving or resilience programs). These could be evaluated in terms of whether these improved students' health and wellbeing and in turn decreased students' psychological distress levels.

Whilst overall the health promoting universities model is useful in conceptualising how to integrate and support health within a higher education agenda, it may be appropriate in the future to consider how this model may be integrated with others such as the systems model for distance education (Moore & Kearsley, 1996) and Kember's model of student progress (Kember, 1995). The findings from this research indicate an inextricable link between the students' learning experiences and other social factors. As previously discussed the systems model for distance education, places an emphasis on student needs, the design and delivery of programs, interactions between students, peers, lecturers, and the university, and the context of the learning environment (Moore & Kearsley, 1996). Kember's model recognises other pressures faced by the student in terms of entry level characteristics (e.g., prior educational experiences and knowledge) and also tensions felt by students in terms of balancing family, work and study.

In essence, any future theoretical models which seek to conceptualise factors which contribute to distance students' health, should consider incorporating academic (e.g., learning and intuitional factors) and social factors (e.g., work/study/life balance, social interactions, belonging and identity). Therefore, theoretical development could involve consideration of revising the current health promoting universities model, to incorporate aspects of these other two conceptual models. Moreover, this could be scoped towards a strengths based approach. This infers that a model of distance students' health should include aspects which enhance and support health, considering health as a positive and holistic construct.

Study Limitations

There were a number of limitations to this research. Firstly, the data collected for Study 1 was collected at the beginning of semester 2, 2011. It is not clear whether collecting data at different times of the semester would have resulted in different findings, particularly in terms of the amount of stress or strains experienced. This acknowledges that most academic demands for assessment may occur at the middle or end of semester, with often larger weighting of assessments, namely assignments and exams, structured around these periods.

In Study 1, most of the sample was female, which may restrict the generalisability of findings to a typical USQ student population. It is therefore recommended that future research examine the role of health-promoting behaviours in student coping, from a more representative sample of students. Secondly, in terms of Study 2, there were no students with disabilities, international students, or students from varied ethnic backgrounds in the sample. Despite this sample, there may be some conceptual transference of findings to students studying externally to the university based on highlighted challenges presented in the literature.

Whilst it was not established as to the reasons for the low participation rates of overseas international distance students who participated in Study 1, there are opportunities in the future to collaborate with USQ International Partners to examine in more depth the health issues of students who reside overseas, so that links can also be made with support in their own localities.

Furthermore, some of the students interviewed had only just commenced their study, and as such, their perceptions may be different from those students who have studied by distance for a longer period of time. Other students were quite experienced, which may have influenced the types of strategies have

developed through their program of study to cope with demands. Having both experienced and less experienced may be considered a study limitation.

In Study 2, distance students were able to participate irrespective of how long they had been studying. This was a purposeful decision as commencing students may have enlightened the study findings in relation to their transition to distance study. Despite this fact, most of the participants in Study 2 had completed between six and seven courses, which was not comparable to the Study 1 sample.

Whilst the focus of this research was on differences between on-campus and distance students per se, other academic demographics may have had an effect on survey responses from students, yet had not been examined. For example differences between the level and type of program could have been examined as characteristics of interest. Nevertheless, Study 2 involved a mix of participants who were commencing students and were similar to that of the Study 1 sample. To gain a more representative sample in future research, it may be more appropriate to consider selecting students in different levels of programs.

Thirdly, the age of participants in Study 2 was higher than the average age of distance students in Study 1. Most students studied part time, despite many distance students at USQ who study full-time and are under the age of 25 years. Given this fact, understanding the context for younger distance students was not addressed in this research and could also be considered a limitation.

Whilst the Study 2 participants were slightly older than the Study 1 sample, in qualitative research it is important to consider the contextual meaning from the participants' points of view (Liamputtong, 2010). As such, the participants' experiences cannot be made generalisable to the whole student population. Therefore,

regardless of the slight age differences in this research, the findings remained important to provide further insights into the “distance student experience”.

It should be cautioned that the experiences of those students represented in Study 1, may in fact not be representative of all distance students, given the potential for a diverse non-homogeneous group. Whilst these limitations are acknowledged, they should not detract from the significance of the findings.

Opportunities for Further Research

First, given that this study used a cross-sectional study design, there may be value in considering a longitudinal research design to track students over time. In addition, as the data for Study 1 was collected at only one point in time, it is therefore recommended that future research examine the role of health-promoting behaviours on student coping, throughout the academic year. In addition, this research was conducted at a regional university. There could be other opportunities to examine the study variables using similar measures with other universities.

Secondly, there may be opportunities to expand the theoretical model. With respect to the health promotion model, it is acknowledged that the path model developed in this research did not test all components of the health promotion model. In fact it focused on personal factors such as perceived health status and cognitive behavioural-specific factors, for example, value of health. This approach is commonly used where the variables in the health promotion model are used to test the predictability of the model, often using the HPLPII as the basis for exploration. It is argued that it may be difficult to test the entire model, given its complexity and the large number of concepts involved (Pender et al., 2011).

Although there have been no similar models developed, parallels can be drawn from previous research. Mohamadian et al. (2011) used structural equation modelling with Iranian adolescent girls, and found that 71% of the variance of health-related

quality of life was predicted by factors from the health promotion model (Mohamadian et al., 2011). The key predictors of health-promoting behaviours were self-efficacy and social support (positive influences) and perceived barriers (negative influence); with self-efficacy having the largest direct effect on health-promoting behaviours. Whilst general self-efficacy was examined in Study 1, using other health self-efficacy scales may be more appropriate to examine. For example, health related self-efficacy as a key predictive variable, may be measured using the Perceived Health Competence Scale, as used by Mohamadian et al. (2011).

Consequently, it is recommended that future theoretical models consider the inclusion of social support, and health-related self-efficacy as positive predictors of student coping. In addition, other variables such as conscientiousness may also explain differences in health behaviours between cohorts of students (Burton & Nelson, 2006; McCarthy et al., 2006), and as such should warrant further investigation.

Thirdly, as distance students in this research were found to have moderate levels of distress, there are future opportunities to develop and measure the effect of the interventions designed specifically to prevent psychological distress, or reduce the likelihood of further distress. This for example, could include implementing “the Desk” and measuring mental health outcomes and functioning.

Conclusion

With the increased diversity in the university student population, and a greater focus on flexible learning options, a challenge for universities is to promote positive health and wellbeing for students, regardless of study mode. Choosing to study by distance may be seen as advantageous in enabling greater flexibility, whilst still meeting the demands of work and family. Nevertheless, distance students often face social and academic challenges, which may impact on their study experience, and

health and wellbeing. The ability to cope with these demands is critical for academic success.

Previous research has found the health behaviours may positively or negatively affect students' coping. To date, the focus has been on the effect of health-risk behaviours with younger on-campus populations. Whilst some research has emerged about the positive influence of health-promoting behaviours in student stress, strain, coping and academic performance with on-campus student populations, the nature of these relationships had not been examined with distance students.

Importantly, this research indicates negligible differences between on-campus and distance students, with respect to health-promoting behaviours as a predictor of student coping. Given that many supports provided to students, such as counselling or transition programs, are commonly provided to those studying on-campus, strategies to enhance mental and physical wellbeing should be developed specifically for distance students. Whilst some distance students may have protective factors such as being motivated and have good social support, this may not be the case for all students. As such, there could be students who would greatly benefit from those supports and strategies provided to those within an on-campus environment.

This research adds new knowledge about health-promoting behaviours in two ways. First, health-promoting behaviours (nutrition, physical activity, stress management, interpersonal relations, spiritual growth and health responsibility) are an important predictor of distance students' coping, more so than health-risk behaviours. Health-promoting behaviours are an important buffer for stress, and act as a mediator between stress and strain in university students, regardless of whether students study on-campus or by distance.

The findings of this research also indicate that the influence of health promoting behaviours on student outcomes such as academic performance and

intention to leave is less direct; nevertheless there is strong theoretical support for the targeting of health-promoting behaviours as an important component of student coping.

Secondly, qualitative findings support the theoretical model in which health promoting behaviours are a buffer for stress. Health-promoting behaviours may also play a role in enhancing study focus and energy levels. More broadly, these behaviours may aid to foster interpersonal relationships, recreational pursuits, and enhanced spirituality. Overall, students saw an inextricable link between health promoting behaviours as part of their coping.

These findings suggest that strategies should be developed for distance students, to help with aspects such as time and stress management, by creating more balance in life using time-saving study tips. As students see clear roles of the university to support their health and wellbeing, this provides the impetus for universities to expand their approaches, and develop greater partnerships to enhance distance students' health and wellbeing. This research clearly indicates that improving health and wellbeing should not be focused on "health issues" per se. Rather there needs to be an acknowledgement of the range of social and academic factors which influence the student, and how these in turn may influence their health.

This research has may have broader implications for universities who support distance students. While there is a growing body of literature that focuses on the learning and teaching of distance students, this research indicates that there is a gap in the knowledge of health promotion and support of distance students. Strategies and programs need to be holistic, and consider the social, academic, and psychological needs of the distance student. These may include other than health-promoting behaviours, broader ways in which distance students typically cope.

Particularly in terms of health and wellbeing messages to distance students, these should be framed with a “mature-age focus”, which considers students’ multiple responsibilities, including juggling work, family, and study. These research findings may have applicability for other universities with large cohorts of distance students to consider how more population based approaches may be used to support distance students’ health and wellbeing.

The increased proportion of distance students in tertiary study means that distance students can no longer be “out of sight, out of mind”. This combined with a changing ideology about university health promotion, requires a shift in thinking, towards a more positive concept of health. Universities need to move beyond a health-risk model approach, and towards a more positive outlook of health, if they are to address the holistic needs of students in the future.

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Appendix A

Glossary of Key Terms

Key Terms Related to Study/Mode/Programs/Students

Associate Degree

An associate degree provides the basics or foundations of a field. It will cover the broad theory and enable the development of basic employment-related skills. These are usually of two years duration (Australian Government, 2013).

Bachelor Degree

A bachelor degree is the basic qualification for entry to a field. It provides a systematic body of knowledge, the underlying principles and the problem-solving techniques needed to work in a discipline area. A bachelor degree is usually of three years duration (Australian Government, 2013).

Doctoral Degree

The highest award offered by Australian universities, the doctoral degree is a research program, although it can have some coursework. The three components of a doctoral degree are: a) a review of literature, experimentation or other methodical approach to a body of knowledge, b) an original research project that makes a contribution to understanding and knowledge in a field, and c) a substantial, well-ordered thesis that shows a relationship between the research and the field of study (Australian Government, 2013).

Domestic Student

The Commonwealth Government defines domestic students as Australian citizens, New Zealand citizens, and Australian permanent residents (including Australian permanent humanitarian visa holders).

Enabling Program

A program for disadvantaged students which meets Commonwealth guidelines for such programs and from which successful completion leads to automatic admission into an academic program of the University (<http://policy.usq.edu.au/policy/files/definitions.htm#id1>).

External (off-campus) Study

A mode of study which involves arrangements whereby lesson materials are delivered to students, either by post, courier service, or via the internet, and for which any associated attendance at the University is of an incidental, irregular, special or voluntary nature. External study may be print-based or online. The usual abbreviation is EXT (<http://www.usq.edu.au/glossary/mode>). Students complete assignments and send to the University for marking, and may sit examinations at nearby study centres.

Flexible Delivery

Flexible delivery at USQ incorporates not only traditional face-to-face and print based delivery, but also uses a variety of electronic technologies to enhance student and teacher access to people and other learning resources such as distance education or online (<http://www.usq.edu.au/glossary/flexdelivery>).

Full-Time Study

Enrolment in courses with a combined workload of six units (.75 EFTSL) or more in any one academic year shall be deemed to be full-time study for the majority of students (<http://www.usq.edu.au/glossary/fulltime>).

Grade Point Average

A grade point is the numerical value assigned to a final grade to allow calculation of a grade point average (GPA). GPA is the average of all final grades obtained by a student for courses within an academic program. Courses for which exemptions have been granted will not be used in the calculation of a GPA, but courses transferred for credit will be included (<http://www.usq.edu.au/glossary/gpa>).

International Distance Student

Students who study via external or online study, and reside outside Australia. This includes studying directly with USQ and studying through overseas partner institutions. Any associated attendance at the university is of an incidental, irregular, special or voluntary nature. Delivery of lesson material or assignments to the student is by post, courier service or via the internet. A normal program load for international distance students is two courses per semester during semesters 1 and 2 (<http://www.usq.edu.au/glossary/internationaldist>).

