

Academic and clinical performance among nursing students: What's grit go to do with it?

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Abstract

Background: Nursing is both a science and an art and requires students to develop sound scientific foundations for artful application. The at times binary nature of how the way in which the knowledge and skills of nursing are delivered in higher education can be difficult for students to comprehend initially and synchronise for practice and can lead to feelings of being overwhelmed, withdrawal or failure. Understanding what influences student performance in bachelor level nursing studies is imperative so educators can develop programs that straddle the art and science conundrum and lead to graduate success. Grit is a non-cognitive trait, a drive that keeps an individual on task through difficult circumstances for sustained periods of time. Grit might well represent a key factor in our understanding of why one student succeeds while another withdraws.

Objectives: To examine measures of grit in the context of demographic characteristics of nursing students and their impact on student self-perceived academic and clinical performance.

Design: A cross-sectional design.

Setting: A single School of Nursing at a multi-campus, regional, peri-urban Australian University.

Participants: All nursing students (n=2,349) studying a three-year bachelor of nursing degree were invited to participate.

Methods: Data were collected using a questionnaire that included several demographic items, questions relating to the student's perceived level of academic and clinical performance, and the eight-item Short Grit Scale (Grit-S) used to measure trait-level perseverance and passion for long-term goals.

Results: Students, regardless of their year of study or any other demographic factor, showed grit was the only significant predictor of clinical and academic performance.

Conclusions: The strength between grit and perceived performance both academically and clinically, makes grit a valuable factor for development in students as a vehicle for success in nursing programs of study. This paper culminates in suggestions for creative approaches to grit development.

Introduction

Academic and clinical success among nursing students remains complex and multidimensional, and although demographic factors remain essential in both academic and clinical performance, there are an array of different factors, such as personality, behavioural, self-efficacy, and cognitive factors, that also impact successful outcomes (Chamorro-Premuzic & Furnham, 2003; Levett-Jones et al., 2010; McLaughlin et al., 2008; Pitt et al., 2012). Within Jeffery's (2015) Universal Retention and Success model, which focuses on nursing student success, completions, and longer-term retention, it has been indicated that students need the capacity to meet the challenge of tasks, need to be committed and diligent, and have high levels of motivation to attain outcomes with persistence (Jeffreys, 2015). Academic self-concept and motivation have been found to be a strong predictor of academic achievement in general (van den Berg & Coetzee, 2014), and academic success amongst nursing students more specifically (Khalaila, 2015; Radi, 2013).

In addition to demographic factors and motivation, Duckworth et al. (2007), in her seminal work, brought to light 'grit', which is the perseverance, passion, and commitment to meet long term goals despite adversity and leads to success (Duckworth, 2016). As such, it was demonstrated that grit predicted individual achievement more than talent alone when it came to measures of success in both academic and non-academic outcomes (Duckworth et al., 2007; Eskreis-Winkler et al., 2014). For example, higher levels of grit was shown to predict better performance among spelling bee contestants, increased numbers of high school graduates, higher Grade Point Averages among university students, greater retention among military cadets, determine longer term employment outcomes, have increased effectiveness and retention among novice teachers, and lastly it has been demonstrated

that grittier men are less likely to divorce than those who are less gritty (Duckworth et al., 2011; Duckworth et al., 2007; Eskreis-Winkler et al., 2014; Kelly et al., 2014).

Recognised as something different from motivation, the psychological construct of grit aligns closely with conscientiousness, as one facet of Big Five model of personality (Duckworth et al., 2007), a broad grouping of personality traits that include several other important facets – e.g. achievement striving, dutifulness, self-discipline and deliberation. Both conscientiousness and its sub-facets have been found to correlate positively with achievement (Valiente et al., 2010). Grit however, denotes extreme perseverance in the direction of a particular interest over an extended period of time and goes on to report grit as a better predictor of academic achievement than IQ (Eskreis-Winkler et al., 2014).

Significant synergies can also be seen with Dweck's (2008; 2010) work on mindset leading to the identification of two mindsets, fixed and growth. A growth mindset describes individuals who view their IQ and ability as a basis for development, and believe that challenges including failures create opportunities for developing to achieve success through effort. In fact, Snipes et al. (2012) describes a growth mindset as a significant factor in the development of grit. While dissimilarities can be identified between grit and mindset, there is clearly a close association in light of work by Farrington et al. (2012) who identified that the combination of a growth mindset and grit was associated with academic performance. Clear synergies can be identified with other work in the field, for example, Martin and Marsh's (2008, 2009) work on 'academic buoyancy' as well as work by Waxman et al. (2003) on 'resilience', Duckworth's research is difficult to type-cast in theoretical terms and instead should be considered in terms identified by Duckworth et al. (2007) to represent a narrow

facet of conscientiousness which has demonstrated predictive validity over and above the Big Five conscientiousness for achievement.