Master's Degree

A master's degree is a course of independent research, traditional coursework or a combination of the two. Must have completed an undergraduate degree to be eligible (Australian Government, 2013).

Mature-Age Student

A student 25 years and over studying tertiary education (Krause et al., 2005).

Mixed mode/multimodal

Students may choose to study a program via a variety of modes

(<http://www.usq.edu.au/glossary/mode>).

Non-Award Program

An academic program which does not lead to an award and which comprises a course or courses of study which are a) from an academic program or programs at the university; and b) are able to be counted as credit towards some academic program at the university by all students who complete the course or courses of study

(<http://policy.usq.edu.au/policy/files/definitions.htm#id1>).

Non-Traditional student

May be described a student between the ages of 20 to 24 years (Krause et al., 2005).

On-Campus Study

A study mode that requires a student to attend classes at the university on a regular basis. A course is classified as on campus when it is offered via face-to-face delivery.

The majority of full-time students study via this mode. The usual abbreviation is ONC (<http://www.usq.edu.au/glossary/mode>).

Online (web) Study

A mode of study in which the instruction and communication among academic staff and students, submission of assignments and feedback is offered mainly through the internet. The usual abbreviation is WEB (<http://www.usq.edu.au/glossary/mode>).

Part-Time Study

A student who is enrolled in less than six units in any year is deemed to be enrolled on a part-time basis (<http://www.usq.edu.au/glossary/parttime>).

Postgraduate Study

Programs/courses at graduate certificate, graduate diploma, masters, and doctoral levels. Postgraduate courses are generally only available to people who have completed an undergraduate degree (<http://www.usq.edu.au/glossary/postgraduate>).

Undergraduate Study

Programs or courses at associate degree, advanced diploma and bachelor degree levels (<http://www.usq.edu.au/glossary/undergrad>).

University

University is a regulated term in Australia. No educational organisation can operate as an Australian university without meeting criteria set out in law. From 2012, Commonwealth Provider Category Standards enforced by TEQSA regulate which institutions can operate as universities. There are 39 full Australian universities, including two private universities, Bond University and the University of Notre Dame (Norton, 2012).

Traditional Student On-Campus Student

A traditional on-campus student may be described as a typical school-leaver (i.e., 19 years or under), who has recently completed high school and is entering tertiary education (Krause et al., 2005).

Key terms in thesis related to study variables

Health-promoting behaviour

Self-initiated actions directed toward enhancing an individual's level of health and wellbeing.

Health-risk behaviour

Behaviours and conditions that can increase the risk of a health disorder or other unwanted condition or event, and they include both modifiable and non-modifiable factors.

Stress

The stress process incorporates a transaction between a person and their environment and involves a set of cognitive, affective and coping variables. Stress itself can be viewed as both a response and a stimulus.

Strain

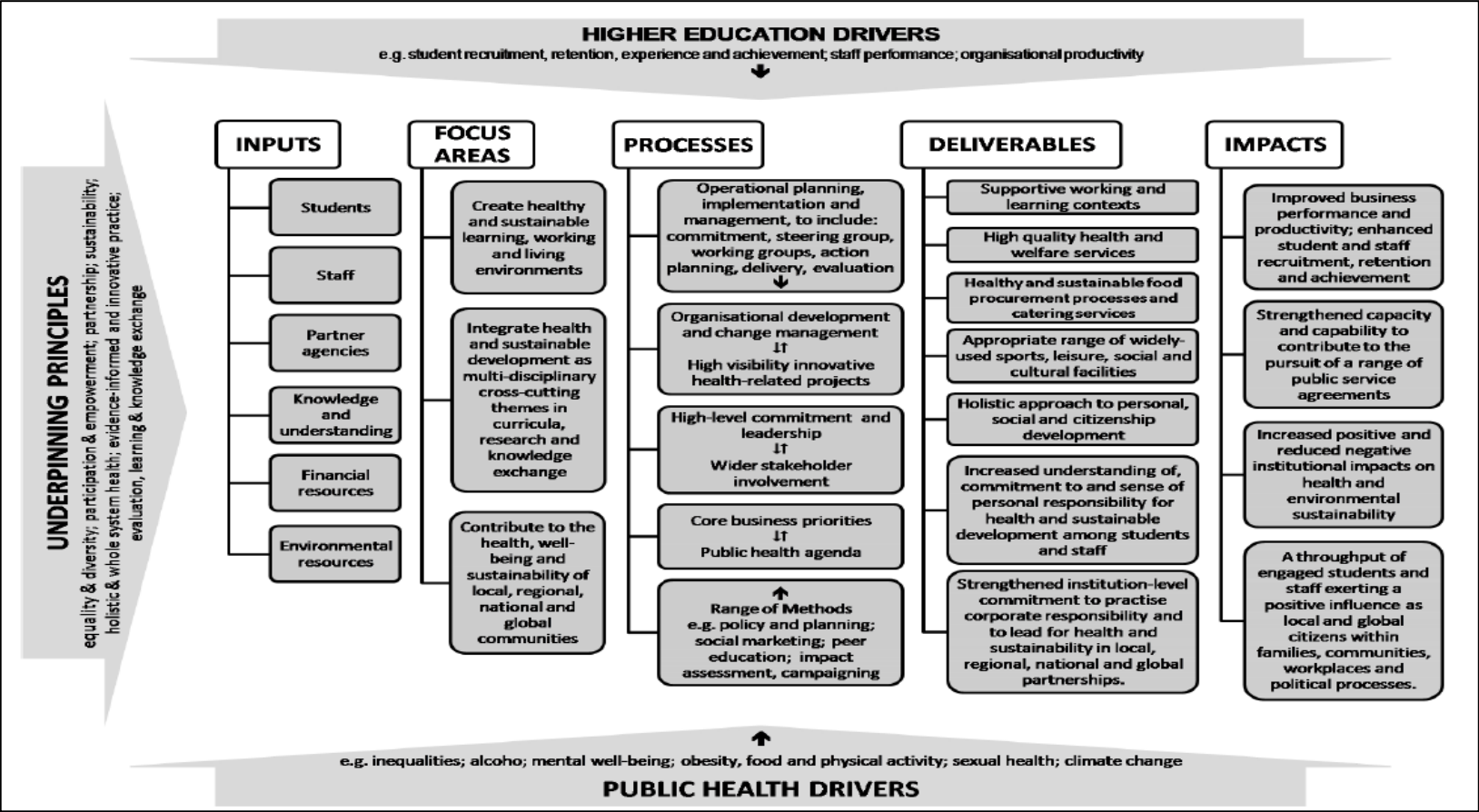
The effects of negatively perceived stress beyond the person's ability to cope with the stressors, which may result in behavioural, physical, and psychological disruptions, for example, financial, work and role strain, and increases in health risk behaviours.

Coping

Cognitive and behavioural efforts to manage specific external/internal demands that are appraised as taxing, or exceeding the resources of the person.

Appendix B



Expanded Model for Conceptualising the Healthy Settings Approach to Higher Education



(Dooris et al., 2010. p. 7)

Appendix C

Ethics for Phase 1: Testing the USQ Health and Wellbeing Survey

	University of Southern Queensland									
	TOOWOOMBA QUEENSLAND 4350	CRICOS: QLD 00244B NSW 02225M								
	AUSTRALIA									
	TELEPHONE +61 7 4631 2300									
www.usq.edu.au										
OFFICE OF RESEARCH AND HIGHER DEGREES Helen Phillips Ethics Officer PHONE (07) 4631 2690 FAX (07) 4631 1995 EMAIL ethics@usq.edu.au										
Wednesday, 30 June 2010										
Mrs Lisa Beccaria Faculty of Sciences - Department of Nursing and Midwifery USQ Toowoomba Campus 4350										
Dear Mrs Lisa Beccaria										
The Chair of the USQ Human Research Ethics Committee (HREC) recently reviewed your responses to the HREC's conditions placed upon the ethical approval for the below project. Your proposal now meets the requirements of the <i>National Statement on Ethical Conduct in Human Research (2007)</i> and full ethics approval has been granted.										
<table border="1"> <tr> <td>Project Title</td> <td>Exploring the Health Needs of Distance Students within a Social and Academic Context</td> </tr> <tr> <td>Approval no.</td> <td>H10REA137</td> </tr> <tr> <td>Expiry date</td> <td>30.06.2011</td> </tr> <tr> <td>HREC Decision</td> <td>Approved</td> </tr> </table>	Project Title	Exploring the Health Needs of Distance Students within a Social and Academic Context	Approval no.	H10REA137	Expiry date	30.06.2011	HREC Decision	Approved		
Project Title	Exploring the Health Needs of Distance Students within a Social and Academic Context									
Approval no.	H10REA137									
Expiry date	30.06.2011									
HREC Decision	Approved									
The standard conditions of this approval are:										
<ul style="list-style-type: none"> (a) conduct the project strictly in accordance with the proposal submitted and granted ethics approval, including any amendments made to the proposal required by the HREC (b) advise (email: ethics@usq.edu.au) immediately of any complaints or other issues in relation to the project which may warrant review of the ethical approval of the project (c) make submission for approval of amendments to the approved project before implementing such changes (d) provide a 'progress report' for every year of approval (e) provide a 'final report' when the project is complete (f) advise in writing if the project has been discontinued. 										
For (c) to (e) proformas are available on the USQ ethics website: http://www.usq.edu.au/research/ethicsbio/human										
Please note that failure to comply with the conditions of approval and the <i>National Statement (2007)</i> may result in withdrawal of approval for the project.										
You may now commence your project. I wish you all the best for the conduct of the project										
 Helen Phillips Ethics Officer Office of Research and Higher Degrees										
Toowoomba • Springfield • Fraser Coast										
usq.edu.au										

Appendix D

Summary of Measures and Survey Items in the Original USQ Health and Wellbeing Survey

Variable Category	Variable	Measure	Corresponding Survey Items in Appendix E
General health	Health value	Health Value Scale (Lau et al., 1986)	Section “Health Value”, page 5 of survey. 4 items, 7-point likert scale
	Self-reported health	Excellent Very good Good Fair Poor	Section “ Rating your Own Health ”, page 5 of survey. 1 item. 5 possible responses.
Health-promoting behaviours	Nutrition Physical activity Spiritual growth Interpersonal relations Stress management Health responsibility	Health-Promoting Lifestyle II Profile (Walker et al., 1985) *	Section “ Health Behaviours of University Students ”, pages 12-13 of survey. 46 items (of usual 52 items), 4-point likert scale. Nutrition – 8 Physical activity – 7 Spiritual growth – 8 Interpersonal relations – 8 Stress management – 7 Health responsibility – 8
Health-risk behaviours	Body mass index	$\frac{\text{Weight (kg)}}{\text{Height (m)}^2}$	Section “ Physical Health ”, page 11 of survey. 3 items (height, weight, pregnant status).
	Psychological distress	Kessler Psychological Distress Scale (Kessler et al. 2002)	Section “ Mental Health ”, page 7 of survey. 10 items, 5-point likert scale.

Note. Health-Promoting Lifestyle II Profile* items – see Pilot Survey in Appendix E. Items 1 = Interpersonal relations, items 2 = Nutrition, items 3 = Health responsibility, items 4 = Physical activity, items 5 = Stress management, items 6 = Spiritual growth.


Appendix D

Summary of Measures and Survey Items in the Original USQ Health and Wellbeing Survey (continued)

Variable Category	Variable	Measure	Corresponding Survey Items in Appendix E
Student stress	Academic Lifestyle & financial Personal Interpersonal relationship	Student Stress, Strain and Coping Scale (SSSC, Sarah, 1997)	Section “ Stressors and Strains of University Students ” page 15 of survey, 5-point likert scale. Academic – 9 items Lifestyle & financial – 5 items Personal – 5 items Interpersonal Relationship – 5 items
Student strain	Academic	Student Stress, Strain and Coping Scale (SSSC, Sarah, 1997)	Section “ Stressors and Strains of University Students ” page 16 of survey, 5-point likert scale. Academic strain – 6 items
Student coping	Social support Recreation and self-care Problem-focused	Student Stress, Strain and Coping Scale (SSSC, Sarah, 1997)	Section “ Stressors and Strains of University Students ” page 15 & 16 of survey, 5-point likert scale. Social support – 8 items. Problem-focused – 7 items, Recreation and self-care – 8 items.
Academic outcomes	Self-reported grade point average	Self-reported grade point average	Section “ Demographics ” page 4 of survey, 1 item, 5 possible responses.

Appendix E

Copy of Original USQ Health and Wellbeing Survey

	USQ Health and Wellbeing Survey The University of Southern Queensland Plain Language Statement and Consent Form		Page 1 of 19
To:	University of Southern Queensland Students		
Full Project Title:	The experience of distance education and its influence on students' health risk and health promoting behaviours, academic performance, stressors, strains and coping		
Principal Researcher:	Mrs Lisa Beccaria (PhD Student) - Lecturer USQ Department of Nursing and Midwifery		
Supervisors:	Professor Cath Rogers-Clark / Associate Professor Lorelle Burton		

Dear Students,

You are being asked to participate in a USQ Research Study. This study is in **2 parts**.

Part 1: USQ Health and Wellbeing Survey (available to all USQ students over the age of 18 years)
Part 2: Me, My Health, My Study Project (available only to USQ students studying by distance / external mode)

Part 1 USQ Health and Wellbeing Survey

This is an online survey conducted as part of Lisa Beccaria's PhD studies. The purpose of this survey is to explore health behaviours of students studying across a variety of study modes within the university. It is also aimed at understanding the factors which influence your health and wellbeing as a student. The study hopes to identify a better understanding of students' health needs or issues, which the university may be able to use to develop strategies to better support student health and wellbeing. At the end of the survey, if you are a distance / external student, you will be given the opportunity to indicate your interest in participating in **(Part 2) - Me, My Health and My Study Project**. **Please refer to Part 2 information.**

This online survey should take approximately **30 mins to complete**. At the completion of this survey, you will be eligible to go into a draw to receive a prize of either a \$350 USQ Book Voucher or an iPod Classic.

You must be at least 18 years of age to participate in this survey. This survey can be completed by any USQ student regardless of study mode. The survey is being administered by the USQ Planning and Quality Office. You may receive emails as reminders to participate in this survey. This is to maximise the chance of receiving valuable information from students.

This survey is voluntary and anonymous. No one will be able to identify you (including IP / student email address) or your responses, nor link you to any personal or academic information within the university. If you do not wish to take part you are not obliged to. If you find some of the questions embarrassing or if they cause you any discomfort, you may choose not to continue completing the survey, or to skip any questions that you do not want to answer. If you feel that you require support for concerns that you have about your health and wellbeing, you may wish to contact [USQ Student Services or support](#). It cannot be guaranteed that you will directly benefit from this research, you will however be contributing to the knowledge of health needs of university students.

Your decision whether or not to take part will not affect your relationship with the USQ. As this survey is anonymous, it will not be possible to withdraw your data if you change your mind later. In any publication, information will be provided in such a way that you cannot be identified.

Before you make your decision to participate, a member of the research team will be available to answer any questions you have about the research project. You can ask for any information you want.

Once you understand what the project is about and if you agree to take part in it, it is asked that you select yes below.

You are making a decision whether or not to participate in this survey. By selecting yes below you indicate that, having read the information provided above, you have decided to participate.

Yes, I agree to participate
 No, I do not agree to participate

USQ Health and Wellbeing Survey

Page 2 of 19

Part 2 Me, My Health, My Study

The purpose of this research is to explore in-depth perceptions from distance / external students about the influences from home or study which impact on health behaviours. In addition, it will explore how you as a student perceive the university's role in promoting health and wellbeing. This is important so that universities can develop strategies which best meet the diverse needs of distance students. This has the potential to have a positive impact on future students' study experiences. At the end of the Part 1 online survey, you will be given the opportunity to indicate your interest in participating in this study (Part 2). If you tick the box indicating your interest, the researcher will contact you via email and provide a consent form for you to complete. If you do not wish to take part in Part 2 you are not obliged to. You can complete Part 1 (the online survey) without completing Part 2 if you wish.

This project will involve the method of Photovoice. Your participation in this project will involve the following:

- Training on the Photovoice method (approx 2-4 hours) (e.g. watching short web based presentations via a secure USQ site)
- Taking photos around a set of themes provided by the researcher about your experiences (this can be with your own camera or one supplied by the researcher)
- 1 X 2 hour personal interview with the researcher (recorded online via WIMBA technology)
- Participation in a 1 X 2 hour focus group with other distance students (recorded online via WIMBA technology)
- Uploading of photos to a secure USQ website - approximately 1-2 hours
- Discussion of findings and feedback with the researcher - approximately 1 hour

This study is voluntary, and your decision whether to take part or not to take part, will not affect your relationship with the University of Southern Queensland. When discussing thoughts and feelings experiences as a student, there is the possibility that you could feel some level of discomfort or distress. If you do, you have the right to cease your involvement in the study at any time and if you wish, seek counselling from [USQ Student Services](#) or [support](#). You may withdraw at any time from the study, and your data also is withdrawn including data from personal interviews and photographs, except data collected during the focus group. Distance / external students may if they choose complete Part 1 and not Part 2 of this study.

Principal Researcher:

Lisa Beccaria
PhD student 07) 46312753, lisa.becarria@usq.edu.au

Supervisor:

Professor Cath Rogers Clark 07) 46 312005 , Cath.Rogers-Clark@usq.edu.au
Head of Department Nursing and Midwifery USQ (Faculty of Sciences)

If you have any ethical concerns with how the research is being conducted or any queries about your rights as a participant please feel free to contact the University of Southern Queensland Ethics Officer on the following details.

Ethics and Research Integrity Officer

Office of Research and Higher Degrees
University of Southern Queensland
West Street, Toowoomba 4350
Ph: +61 7 4631 2690
Email: ethics@usq.edu.au

USQ Health and Wellbeing Survey

						Male	Female	
1. What is your gender?							<input type="radio"/>	<input type="radio"/>
2. What is your age in years? <input type="text"/>								
		Permanent Full-time	Permanent Part-time	Casual	Fixed contract	Not currently employed		
3. What is your employment status?							<input type="radio"/>	<input type="radio"/>

If you are not currently employed please skip to Q6

4. How many jobs are you currently working? <input type="text"/>								
		30+	26-30	21-25	16-20	11-15	6-10	1-5
5. What is the total number of hours you would work in an average week (taking into account all of your paid employment combined)?								
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

				Aboriginal or Torres Strait Islander		Non-English Speaking Background	
6a. Do you identify with either of the following?							
				<input type="radio"/>		<input type="radio"/>	

			Yes	No	If no, what is your permanent country of residence			
6b. Are you a permanent resident or citizen of Australia?				<input type="radio"/>	<input type="radio"/>	<input type="text"/>		

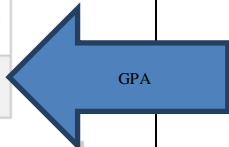
		0	1-5	6-10	11-15	16-20	21-25	26-30	30+
7. How many hours per week would you spend providing care to dependents or family members? (e.g. caring for children, spouse, ageing parents)									
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

					Single	Married	De Facto	Separated	Divorced
8. What is your marital status?									
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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USQ Health and Wellbeing Survey

	Higher degree research	Higher degree coursework	Other postgraduate	Bachelor	Other undergraduate	Enabling / Non-Award	
9. What level of program are you currently enrolled in?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Oncampus (ONC) Toowoomba	Oncampus (ONC) Springfield	Oncampus (ONC) Fraser Coast	External (EXT)	Online (WEB)	Mixed / Flexible (Multimodal)	
10. What is your primary mode of study?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
11. Which section of the university are you enrolled in?		Faculty <input type="text"/>					
	0	1-4	5-9	10-14	15-19	20-24	25+
12. How many courses have you successfully completed with your current study?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
			Less than 3	Between 3 and 4	Between 4 and 5	Between 5 and 6	Between 6 and 7
13. What is your Grade Point Average (GPA) for your total number of courses so far?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Note: Each course grade is worth: HD (7), A (6), B (5), C (4), LP (3), F (1.5)						Less than 6	More than 6
14. How many courses in total are you enrolled in for this academic year?						<input type="radio"/>	<input type="radio"/>
15. What is your current residential postcode in Australia? <input type="text"/>							



GPA

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USQ Health and Wellbeing Survey

Rating your Own Health

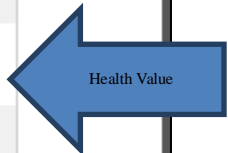
	Excellent	Very Good	Good	Fair	Poor
Please indicate how you would rate your health in general at the moment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Health Value

Please read the following four statements and indicate the extent to which you agree with them.

	Strongly Disagree	Disagree	Somewhat Disagree	Undecided	Somewhat Agree	Agree	Strongly Agree
If you don't have your health, you don't have anything	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are many things I care about more about than my health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Good health is only of minor importance in a happy life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is nothing more important than good health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Computer Use and Muscle Strain

Please read the following symptoms, and indicate whether you have experienced any of these.

	Never	Sometimes	Often	Always
Pain / discomfort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Numbness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tingling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tightness of muscles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Decreased range of movement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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USQ Health and Wellbeing Survey

Sun Protection

Please indicate below as to how often you do the following when you go out into the sun (on a typical summer's day).

	Never	Sometimes	Often	Always
Wear a broad brimmed hat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wear 30+ sunscreen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Try to stay in the shade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wear sunglasses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wear a long-sleeved shirt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid spending a long time outside	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid spending a long time outside during the hottest part of the day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Vaccination

Please indicate what you have been vaccinated for.

	Yes	No	Don't know
Influenza (within the last 12 months)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hepatitis A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hepatitis B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pneumococcal disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meningococcal Disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diphtheria / Tetanus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Varicella (Chicken Pox)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pertussis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poliomyelitis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yellow Fever	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Typhoid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
H1N1 (Pandemic Influenza Vaccine- Swine Flu)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Measles, Mumps, Rubella	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Human Papillomavirus (HPV)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Japanese encephalitis virus vaccine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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USQ Health and Wellbeing Survey

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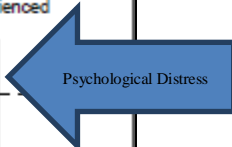
Mental Health
 The following questions measure your level of psychological distress. Please indicate how often you have experienced the following, within the past 4 weeks.

Within the past 4 weeks :	All the time	Most of the time	Some of the time	A little of the time	None of the time
About how often did you feel tired out for no good reason?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
About how often did you feel nervous?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
About how often did you feel so nervous that nothing could calm you down?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
About how often did you feel hopeless?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
About how often did you feel restless or fidgety?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
About how often did you feel so restless you could not sit still?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
About how often did you feel depressed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
About how often did you feel that everything was an effort?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
About how often did you feel so sad that nothing could cheer you up?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
About how often did you feel worthless?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What is my score:
0

What does my score means?	What should I do about my score?
10-15 : Low Level of Psychological Distress	Maintain your mental health with ideas such as exercising, enjoying a hobby, connecting with community, setting realistic goals, and having a positive attitude. You may like to look here for more ideas. http://www.mhca.org.au/documents/AboutMentalHealth/FactSheet-BeActiveForYourMentalHealth_000.pdf
16-21 : Moderate Level of Psychological Distress	You may benefit from accessing general information and strategies to improve your mental health. www.beyondblue.org
22-29 : High Level of Psychological Distress	You may benefit from accessing general information and strategies to improve your mental health. www.beyondblue.org
30-50 : Very High Level of Psychological Distress	Whilst general information and strategies may still help, it is strongly recommend that you see your doctor or other health professional.

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USQ Health and Wellbeing Survey

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Smoking

Which of the following best describes your current smoking status?

Within the past 4 weeks	
I have never smoked	<input type="checkbox"/> (skip to next page - alcohol consumption section)
Smoke daily	<input type="checkbox"/>
Smoke occasionally (usually socially)	<input type="checkbox"/>
Don't smoke now, but used to	<input type="checkbox"/>
Tried a few times, but not a regular smoker	<input type="checkbox"/>

Do you intend to quit smoking?

Not planning to quit within the next 6 months	<input type="checkbox"/>
Planning to quit in the next 6 months	<input type="checkbox"/>
Planning to quit in the next month	<input type="checkbox"/>
Have not smoked in the last 24 hours but within the last 6 months	<input type="checkbox"/>
Have not been smoking at all in the last 6 months	<input type="checkbox"/>

USQ UNIVERSITY OF SOUTHERN QUEENSLAND




















USQ Health and Wellbeing Survey

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Alcohol Consumption

The following questions relate to alcohol consumption. The following table may help you to know how many standard sized drinks you consume according to the Australian Alcohol guidelines (2009)


Standard Drinks Guide

									
1.5	1	0.8	1.5	1	0.8	1	0.7	0.5	1.5
375ml Full Strength Beer 4.9% Alc/Vol	375ml Mid Strength Beer 3.5% Alc/Vol	375ml Light Beer 2.1% Alc/Vol	375ml Full Strength Beer 4.9% Alc/Vol	375ml Mid Strength Beer 3.5% Alc/Vol	375ml Light Beer 2.1% Alc/Vol	350ml Mid Strength Beer 4.0% Alc/Vol	350ml Mid Strength Beer 3.5% Alc/Vol	350ml Mid Strength Beer 2.7% Alc/Vol	170ml Sparkling Wine 11.0% Alc/Vol
									
1.5	1.5	1	22	0.9	1	1.8	7	38	
375ml Pre-mix Spirits 3% Alc/Vol	340ml Alcoholic Soda 1.2% Alc/Vol	330ml 80% Nip 40% Alc/Vol	700ml 80% Nip 40% Alc/Vol	600ml Pot/Sherri Glass 18% Alc/Vol	100ml Standard Serve of Wine 12% Alc/Vol	180ml Average Restaurant Serve of Wine 12% Alc/Vol	750ml 90% Nip 12% Alc/Vol	4 Litres Cask Wine 12% Alc/Vol	

* 100% Alc/Vol = 100% Alc/Vol; 100% Alc/Vol = 100% Alc/Vol; 100% Alc/Vol = 100% Alc/Vol

	Every day	5-6 days	3-4 days	1-2 days	Don't drink
On average per week, how often do you have an alcoholic drink of any kind?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On a day that you have an alcoholic drink, how many standard drinks would you normally have?	13 or more	11-12	7-10	5-6	3-4
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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		USQ Health and Wellbeing Survey					Page 10 of 19
Sexual Health							
	0	1	2-3	4-5	6 or more		
In the last year, how many sexual partners have you had?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
				Yes	No		
For the last time that you had sexual intercourse did you use a condom (e.g. during oral, vaginal or anal intercourse)?				<input type="radio"/>	<input type="radio"/>		
For the last time that you had sexual intercourse did you use any form of contraception to prevent pregnancy?				<input type="radio"/>	<input type="radio"/>		
In the past 12 months, have you had any of the following?							
Genital Warts						<input type="checkbox"/>	
Genital Herpes						<input type="checkbox"/>	
Chlamydia						<input type="checkbox"/>	
Pelvic Inflammatory Disease						<input type="checkbox"/>	
HIV						<input type="checkbox"/>	
Gonorrhoea						<input type="checkbox"/>	
Pubic Lice (crabs)						<input type="checkbox"/>	
Syphilis						<input type="checkbox"/>	
Hepatitis A						<input type="checkbox"/>	
Hepatitis B						<input type="checkbox"/>	
Hepatitis C						<input type="checkbox"/>	
None of the above						<input type="checkbox"/>	
In the past 12 months, have your sexual partner/s been?							
Male						<input type="checkbox"/>	
Female						<input type="checkbox"/>	
Transgender						<input type="checkbox"/>	

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Personal Safety

	Yes	No
Have you ever been afraid of your partner?	<input type="radio"/>	<input type="radio"/>
In the past year, has your partner hurt you by?	Yes	No
Pushing, grabbing, slapping, kicking etc	<input type="radio"/>	<input type="radio"/>
Constantly putting you down / telling you that you're worthless	<input type="radio"/>	<input type="radio"/>
Preventing you from maintaining contact with family / friends	<input type="radio"/>	<input type="radio"/>
Forcing you to have sex when you don't want to, or do sexual things that you don't want to	<input type="radio"/>	<input type="radio"/>
Not letting you have any control of finances	<input type="radio"/>	<input type="radio"/>
	Yes	No
Within the last 12 months, has your partner threatened to hurt you?	<input type="radio"/>	<input type="radio"/>

Physical Health

What is your height? (Please indicate height approx. in centimetres)

What is your current weight? (Please indicate weight approx. in kilograms)

Females only - if male skip to next page, drug use section

	Yes	No (if No skip to next page - drug section)	if yes, what is usually your pre-pregnant weight (please indicate in kilograms)
Are you currently pregnant?	<input type="radio"/>	<input type="radio"/>	

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Drug Use
 Please indicate below whether you have used any of the following drugs and how often in the last 12 months

	Never used	Daily	Weekly	Monthly
Ecstasy (MDMA)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marijuana (Cannabis)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heroin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inhalants (glue, petrol)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ice / Base/ Speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LSD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Zanthanols (Zed, Z, Zena, Kewpie Dolls)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GHB	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Benzodiazepines (minor Tranquillisers - for non-medical purposes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Depressants (e.g. sleeping pills for non-medical purposes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pain killers / analgesics e.g. Aspirin, codeine for non-medical purposes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cocaine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Khat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kava	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Health Behaviours of University Students

This part of the survey contains statements about your present way of life or personal habits. Please respond to each item as accurately as possible, and try not to skip any item. Indicate the frequency with which you engage in each behaviour, by indicating: **Never, Sometimes, Often or Routinely**

	Routinely	Sometimes	Often	Never	
Discuss my problems and concerns with people close to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1
Choose a diet low in fat, saturated fat, and cholesterol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2
Report any unusual signs or symptoms to a physician or other health professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3
Follow a planned exercise program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4
Get enough sleep	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5
Feel I am growing and changing in positive way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6
Praise other people easily for their achievements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1
Limit use of sugars and food containing sugar (sweets)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2
Read or watch TV programs about improving health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3
Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4

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Health-promoting behaviours

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Health Behaviours of University Students - continued

	Routinely	Sometimes	Often	Never	
Take some time for relaxation each day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5
Believe that my life has purpose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6
Maintain meaningful and fulfilling relationships with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1
Eat 6-11 servings of bread, cereal, rice and pasta each day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2
Question health professionals in order to understand their instructions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3
Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4
Accept those things in my life which I cannot change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5
Look forward to the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6
Spend time with close friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1
Eat 2-4 servings of fruit each day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2
Get a second opinion when I question my health care provider's advice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3
Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4
Concentrate on pleasant thoughts at bedtime	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5
Feel content and at peace with myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6
Find it easy to show concern, love and warmth to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1
Eat 3-5 servings of vegetables each day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2
Discuss my health concerns with health professionals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3
Do stretching exercises at least 3 times per week	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4
Use specific methods to control my stress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5
Work toward long-term goals in my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6
Touch and am touched by people I care about	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1
Eat 2-3 servings of milk, yogurt or cheese each day group each day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2
Ask for information from health professionals about how to take good care of myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3

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Check my pulse rate when exercising	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4
Practice relaxation or meditation for 15-20 minutes daily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5
Am aware of what is important to me in life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6
Get support from a network of caring people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1
Read labels to identify nutrients, fats, and sodium content in packaged food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2
Attend educational programs on personal health care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3
Reach my target heart rate when exercising	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4
Pace myself to prevent tiredness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5
Feel connected with some force greater than myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6
Settle conflicts with others through discussion and compromise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1
Eat breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2
Seek guidance or counselling when necessary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3
Expose myself to new experiences and challenges	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6

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Screening and Regular Health Checks
 Please indicate below, the extent to which you have had the following check-ups or screening, within the last 12 months.

Health Behaviours of University Students	
Breast Cancer Screening (i.e. mammogram)	<input type="checkbox"/>
Cervical Screening (i.e. Pap smear)	<input type="checkbox"/>
Performed testicular self examination	<input type="checkbox"/>
Performed breast self examination	<input type="checkbox"/>
Bowel cancer screening	<input type="checkbox"/>
Prostate examination	<input type="checkbox"/>
Dental check up	<input type="checkbox"/>
Routine medical check e.g. for blood pressure, cholesterol, blood glucose	<input type="checkbox"/>
Skin cancer check	<input type="checkbox"/>
Other, please indicate	<input type="text"/> <input type="text"/> <input type="text"/>

USQ Health and Wellbeing Survey

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Stressors and Strains of University Students
 This part of the survey asks you to consider a number of statements which relate to personal and academic stressors and strains and also strategies you use to cope with these. Please consider how frequently the statements are true for you, indicating rarely or never true, occasionally true, often true, usually true, true most of the time

	Rarely or Never True	Occasionally True	Often True	Usually True	True most of the time	
I become anxious when exam time draws near.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Academic Stress
I find my course workload is overly demanding.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I think about failing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I feel that I am expected to do too many things at once.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I feel I would benefit from discussing course material with other students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I have experienced delays and / or frustration in dealing with administration e.g., registration, waiting for phone calls.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I have experienced frustration due to limited resources and study material	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I don't have enough time to do the things that I like	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I am often distracted at home when I try to study	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Lifestyle/Financial Stress
Paying the bills is of concern to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I am concerned about my ability to pay for books and photocopying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I am concerned about finding a job when I leave University	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I am concerned about my personal health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Personal Stress
My eating habits are of concern to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I am concerned about not getting enough exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I am happy with my personal appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I feel confident within myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Interpersonal Relationship Stress
I am able to openly express my opinion to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I have difficulty in approaching and meeting other students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I easily make friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I feel pressure to spend time with my family or partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Recreation and Self-Care Coping
I find that close personal relationships are hard to develop and/ or maintain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
My family are easy to get along with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I experience conflict with my family and / or partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
When I need a break I take one	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Recreation and Self-Care Coping
I am able to do what I want to do in my free time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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Stressors and Strains of University Students - continued

	Rarely or Never True	Occasionally True	Often True	Usually True	True most of the time
A lot of my free time is spent attending performances (e.g., sporting events, theatre, movies, concerts, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I spend a lot of my free time in participant activities (e.g., sports, music, painting, woodworking, sewing, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I spend enough time in recreational activities to satisfy my needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get the sleep I need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<hr/>					
I set aside time to do the things I really enjoy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take regular breaks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is at least one sympathetic person with whom I can discuss my concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is at least one sympathetic person with whom I can discuss my academic problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I have at least one good friend I can count on	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a circle of friends who value me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to discuss my study problems with at least one other student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Recreation and Self-Care Coping

Social Support

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	There is at least one important person to me who values me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	← Social Support
	I am given help with tasks around the house when I ask	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	I talk problems over with my family or friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	← Problem-Focused Coping
	I use techniques to help avoid being distracted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	I can identify important elements of problems I encounter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	When faced with a problem I use a systematic approach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	When faced with the need to make a decision I try to think through the consequences of choices I might make	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	I am able to put my studies into perspective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	← Academic Strain
	Once they are set, I am able to stick to my priorities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	I periodically re-examine or re-organise my study methods and time schedule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	The quality of my academic work is good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	The quality of my academic work is good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	I find myself getting behind in my work lately	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	I make errors or mistakes in my work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	I am able to complete all my assigned tasks on time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	I am able to concentrate on my studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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USQ Health and Wellbeing Survey

Impact of Factors on Academic Performance

Please indicate from the following factors, the extent to which they have affected your academic performance within the last 12 months (including results and study progression). Please indicate your response, by using the following numbers in the boxes provided.

- 1 - this factor has resulted in me needing to take a significant break from study
- 2 - this factor has resulted in me needing to drop a course / receiving an incomplete grade
- 3 - this factor has resulted in me getting a lower grade for a course
- 4 - this factor has resulted in me getting a lower mark for an assignment / exam
- 5 - this factor has affected me personally, but not with my study
- 6 - this factor has not affected me at all

	1	2	3	4	5	6
Alcohol use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Illicit drug use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relationship with partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relationship with family member	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Relationship with friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Depression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxiety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mental Health Problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chronic Pain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Addiction problems (e.g. gambling)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Problems sleeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Juggling family and work responsibilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family member illness / concern	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A chronic health condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Living arrangements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loss of employment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Needing to increase work hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Loss of loved one	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participation in recreational activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal illness (e.g. flu, cold)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eating disorder / problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being away from loved ones due to study commitments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal injury	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Legal problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning difficulties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sexual / reproductive issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other, please specify: |

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Prize Draw Entry

This survey has been part of a PhD project at USQ. For those students who are studying by external / online WEB mode, if you feel that you have more to say about your health and wellbeing as a distance student, then we would like to hear from you.

Study 2 will be an in-depth study looking at how distance students' view the relationship between health and study and what influences their health. It also will provide an insight into what students think are the main health priorities for distance students and how the university might be able to address these.

Information on this part of the study can be sent to you via email, if you agree to be contacted with a follow up email using your student email address.

	Yes	No
I agree to be contacted in relation to Study 2	<input type="radio"/>	<input type="radio"/>

Thank you for time!! By completing this survey, you are now eligible to enter the prize draw. To be entered into the draw, please provide your student name and email address. Your details will not be connected with your survey responses and will remain confidential.

Please provide your full name:	<input type="text"/>
Please provide your student email address:	<input type="text"/>

	\$300 USQ Book Voucher	iPod Classic
Please indicate your prize preference	<input type="radio"/>	<input type="radio"/>

Please note that all responses will be treated confidentially. Thank you for taking the time to participate in this pilot study. There will be a few questions regarding the Pilot Survey to follow after submitting your response below.

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Pilot Survey Questions

	Very Poor	Poor	Average	Good	Excellent
How do you rate the user friendliness of the survey?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How long did it take you to complete the survey from start to finish?	<input style="width: 100%;" type="text"/>				
	Too Long	Slightly Long	Satisfactory	Good	Excellent
How do you rate the time taken to complete the survey?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Very Difficult	Slightly Difficult	Average	Slightly Easy	Very Easy
To what extent did you find it difficult to progress through the survey?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Very Uncomfortable	Slightly Uncomfortable	Slightly Comfortable	Very Comfortable
How comfortable did you feel overall in responding to questions in the survey?		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Yes	No	If yes, please indicate the number of the question		
Did any survey items or questions require you to think too long or hard before responding?	<input type="radio"/>	<input type="radio"/>	<input style="width: 100%;" type="text"/>		
	Yes	No	If yes, please type issue here		
Were there any health and wellbeing issues not included in the survey that you think should be included?	<input type="radio"/>	<input type="radio"/>	<input style="width: 100%;" type="text"/>		

	Yes	No	If yes, please indicate in the box which item or question		
Were there any items which caused you to feel embarrassment?	<input type="radio"/>	<input type="radio"/>	<input style="width: 100%;" type="text"/>		
	Yes	No	If yes, please indicate which item or question		
Were there any questions that caused you to feel confused?	<input type="radio"/>	<input type="radio"/>	<input style="width: 100%;" type="text"/>		
	Yes	No	Unsure		
Overall, did you understand the purpose of the survey?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		

[Submit Pilot Survey results](#)

ABN: 40 234 732 081 | CRICOS: QLD 00244B | NSW 02225M | © University of Southern Queensland 2007 | [Privacy](#) | [Feedback](#) | [Contact us](#)

The following websites within Australia may be of assistance in improving your health and wellbeing

University of Southern Queensland - Student Services
www.usq.edu.au/student-services/

Student Guild
www.studentguild.com.au

Clive Berghoffer Recreation Centre
www.usqworks.com.au

Alcohol Consumption
www.alcohol.gov.au

Drugs
www.health.gov.au/internet/drugs/publishing.nsf/Content/home-1

Mental Health
www.beyondblue.org.au

Lifeline
www.lifeline.org.au

Sexual Health
www.sti.health.gov.au

Healthy Eating
www.health.gov.au/internet/healthyactive/publishing.nsf/Content/healthyweight

Smoking
www.quitnow.info.au

National Domestic Violence Hotline


www.ndvh.org

Cancer
www.cancer.org.au

Heart Foundation
www.heartfoundation.org.au

Appendix F

Copy of Ethics Approval for Study 1



USQ
AUSTRALIA

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GRICOS: QLD 00244B NEW 02225M

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OFFICE OF RESEARCH AND HIGHER DEGREES
Amy McCabe
Ethics Committee Support Officer
t37; 4631 2660
ethics@usq.edu.au

Monday 20th August 2012

Dear Mrs Beccaria,

The Ethics Chair has recently reviewed your application for amendments to approved project 'Exploring the Health Needs of Distance Students within a Social and Academic Context' (H10REA137) as stated in your memorandum dated 03/06/2011. The requested amendments have been endorsed and full ethics approval has been granted.

Your amendment approval number is H10REA137.1

Ethics approval for the project expires on 08/06/2012.


The standard conditions of this approval are:

- (a) conduct the project strictly in accordance with the proposal submitted and granted ethics approval, including any amendments made to the proposal required by the HREC
- (b) advise (email: ethics@usq.edu.au) immediately of any complaints or other issues in relation to the project which may warrant review of the ethical approval of the project
- (c) make submission for approval of amendments to the approved project before implementing such changes
- (d) provide a 'progress report' for every year of approval
- (e) provide a 'final report' when the project is complete
- (f) advise in writing if the project has been discontinued.

For (c) to (e) proformas are available on the USQ ethics website: <http://www.usq.edu.au/research/ethicsbio/human>.

Please note that failure to comply with the conditions of approval and the National Statement on Ethical Conduct in Human Research (2007) may result in withdrawal of approval for the project.

You may now implement the amendments. I wish you all the best for the conduct of the project.



Amy McCabe
Ethics Committee Support Officer
Office of Research and Higher Degrees

toowoomba • Springfield • Fraser Coast

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Appendix G

Summary of Measures and Survey Items for Study 1

Variable Category	Variable	Measure	Corresponding Survey Items in Appendix H
General Health	Health Value	Health Value Scale (Lau et al, 1986)	Section “ Rating your Own Health ”, page 3 of Study 1 survey, items (16-19). 4 items, 7-point likert scale
	Self-Reported Health	Excellent Very good Good Fair Poor	Section “ Rating your Own Health ”, page 3 of Study 1 survey, item 15. 1 item. 5 possible responses.
	Wellbeing	Satisfaction with Life Scale (Diener et al., 1985)	Page 23 of Study 1 survey, 5 items (226-230), 7-point likert scale.
Health-Promoting Behaviours	Nutrition Physical Activity Spiritual Growth Interpersonal Relations Stress Management Health Responsibility	Health-Promoting Lifestyle II Profile (Walker et al., 1985)	Section “ Health Behaviours of University Students ”, pages 10-13 of Study 1 survey. 52 items, 4-point likert scale. Nutrition – items (83,89,95,101,107,113,119,125,131) Physical Activity – items (85,91,97,103,109,115,121,127) Spiritual Growth – items (87,93,99,105,111,117,123,129,133) Interpersonal Relations – items (82,88,94,100,106,112,118,130)

Note. Variables in **bold** were included in Study 1 but not in original USQ Health and Wellbeing Survey

Appendix G: Summary of Measures and Survey Items for Study 1 (continued)

Variable Category	Variable	Measure	Corresponding Survey Items in Appendix H
Health-promoting behaviours	Nutrition	Health-Promoting Lifestyle II Profile (Walker et al., 1985)	Stress Management – items (86,92,98,104,110,116,122,128) Health Responsibility – items (84,90,96,102,108,114,120,126,132)
	Physical activity		
	Spiritual growth		
	Interpersonal relations		
	Stress management		
	Health responsibility		
Health-risk behaviours	Body mass index	$\frac{\text{Weight (kg)}}{\text{Height (m)}^2}$	Section “ Physical Health ”, page 5 of Study 1 survey (items 30-33). 3 items (height, weight, pregnant status).
	Psychological distress	Kessler Psychological Distress Scale (Kessler et al., 2002)	Section “ Mental Health ”, page 4 of Study 1 survey, items (20-29) 10 items, 5-point likert scale
	Smoking status	Current smoker Ex-smoker Never smoker	Section “ Smoking ” page 6 of Study 1 survey. 3 items (34-36)
	Hazardous drinking	AusAUDIT (Degenhardt et al., 2001)	Section “ Alcohol Consumption ” page 7 of Study 1 survey (49-58). 10 items. 6 items (5-point likert scale), 2 items (5 possible responses), 2 items (3 possible responses).

Note. Variables in **bold** were included in Study 1 but not in original USQ Health and Wellbeing Survey

Appendix G: Summary of Measures and Survey Items for Study 1 (continued)

Variable Category	Variable	Measure	Corresponding Survey Items in Appendix H
Student stress	Academic Lifestyle & financial Personal Interpersonal relationship	Student Stress, Strain and Coping Scale (SSSC, Sarah, 1997)	Section “ Stressors and Strains of University Students ” pages 16 -18 of Study 1 survey, 5-point likert scale. Academic – items (154-162) Lifestyle & financial – items (163-165, 167-169) Personal – items (170-173) Interpersonal relationship – items (174-177)
Student coping	Recreation and self-care Social support Problem focused		Recreation and self-care – items (178-185) Social support – items (186-193) Problem focused – items (194-201)
Student strain	Academic Psychological/interpersonal Physical		Academic – items (202-209) Psychological/interpersonal – items (210, 212 – 218) Physical – items (211, 219-225)
Psychological	General self-efficacy	General Self-Efficacy Scale (Schwarzer & Renner, 2009)	Page 9 of Study 1 survey. 10 items, 4-point likert scale Items (72-81).
	Positive & negative affect	Positive and Negative Affect Schedule (PANAS) (Watson et al., 1988)	Pages 14-15 of Study 1 survey. 20 items, 5-point likert scale. Items (134-153).

Note. Variables in **bold** were included in Study 1 but not in original USQ Health and Wellbeing Survey


Appendix G: Summary of Measures and Survey Items for Study 1 (continued)

Variable Category	Variable	Measure	Corresponding Survey Items in Appendix H
Academic	Accessing USQ Support	Subscale Student Learning and Support Services Survey (Ballantine, 2008)	Section “ Support Services for Students ” page 24 of Study 1 survey. 10 items, 5-point likert scale. Items (231-240)
	Intention to leave	Subsection of Australasian Survey of Student Engagement Questionnaire (AUSSE)	Page 25 of Study 1 survey. Item 241 – Intention to leave Item 242 – Reasons for leaving Item 243 – Plans for study

Note. Variables in **bold** were included in Study 1 but not in original USQ Health and Wellbeing Survey.

Appendix H

Copy of USQ Health and Wellbeing Survey (Study 1)

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USQ Health and Wellbeing Survey									
The University of Southern Queensland Plain Language Statement and Consent Form									
Page 1 of 2									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">To:</td> <td style="padding: 5px;">University of Southern Queensland Students</td> </tr> <tr> <td style="padding: 5px;">Full Project Title:</td> <td style="padding: 5px;">The experience of distance education and its influence on students' health risk and health promoting behaviours, academic performance, stressors, strains and coping</td> </tr> <tr> <td style="padding: 5px;">Principal Researcher:</td> <td style="padding: 5px;">Mrs Lisa Beccaria (PhD Student) - Lecturer USQ Department of Nursing and Midwifery</td> </tr> <tr> <td style="padding: 5px;">Supervisors:</td> <td style="padding: 5px;">Professor Cath Rogers-Clark / Associate Professor Lorelle Burton</td> </tr> </table>	To:	University of Southern Queensland Students	Full Project Title:	The experience of distance education and its influence on students' health risk and health promoting behaviours, academic performance, stressors, strains and coping	Principal Researcher:	Mrs Lisa Beccaria (PhD Student) - Lecturer USQ Department of Nursing and Midwifery	Supervisors:	Professor Cath Rogers-Clark / Associate Professor Lorelle Burton	
To:	University of Southern Queensland Students								
Full Project Title:	The experience of distance education and its influence on students' health risk and health promoting behaviours, academic performance, stressors, strains and coping								
Principal Researcher:	Mrs Lisa Beccaria (PhD Student) - Lecturer USQ Department of Nursing and Midwifery								
Supervisors:	Professor Cath Rogers-Clark / Associate Professor Lorelle Burton								
Dear Students, You are being asked to participate in a USQ Research Study. This study is in 2 parts . <div style="text-align: center;"> Part 1: USQ Health and Wellbeing Survey (available to all USQ students over the age of 18 years) Part 2: Me, My Health, My Study Interview (available only to USQ students studying by distance / external mode) </div>									
Part 1 USQ Health and Wellbeing Survey This is an online survey conducted as part of Doctor of Philosophy studies. The purpose of this survey is to explore health behaviours of all students studying across a variety of study modes within the university. It is also aimed at understanding the factors which influence your health and wellbeing as a student from both a social and academic perspective. The study hopes to identify areas of health needs or issues, which the university may as a result then, develop strategies to improve student health and wellbeing. At the end of the survey, if you are a distance / external student, you will be given the opportunity to indicate your interest in participating in (Part 2) - Me, My Health and My Study Project . Please refer to Part 2 information .									

This online survey should take approximately 30 mins to complete. At the completion of this survey, you will be eligible to go into a draw to receive a prize of either a \$350 USQ Book Voucher or an iPod Classic.

You must be at least 18 years of age to participate in this survey. This survey can be completed by any USQ student regardless of study mode. The survey is being administered by the USQ Planning and Quality Office.

This survey is voluntary. In this survey, you will be asked about your grade point average. In addition, we would like to support this information by obtaining data from your student record. To do this, we need your consent for us to use your student number to obtain your grade point average. No other personal information will be accessed via this process. Any information collected about you in this survey will be kept confidential.

If you do not wish to take part in this survey, you are not obliged to. If you as a student, find some of the questions embarrassing or cause you any discomfort, you may choose not to continue completing the survey. If you do feel that you require support for concerns that you have about your health and wellbeing, you may wish to contact [USQ Student Services](#). It can not be guaranteed that you will directly benefit from this research, you will however, be contributing to the knowledge of health needs of university students.

Your decision whether to take part or not the take part, will not affect your relationship with the University of Southern Queensland. You will be able to withdraw your data at any time during the survey if you change your mind. In any publication, information will be provided in such a way that you can not be identified.

Before you make your decision to participate, a member of the research team will be available to answer any questions you have about the research project. You can ask for any information you want. Should you have any queries regarding the process or conduct of this research, you can contact the principle researcher.

Principal Researcher:
 Lisa Beccaria
 PhD student (07) 46312753, lisa.beccaria@usq.edu.au

Please continue to the next page for Part 2 of the Plain Language Statement and Consent Form.

USQ Health and Wellbeing Survey

Page 2 of 2

Part 2 Me, My Health, My Study (For students studying by Distance/External or Web Mode)

The purpose of this research is to explore in-depth perceptions from distance/external students about the influences from home or study which impact on health behaviours. In addition, it will explore how you as a student perceive the university's role in promoting health and wellbeing. This is important so that universities can develop strategies which best meet the diverse needs of distance students. This has the potential to have a positive impact on future students' study experiences. At the end of the Part 1 online survey, you will be given the opportunity to indicate your interest in participating in this study (Part 2). If you tick the box indicating your interest, the researcher will contact you via email and provide a consent form for you to complete. If you do not wish to take part in Part 2 you are not obliged to. You can complete Part 1 (the online survey) without completing Part 2 if you wish. It is anticipated that student interviews will be held by 31 December, 2011.

The first 10 students who indicate their willingness to be interviewed for Part 2 of this research will be contacted by the Principal Researcher via email to organise a time for the interview. All students who complete the interview will have their names entered into a raffle draw for a \$25 USQ book voucher. The winner will be notified via email at the completion of the study. **At this stage, you are making a decision whether or not to participate in Part 1 - The USQ health and Wellbeing Survey. Once you understand what the project is about and you agree to take part in it, please follow the consent instructions below.** You can indicate your willingness to be involved in the follow-up interview (Part 2 of the study) at the completion of this survey (Part 1).

Your participation in this project will involve the following:

- 1 x personal phone interview with the researcher (for up to 1 hour duration)
- the potential for a follow up phone interview (approximately 30 minutes) to clarify any comments from the interview to assist in data analysis.

This study is voluntary, and your decision whether to take part or not to take part, will not affect your relationship with the University of Southern Queensland. When discussing thoughts and feelings experiences as a student, there is the possibility that you could feel some level of discomfort or distress. If you do, you have the right to cease your involvement in the study at any time and if you wish, seek counselling from [USQ Student Services](#). You may withdraw at any time from the study, and your data also is withdrawn including data from personal interviews and photographs, except data collected during the focus group. Distance / external students may if they choose complete Part 1 and not Part 2 of this study.

Principal Researcher:

Lisa Beccaria
PhD student 07) 46312753, lisa.beccaria@usq.edu.au

Supervisors:

Professor Cath Rogers Clark +617 4631 2005 , Cath.Rogers-Clark@usq.edu.au
Head of Department Nursing and Midwifery USQ, Faculty of Sciences

Associate Professor Lorelle Burton +617 4631 2853 , Lorelle.Burton@usq.edu.au
Associate Dean (Learning and Teaching), Faculty of Sciences

If you have any ethical concerns with how the research is being conducted or any queries about your rights as a participant please feel free to contact the University of Southern Queensland Ethics Officer on the following details.

Ethics and Research Integrity Officer
Office of Research and Higher Degrees
University of Southern Queensland
West Street, Toowoomba 4350
Ph: +61 7 4631 2690
Email: ethics@usq.edu.au

Once you understand what the project is about and if you agree to take part in it, it is asked that you select yes below.

You are making a decision whether or not to participate in Part 1, this online survey. By selecting yes below you indicate that, you have read the information provided and have decided to participate.

YES or **NO**

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USQ Health and Wellbeing Survey Page 1 of 2

1. What is your gender? Male Female

2. What is your age in years?

3. What is your employment status? Permanent Full-time Permanent Part-time Casual Fixed contract Not currently employed

If you are not currently employed please write N/A in the next two questions.

4. How many jobs are you currently working?

5. What is the total number of hours you would work in an average week (taking into account all of your paid employment combined)?

6a. Do you identify with being Aboriginal or Torres Strait Islander? Yes No

6b. Do you identify with being from a non-English speaking background? Yes No

6c. Are you a permanent resident or citizen of Australia? Yes No If no, what is your permanent country of residence

7. What is your current residential postcode in Australia?

8. How many hours per week would you spend providing care to dependents or family members?

9. What is your marital status? Single Married De Facto Separated Divorced Widowed

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USQ Health and Wellbeing Survey Page 2 of 25

10. What level of program are you currently enrolled in? Higher degree research Higher degree coursework Other postgraduate Bachelor Other undergraduate Enabling / Non-Award

11. What is your primary mode of study? Oncampus (ONC) Toowoomba Oncampus (ONC) Springfield Oncampus (ONC) Fraser Coast External (EXT) Online (WEB) Mixed / Flexible (Multimodal)

12. Which section of the university are you enrolled in? Faculty

13. How many courses in total have you enrolled in for this academic year? (across S1, S2, S3 2011)

14. How many courses have you successfully completed within your current program?

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USQ Health and Wellbeing Survey Page 3 of 25

Rating your Own Health

15. Please indicate how you would rate your health in general at the moment.

	Poor	Fair	Good	Very Good	Excellent	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	← Self-Reported Health

Please read the following four statements and indicate the extent to which you agree with them.

	Strongly Disagree	Disagree	Somewhat Disagree	Undecided	Somewhat Agree	Agree	Strongly Agree	
16. If you don't have your health, you don't have anything.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	↑ Health Value
17. There are many things I care about more about than my health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
18. Good health is only of minor importance in a happy life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
19. There is nothing more important than	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

good health.

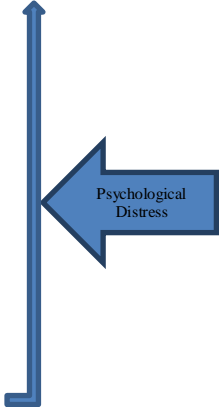
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USQ Health and Wellbeing Survey

Mental Health

The following questions measure your level of psychological distress. Please indicate how often you have experienced the following, within the past 4 weeks.

Within the past 4 weeks :	All the time	Most of the time	Some of the time	A little of the time	None of the time
20. About how often did you feel tired out for no good reason?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. About how often did you feel nervous?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. About how often did you feel so nervous that nothing could calm you down?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. About how often did you feel hopeless?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. About how often did you feel restless or fidgety?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. About how often did you feel so restless you could not sit still?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. About how often did you feel depressed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. About how often did you feel that everything was an effort?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. About how often did you feel so sad that nothing could cheer you up?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. About how often did you feel worthless?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



What is my score:

What does my score means?	What should I do about my score?
10-15 : Low Level of Psychological Distress	Maintain your mental health with ideas such as exercising, enjoying a hobby, connecting with community, setting realistic goals, and having a positive attitude. You may like to look here for more ideas. http://www.mhca.org.au/documents/AboutMentalHealth/FactSheet-BeActiveForYourMentalHealth_000.pdf
16-21 : Moderate Level of Psychological Distress	You may benefit from accessing general information and strategies to improve your mental health. www.beyondblue.org
22-29 : High Level of Psychological Distress	You may benefit from accessing general information and strategies to improve your mental health. www.beyondblue.org
30-50 : Very High Level of Psychological Distress	Whilst general information and strategies may still help, it is strongly recommend that you see your doctor or other health professional. USQ Student Services

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Physical Health

30. What is your height? (Please indicate height approx. in centimetres)

31. What is your current weight? (Please indicate weight approx. in kilograms)

32. Are you currently pregnant? Yes No Not Applicable

33. If yes, what is usually your pre-pregnant weight (Please indicate weight approx. in kilograms)

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USQ Health and Wellbeing Survey Page 6 of 25

Smoking

34. Over your lifetime would you have smoked at least 100 cigarettes? Yes No

35. In the past, have you ever been a daily smoker? Daily At least weekly (not daily) Less often than weekly Not at all

36. How often do you currently smoke cigarettes, cigars or pipes?

The following are some situations in which certain people may be tempted to smoke. Please indicate whether you are sure that you could refrain from smoking in each situation:

	Not at all sure	Not very sure	More or less sure	Fairly sure	Absolutely sure
37. When I feel nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. When I feel depressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. When I feel angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. When I feel anxious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. When I want to think about a difficult problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. When I feel the urge to smoke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. When having a drink with friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. When celebrating something	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. When drinking beer, wine or other spirits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. When I am with smokers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. After a meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. When having a coffee or tea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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USQ Health and Wellbeing Survey

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Alcohol Consumption (Degenhardt, Conigrave, Wutzke & Saunders, 2001)

The following questions relate to alcohol consumption. The following table may help you to know how many standard sized drinks you consume according to the Australian Alcohol guidelines (2009). Because alcohol can affect many aspects of your health, it is important to know how much you usually drink and if you have experienced any problems. We understand that others may not think that you should drink at all, but it is important in assessing your health and what you actually do. Please try to be as honest and accurate as you can be.

Standard Drinks Guide

1.5	1	0.8	1.5	1	0.8	1	0.7	0.5	1.5
375ml Full Strength Beer 4.9% Alc/Vol	375ml Mid Strength Beer 3.5% Alc/Vol	375ml Light Beer 2.7% Alc/Vol	375ml Full Strength Beer 4.9% Alc/Vol	375ml Mid Strength Beer 3.5% Alc/Vol	375ml Light Beer 2.7% Alc/Vol	200ml New York Full Strength Beer 4.0% Alc/Vol	200ml New York Mid Strength Beer 3.0% Alc/Vol	200ml New York Light Beer 2.0% Alc/Vol	150ml Standard serve of Sparkling Wine Champaigne 11.5% Alc/Vol
1.5	1.5	1	22	0.3	1	1.8	7	38	
375ml Pre-mix Spirits 2% Alc/Vol	340ml Alcoholic Soda 5.5% Alc/Vol	30ml Spirit Mix 40%	700ml Bottle of Spirits 40% Alc/Vol	60ml Pure Cherry Glass 18% Alc/Vol	100ml Standard Serve of Wine 12% Alc/Vol	160ml Average Restaurant Serve of Wine 12% Alc/Vol	750ml Bottle of Wine 12% Alc/Vol	4 Litres Cask Wine 12% Alc/Vol	

*NOTE: WA, ACT = 4.8% Alc/Vol; VIC, Q.L.D., TAS = 4.7% Alc/Vol; NT = 4.5% Alc/Vol; SA = 4.6% Alc/Vol

Never
 Monthly or less
 Once a week or less
 2 to 4 times a week
 5 or more times a week

49. How often do you have a drink containing alcohol? 1 2 3 or 4 5 or 6 7 or more

50. How many standard drinks containing alcohol do you typically have on a day when you are drinking? Never Less than monthly Monthly Weekly Daily or almost daily

51. How often do you have 6 or more standard drinks on one occasion?

52. How often during the last year have you found that you were not able to stop drinking once you had started?

53. How often during the last year have you failed to do what was normally expected of you because of your drinking?

54. How often during the last year have you needed an alcoholic drink in the morning to get yourself going after a heavy drinking session?

55. How often have you had a feeling of guilt or regret after drinking?

56. How often have you been unable to remember what happened the night before because of your drinking?

57. Have you or someone else been injured because of your drinking? No Yes, but not in the last year Yes, in the last year

58. Has a friend, doctor or other health worker been concerned about your drinking or suggest you cut down?

Hazardous Drinking

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How certain are you that you could overcome the following barriers?

	Very uncertain	Rather uncertain	Rather certain	Very certain
59. I can manage to stick to healthy foods even if I need a long time to develop the necessary routines.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60. I can manage to stick to healthy foods even if I have to try several times until it works.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
61. I can manage to stick to healthy foods even if I have to rethink my entire way of nutrition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62. I can manage to stick to healthy foods even if I do not receive a great deal of support from others when making my first attempts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
63. I can manage to stick to healthy foods even if I have to make a detailed plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64. I can manage to carry out my exercise intentions even when I have worries or problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
65. I can manage to carry out my exercise intentions even if I feel depressed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
66. I can manage to carry out my exercise intentions even when I feel tense.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
67. I can manage to carry out my exercise intentions even when I am tired.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
68. I can manage to carry out my exercise intentions when I am busy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
69. I am certain that I can control myself to reduce my alcohol consumption.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
70. I am certain that I can control myself to not to drink any alcohol at all.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
71. I am certain that I can control myself to drink only at special occasions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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The following statements may or may not be true for you in relation to your ability to cope and adapt to daily hassles and stressful life events. Please indicate from the following; not at all, hardly true, moderately true, or exactly true.

	Not at all	Hardly true	Moderately true	Exactly true
72. I can always manage to solve difficult problems if I try hard enough.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
73. If someone opposed me, I can find the means and ways to get what I want.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
74. It is easy for me to stick to my aims and accomplish my goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
75. I am confident that I could deal efficiently with unexpected events.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
76. Thanks to my resourcefulness, I know how to handle unforeseen situations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
77. I can solve most problems if I invest the necessary effort.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
78. I can remain calm when facing difficulties because I can rely on my coping abilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
79. When I am confronted with a problem, I can usually find several solutions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
80. If I am in trouble, I can usually think of a solution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
81. I can usually handle whatever comes my way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

General Self-Efficacy

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Health Behaviours of University Students (Walker, Sechrist & Pender, 1995)

This part of the survey contains statements about your present way of life or personal habits. Please respond to each item as accurately as possible, and try not to skip any item. Indicate the frequency with which you engage in each behaviour, by indicating: **Never**, **Sometimes**, **Often** or **Always**

	Never	Sometimes	Often	Always
82. Discuss my problems and concerns with people close to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
83. Choose a diet low in fat, saturated fat, and cholesterol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
84. Report any unusual signs or symptoms to a physician or other health professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
85. Follow a planned exercise program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
86. Get enough sleep	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
87. Feel I am growing and changing in positive ways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
88. Praise other people easily for their achievements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
89. Limit use of sugars and food containing sugar (sweets)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
90. Read or watch TV programs about improving health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
91. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
92. Take some time for relaxation each day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
93. Believe that my life has purpose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
94. Maintain meaningful and fulfilling relationships with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
95. Eat 6-11 servings of bread, cereal, rice and pasta each day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Health Promoting Behaviours

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	Never	Sometimes	Often	Always
96. Question health professionals in order to understand their instructions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
97. Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
98. Accept those things in my life which I cannot change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
99. Look forward to the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
100. Spend time with close friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
101. Eat 2-4 servings of fruit each day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
102. Get a second opinion when I question my health care provider's advice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
103. Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
104. Concentrate on pleasant thoughts at bedtime	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
105. Feel content and at peace with myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
106. Find it easy to show concern, love and warmth to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
107. Eat 3-5 servings of vegetables each day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
108. Discuss my health concerns with health professionals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
109. Do stretching exercises at least 3 times per week	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
110. Use specific methods to control my stress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Health Promoting Behaviours

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	Never	Sometimes	Often	Always	
111. Work toward long-term goals in my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
112. Touch and am touched by people I care about	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
113. Eat 2-3 servings of milk, yogurt or cheese each day group each day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
114. Inspect my body at least monthly for physical changes/danger signs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
115. Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
116. Balance time between work and play	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
117. Find each day interesting and challenging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
118. Find ways to meet my needs for intimacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
119. Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs and nuts group each day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
120. Ask for information from health professionals about how to take good care of myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
121. Check my pulse when exercising	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
122. Practice relaxation or meditation for 15 - 20 minutes daily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
123. Am aware of what is important to me in life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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	Never	Sometimes	Often	Always	
124. Get support from a network of caring people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
125. Read labels to identify nutrients, fats, sodium content in packaged food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
126. Attend educational programs on personal health care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
127. Reach my target heart rate when exercising	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
128. Pace myself to prevent tiredness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
129. Feel connected with some force greater than myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
130. Settle conflicts with others through discussion and compromise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
131. Eat breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
132. Seek guidance or counselling when necessary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
133. Expose myself to new experiences and challenges	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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This scale consists of words that describe different feelings and emotions. Please read each item and then select the appropriate response which indicates the extent to which you have felt this way during the past week.

	Very slightly or not at all	A little	Moderately	Quite a bit	Very much
134. Interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
135. Distressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
136. Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
137. Upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
138. Strong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
139. Guilty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
140. Scared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
141. Hostile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
142. Enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
143. Proud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Positive and Negative Affect

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Please read each item and then select the appropriate response which indicates the extent to which you have felt this way during the past week.

	Very slightly or not at all	A little	Moderately	Quite a bit	Very much
144. Irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
145. Alert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
146. Ashamed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
147. Inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
148. Nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
149. Determined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
150. Attentive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
151. Jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
152. Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
153. Afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Positive and Negative Affect

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This part of the survey asks you to consider a number of statements which relate to personal and academic stressors and strains and also strategies you use to cope with these. Please consider how frequently the statements are true for you, indicating **never true, rarely true, occasionally true, usually true, always true**.

	Never True	Rarely True	Occasionally True	Usually True	Always True	
154. I become anxious when exam time draws near.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Academic Stress
155. I find my course workload is overly demanding.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
156. I think about failing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
157. I feel that I am expected to do too many things at once.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
158. I feel I would benefit from discussing course material with other students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
159. I have experienced delays and / or frustration in dealing with administration e.g., registration, waiting for phone calls.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
160. I have experienced frustration due to limited resources and study material	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
161. I don't have enough time to do the things that I like	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
162. I am often distracted at home when I try to study	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Lifestyle/Financial Stress
163. Paying the bills is of concern to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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	Never True	Rarely True	Occasionally True	Usually True	Always True	
164. I am concerned about my ability to pay for books and photocopying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Lifestyle/Financial Stress
165. I am concerned about finding a job when I leave University	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
166. I am happy about my personal appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Lifestyle/Financial Stress
167. I am concerned about my personal health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
168. My eating habits are of concern to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Personal Stress
169. I am concerned about not getting enough exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
170. I feel confident within myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Personal Stress
171. I am able to openly express my opinion to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
172. I have difficulty in approaching and meeting other students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
173. I easily make friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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	Never True	Rarely True	Occasionally True	Usually True	Always True	
174. I feel pressure to spend time with my family or partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Interpersonal/Relationship Stress
175. I find that close personal relationships are hard to develop and/ or maintain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
176. My family are easy to get along with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
177. I experience conflict with my family and / or partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
178. When I need a break I take one	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Recreation and Self-Care Coping
179. I am able to do what I want to do in my spare time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
180. A lot of my free time is spent attending performances (e.g., sporting events, theatre, movies, concerts, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
181. I spend a lot of my free time in participant activities (e.g., sports, music, painting, woodworking, sewing, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
182. I spend enough time in recreational activities to satisfy my needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
183. I get the sleep I need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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	Never True	Rarely True	Occasionally True	Usually True	Always True	
184. I set aside time to do the things I really enjoy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Recreation and Self-Care Coping
185. I take regular breaks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
186. There is at least one sympathetic person with whom I can discuss my concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Social Support
187. There is at least one sympathetic person with whom I can discuss my academic problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
188. I feel I have at least one good friend I can count on	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
189. I have a circle of friends who value me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
190. I am able to discuss my study problems with at least one other student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
191. There is at least one important person to me who values me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
192. I am given help with tasks around the house when I ask	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
193. I talk problems over with my family or friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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	Never True	Rarely True	Occasionally True	Usually True	Always True	
194. I use techniques to help avoid being distracted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Problem Focused Coping
195. I can identify important elements of problems I encounter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
196. When faced with a problem I use a systematic approach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
197. When faced with the need to make a decision I try to think through the consequences of choices I might make	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
198. I am able to put my studies into perspective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
199. Once they are set, I am able to stick to my priorities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Academic Strain
200. I periodically re-examine or re-organise my study methods and time schedule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
201. I make decisions and am happy with my choice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
202. The quality of my academic work is good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
203. I find myself getting behind in my work lately	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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	Never True	Rarely True	Occasionally True	Usually True	Always True	
204. I make errors or mistakes in my work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Academic Strain
205. I am able to complete all my assigned tasks on time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
206. I am able to concentrate on my studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
207. I am bored with my studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
208. I have failed an exam or assignment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Psychological/Interpersonal Strain
209. I feel overwhelmed by my studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
210. I feel emotionally drained from studying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Psychological/Interpersonal Strain
211. So many thoughts run through my head at night, I have trouble falling asleep	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
212. I have been feeling tense	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
213. Lately, I respond badly in situations that normally wouldn't bother me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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	Never True	Rarely True	Occasionally True	Usually True	Always True	
214. Lately, I have been feeling anxious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Psychological/Interpersonal Strain
215. Lately, I have been feeling depressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
216. I have been withdrawing from people lately	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
217. Lately, my relationships with people are good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
218. I quarrel with my partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
219. Lately, I feel tired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Physical Strain
220. I have aches and pains I cannot explain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
221. I experience headaches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
222. I have trouble falling and staying asleep	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
223. I feel energetic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
224. I feel nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
225. My eating habits are erratic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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Below are five statements which you may agree or disagree with. Using the scale, please indicate your agreement with each item.

	Strongly disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	
226. In most ways my life is close to ideal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Wellbeing
227. The conditions of my life are excellent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
228. I am satisfied with my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
229. So far I have got the important things I want in life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
230. If I could live my life again, I would change almost nothing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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Support Services for Students

Please indicate the extent to which you have used the following support services provided by the university.

	Never	Once only	Infrequently	Frequently	Very Often	
231. Counselling Services provided by Student Services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Accessing Student Support
232. Career and Employment Services provided by Student Services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
233. Welfare services provided by Student Services eg loans, accommodation, Youth Allowance/Austudy information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
234. Medical Services provided by Student Services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
235. Support for students with disabilities provided by Student Services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
236. Support from USQ International for International students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
237. Support services provided by Student Services for International students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
238. Support from Kumbani/Ngurpai Lag Higher Education Centre for Aboriginal and Torres Strait Islander students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
239. Study skills development and study problem support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
240. Grievance support (eg harassment, discrimination, complaints about academic or general matters)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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241. In this academic year have you considered leaving this university? No - skip to the next question Yes

242. If yes, Please select from the following reasons. You can choose more than one reason.

Academic exchange Academic support Administrative support Boredom/Lack of interest Career prospects Change of direction

Commuting difficulties Difficulty paying fees Difficulty with workload Family responsibilities Financial difficulties Gap year/deferred

Government assistance Graduating Health or stress Institution reputation Moving residence Need a break

Need to do paid work Other opportunities Paid work responsibilities Personal reasons Quality concerns Received other offer

Social reasons Standards too high Studylife balance Travel or tourism Other

Other

243. What are your plans for next year? Please indicate which of the following best represents your study plans.

Continue with current study

Shift to another university

Move to vocational education and training

Leave before finishing qualification

Change to another qualification

Leave having completed qualification

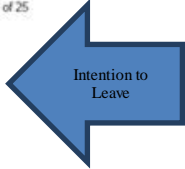
Leave to do paid work

Leave to take time off

Connect at work

Other (please specify)

[Click here to submit and enter the draw](#)




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Thank you for your time, your survey response has now been saved.

Please select a choice from the list below to continue:

- [I am an external student and would like to participate in Study 2 or](#)
- [I am an external student and do not want to participate in Study 2 or](#)
- [I am NOT an external student](#)

Exit Survey



UNIVERSITY OF
SOUTHERN QUEENSLAND

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USQ Health and Wellbeing Survey Competition Entry

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This survey has been part of a PhD project at USQ. Thank you for time!! By completing this survey, you are now eligible to enter the prize draw. To be entered into the draw, please provide your student name and email address. Your details will not be connected with your survey responses and will remain confidential.

Yes
No

I would like to be included in the competition

Please provide your full name:

Please provide your student email address:

\$350 USQ Book Voucher
iPod Classic

Please indicate your prize preference

Please note that all responses will be treated confidentially. Thank you for taking the time to participate in this study.

The following websites within Australia may be of assistance in improving your health and wellbeing

University of Southern Queensland - Student Services
www.usq.edu.au/student-services/

Student Guild
www.studentguild.com.au

Clive Berghoffer Recreation Centre
www.usqworks.com.au

Alcohol Consumption
www.alcohol.gov.au

Drugs
www.health.gov.au/internet/drugs/publishing.nsf/Content/home-1

Mental Health
www.beyondblue.org.au

Lifeline
www.lifeline.org.au

Sexual Health
www.sti.health.gov.au

Healthy Eating
www.health.gov.au/internet/healthyactive/publishing.nsf/Content/healthyweight

Smoking
www.quitnow.info.au

National Domestic Violence Hotline

www.ndvh.org

Cancer
www.cancer.org.au

Heart Foundation
www.heartfoundation.org.au

ABN: 40 234 732 081 | CRICOS: QLD 00244B | NSW 02225M | © University of Southern Queensland 2007 | [Privacy](#) | [Feedback](#) | [Contact us](#)

Appendix I

Plain Language Statement and Consent Form (Study 2)



University of Southern Queensland

The University of Southern Queensland

Plain Language Statement

Full Project Title: The experience of distance education and its influence on students' health risk and health-promoting behaviours, academic performance, stressors, strains and coping

Principal Researcher: Mrs Lisa Beccaria (PhD Student)

Supervisors: Professor Cath Rogers-Clark / Associate Professor Lorelle Burton

Dear Student,

Thank you for your interest in participating in the research project entitled '*Me, My Health and My Study*', conducted as part of Doctor of Philosophy studies. The purpose of this research is to explore in-depth perceptions from distance students about the influences from home or study which impact on health behaviours. In addition, it will explore how you as a student perceive the university's role in promoting and supporting students' health and wellbeing at USQ. This is important so that USQ can develop strategies which best meet the diverse needs of distance students. This has the potential to have a positive impact on students' study experiences.

By participating in this study you will have the chance to be eligible for a \$25 USQ book voucher. All students who complete the interview (approx. 5-10) will have their names entered into a raffle draw, of which one student receives the book voucher.

By consenting to participate in this interview you are also eligible to receive 1 hour course credit for participating in a 1 hour interview with the researcher (this is available for those students whose psychology course is linked with course credit). For students whose interview will be linked to course credit, interviews will be conducted by the 30th September, 2011. For all other students, interviews will be conducted by 31st December, 2011.

Your participation in this project will involve the following:

- 1 x phone interview with the researcher (up to 1 hour duration)
- Potential for follow up interview with researcher to clarify comments from the first phone interview (approximately 30 minutes)

This study is voluntary, and your decision whether to take part or not to take part, will not affect your relationship with the University of Southern Queensland. When discussing thoughts and feelings experiences as a student, there is the possibility that you could feel some level of discomfort or distress. If you do, you have the right to cease your involvement in the study at any time and if you wish, seek counselling from USQ Student Service staff <http://www.usq.edu.au/studentservices/>. You may withdraw at any time from the study, and your data also is withdrawn including data from personal interviews.

It cannot be guaranteed that you will directly benefit from this research; however you will be contributing to the knowledge of health needs and experiences of university students. Information obtained from you will remain confidential. Pseudonyms will be used when discussing or writing up the information you offer to protect your anonymity. You will be provided with an opportunity to review transcripts to ensure that the researcher accurately reflects your experiences.

Before you make your decision to participate, a member of the research team will be available to answer any questions you have about the research project. You can ask for any information you want. Should you have any queries regarding the progress or conduct of this research, you can contact the principal researcher.

Principal Researcher:

Lisa Beccaria
PhD student: 07) 46312753, lisa.beccaria@usq.edu.au

Supervisors:

Professor Cath Rogers Clark: 07) 46 312005 Cath.Rogers-Clark@usq.edu.au
Head of Department Nursing and Midwifery USQ (Faculty of Sciences)

A / Professor Lorelle Burton + 61 7 46 312853 Lorelle.Burton@usq.edu.au
Associate Dean (Learning and Teaching – Faculty of Sciences)

If you have any ethical concerns with how the research is being conducted or any queries about your rights as a participant please feel free to contact the University of Southern Queensland Ethics Officer on the following details.

***Ethics and Research Integrity Officer
Office of Research and Higher Degrees
University of Southern Queensland
West Street, Toowoomba 4350
Ph: +61 7 4631 2690
Email: ethics@usq.edu.au***



University of Southern Queensland

The University of Southern Queensland

Consent Form

Full Project Title: The experience of distance education and its influence on students' health risk and health-promoting behaviours, academic performance, stressors, strains and coping

Principal Researcher: Mrs Lisa Beccaria (PhD Student) - Lecturer USQ

Department of Nursing and Midwifery

Supervisors: Professor Cath Rogers-Clark and Associate Professor Lorelle Burton

To: Interested research participant – 'Me, My Health and My Study'

- I have read the Plain Language Statement Sheet and the nature and purpose of the research project has been explained to me. I understand and agree to take part.
- I understand the purpose of the research project and my involvement in it.
- I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future
- I confirm that I am over 16 years of age and a USQ student
- I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential.
- I understand that my participation in a personal phone interview will be recorded to transcription purposes. This file will be saved onto a password protected computer by the researcher, until such time as it will be deleted following analysis of the transcripts.
- I confirm that in terms of my usual mode of study, I predominantly study by distance or external mode.

Name of Participant

Student Number:

Date


If you have any ethical concerns with how the research is being conducted or any queries about your rights as a participant please feel free to contact the University of Southern Queensland Ethics Officer on the following details.


Ethics and Research Integrity Officer
Office of Research and Higher Degrees
University of Southern Queensland
West Street, Toowoomba 4350
Ph: +61 7 4631 2690
Email: ethics@usq.edu.au

Once you have completed this consent form, please return via email to:
Lisa.Beccaria@usq.edu.au

Appendix J

Examples of Computer Strain Prevention Strategies





OHS
your safety. your future.



FACT SHEET

Pause Exercises

Where-ever possible, the job and work environment should be ergonomically designed to reduce risk of soft tissue strains and sprains. When coupled with design, pause exercises and task variation can assist to reduce injury risk.


The pause exercises on this sheet, can help to relieve muscle tension. Performance of the exercises can also provide postural variation and reduce duration of occupational sitting. (Occupational sitting appears to be a risk factor for a number of chronic illnesses).

The information presented here is for educational and resource purposes only. It is presented to help you make informed decisions about managing your musculoskeletal health in the workplace. It is not a substitute for any advice given to you by your doctor. Always consult your doctor or health care provider before beginning any exercise program.


 <p>Wrist stretch (flexion)</p> <p>Stand or sit with arm extended with palm facing DOWN. With your opposite hand, gently pull down on the top of the hand while keeping your arm straight. Hold for 10 seconds, and repeat 10 times.</p>	 <p>Wrist stretch (extension)</p> <p>Stand or sit with arm extended with palm facing UP. With your opposite hand, gently pull down on the fingers while keeping your arm straight. Hold the stretch for 10 seconds, and repeat 10 times.</p>
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PRINCETON UNIVERSITY

Search



University Health Services



ABOUT US

APPOINTMENTS & FEES

STUDENT SERVICES

STUDENT RESOURCES

FACULTY & STAFF SERVICES

HEALTHYLIVING

Disability Princeton Web Site

Rear Admittance Program

Online Health Risk Assessment

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Alcohol

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Common Illnesses

Drugs and Smoking

Eating Disorders

Emotional Health

Ergonomics and Computer Use

Exercise and Fitness

LGST Health

Men's Health

Nutrition

Sexual Harrassment, Assault, and Relationship Violence

Sexual Health

Skin Care

Sleep Hygiene

Tobacco Use

Non-Go-Common Illnesses

Women's Health

Myth about HCC and Facts about HIV

Ergonomics and Computer Use

FOR MORE INFORMATION
Health Promotion and Wellness Services, Call (609) 224-2224

FOR MEDICAL SERVICES AND APPOINTMENTS
Occupational, Call (609) 224-2141

TO DISCUSS YOUR CONCERNS WITH A COUNSELING PROFESSIONAL
Counseling and Psychological Services, Call (609) 224-2265

- Setting Up a Comfortable, Healthy Workstation
- Protecting Your Neck And Back
- Repetitive Strain Injury (RSI)
- Computers and System

SETTING UP A COMFORTABLE, HEALTHY WORKSTATION

Most Princeton students use laptops perched on the basic, institutional desks found in all dorm rooms. Many continue to use the simple wooden chairs as well. Typically, there's nothing wrong with using a basic workstation, but when you spend most of your waking hours sitting at the desk, you may want to consider making it a more comfortable space for short-term and long-term health. If you have pain or fatigue in your hands, wrists, arms, shoulders, upper back or neck it may be related to using a computer. Perhaps you cannot afford to significantly change the work area in your room, but you can probably make small adjustments to promote comfort. Additionally, there are computers all over campus. Surely you can find a place where you can work comfortably.

Without proper computer set-up and use, there are many injuries that may result. Tendinitis is the most common problem, involving tendon inflammation and localized pain in the elbow, forearm, wrist or hand. Bad posture can cause fatigue, muscle strain, and, in later stages, pain. Back pain, one of the most common complaints of older men and women, is usually the result of years of faulty posture. In addition, poor posture can affect the position and function of your vital organs, particularly those in the abdominal region. Stand up straight to promote health and good appearance. You will exude confidence and dignity as you hold your back up straight using abdomen and back muscles.

Keyboard and Mouse Position

When positioning your keyboard and mouse, you should keep in mind that you want to reduce unnecessary strain in your fingers, wrists, arms, and shoulders, keeping them in as neutral and relaxing a position as possible. Think of your wrist: your wrist should not be resting, but held up in the wrist the back of your hand. This reduces strain to your wrist that may result from holding it at an unusual angle and allows you to move your arms to reach the keys, rather than stretching your fingers to reach them. Use a foam pad or towel in front of your keyboard to rest your wrists and forearms while you're not typing. Because you want your arms free to move your hands around the keyboard while typing, you should only use armrests on your chair when you're not typing. Raising your wrists up is not very tiring because most people are not actually typing continuously for long periods, so you'll have plenty of time to rest your arms while you think about what to type next.

Your fingers should be in a straight line with your forearm. This is made easier by tilting the back edge of the keyboard down the reverse of typical keyboard tilt. The keyboard should ideally be just above your lap so your elbows are bent at least 90°. If you can't move your keyboard, try adjusting the height of your chair, though this may cause problems if you can't adjust your monitor accordingly. If your wrists ache or tire, look into buying an ergonomic keyboard that angles out from the center, making it easier for you to keep your hand and forearm in a straight line. Aching and strain caused by typing may be reduced by typing more gently – avoid banging the keys.

Appendix K

USQ Supports and Recommendations for Distance Students

	Current Information / Support Provided by USQ	Recommendations for Distance Students
Counselling	Counselling (Personal and Career) http://www.usq.edu.au/current-students/support/counselling Business hours – Mon to Fri	Clear procedures and access for those external to university for support (including after-hours support, online support)
General Health and Wellbeing	Mental health http://www.usq.edu.au/current-students/support/counselling/mental-health Wellbeing http://www.usq.edu.au/current-students/support/counselling/well-being Stress management http://www.usq.edu.au/current-students/support/counselling/well-being/stress-management	Recommendations and advice specifically for distance students in terms of health and wellbeing e.g. work/life balance, nutrition, physical activity, spiritual growth, interpersonal relations. Computer strain prevention program. Time management skills. Partnerships with external agencies for health and wellbeing support. Curriculum infusion e.g. health and wellbeing issues, and “the Desk”. International partner students – access to local services and supports. Development of wellness programs for distance students or healthy lifestyle programs.
Coping	Mental health http://www.usq.edu.au/current-students/support/counselling/mental-health Wellbeing http://www.usq.edu.au/current-students/support/counselling/well-being Stress management http://www.usq.edu.au/current-students/support/counselling/well-being/stress-management	Health and Study Action Plans. Online problem solving programs. Online strategies for time-saving study tips. “Staying on Track” Seminar tailored for distance students. Mindfulness program for distance students.
Transition	Tertiary Preparation Program http://www.usq.edu.au/degrees/tertiary-preparation-program	Online transition programs for distance students commencing study. Advice to students about range of services to distance students. Pre-entry skills inventories. Implementation of the “Learning Thermometer”. “Study Link” program.
Learning and Teaching	As per individual courses	Enhance use of online technology for social interactions i.e. peer to peer mentoring, social networking between distance students. Computer literacy programs. After hours lecturer support. Review of assignment extensions for mature age students. Learning material designed for effective online delivery.