Grit is a non-cognitive trait and a drive that keeps an individual on a difficult task over a sustained period of time (Duckworth, 2016) and helps to explain why two individuals with a similar level of ability are observed to perform or achieve outcomes that are considerably different to each other (Credé et al., 2017). Grittier people have been shown to have higher levels of success in academic and non-academic performance, they possess higher levels of motivation as they seek meaning to achieve their goals. Grit is more than being stubbornly determined to achieve an outcome not matter the cost, but is focussed on achieving longer-term higher level pursuits, while at the same time being flexible and less concerned with lower level day-to-day goals (Duckworth, 2016; Duckworth et al., 2007).

Although it has been reported that grit leads to success, there are opponents who suggest the level of impact or predictability is relatively low to non-existent (Credé et al., 2017).

Despite this, many of these same challengers argue that grit remains useful to predict or understand the retention of students and cadets or when seeking to understand and address the longevity or stick-ability of employees (Duckworth et al., 2011; Duckworth et al., 2007; Eskreis-Winkler et al., 2014; Kelly et al., 2014; Robertson-Kraft & Duckworth, 2014).

Thus grit creates an opportunity to identify those individuals who are gritty and those that may benefit from interventions to improve grit as a to improve retention at school, university, or within the workplace (Credé et al., 2017).

Developing or increasing grit remains complex, however, within a number of US studies it has been explored and highlighted that grit is a dynamic state that can be developed (Credé et al., 2017; Duckworth et al., 2011; Duckworth et al., 2007; Eskreis-Winkler et al., 2014;

Kelly et al., 2014; Robertson-Kraft & Duckworth, 2014). Although used in medicine to understand its impact on location of practice or speciality among physicians (Reed et al., 2012), grit remains a new paradigm in the nursing profession, particularly in Australia (Stoffel & Cain, 2018).

The challenge that exists is that while demographic, behavioural, self-efficacy, and cognitive factors have shown to impact academic and clinical performance, there is very little research literature that purports to demonstrate an understanding of the levels of grit and the impact grit has on performance among nursing students. In fact, in a paper by Stoffel and Cain (2018), only two journal articles are identified that focussed on grit among nurses, however, one was a commentary (McCabe, 2016), while the other was an empirical study regarding the impact of grit among nursing students (Robinson, 2015). As such, there remains a gap in our knowledge base regarding the extent to which grit effects both academic and clinical performance, as well as any impact grit might have on students as they progress into the role of the novice nurse (Pitt et al., 2012; Stoffel & Cain, 2018). As such, the following study examined measures of grit as well as a number of demographic characteristics of nursing students and their impact upon a student's self-perceived academic and clinical performance.

Methods

A cross sectional study examined grit among students undertaking a Bachelor of Nursing program in an Australian university.

Sample

All nursing students (n=2,349) studying a three-year bachelor of nursing degree were invited to complete an online questionnaire examining grit. The sample size required (n=330) was deemed to have power to detect a 5% absolute difference within and between groups, alpha (2 tailed) =0.05, margin of error =±5%.

Data collection tool

Data were collected using a questionnaire that included 27 demographic items such as study mode, year within the program, gender, year of birth, past and current place of residence, employment status, marital status, income, and low-income healthcare (concession) card status; where eligibility is based on age, income, and individual or family circumstances among Australian citizens (Australian Government, 2019). These general demographic questions have been examined for their reliability and validity, while being used across other nursing, medical and allied health student research elsewhere (Smith et al., 2018; Terry et al., 2019). Further, it must be noted that delivery of the Bachelor of Nursing program in question is divided into two study modes: Standard mode which reflects a traditional approach with weekly face-face active learning and the Flexible mode which reflects a blended mode of delivery with online theoretical learning and intensive block delivery of practical psychomotor skill.

In addition to demographic data, the questionnaire included student's perceived level of academic and clinical performance as compared to other students, following an approach as described elsewhere (Luthans et al., 2007; Peltzer & Pengpid, 2014, 2015). Specifically, two questions were asked and included *"Over the past semester, how would you rate your academic performance/effectiveness as compared with your peers?"* and *"Over the past semester, how would you rate your clinical nursing performance/effectiveness (in the*

Bachelor's degree) as compared with your peers?" Lastly, the eight-item Short Grit Scale (Grit-S) developed by Duckworth and Quinn (2009) was used to measure trait-level perseverance and passion for long-term goals among the nursing students (Reliability $\alpha=.755$) (Duckworth & Quinn, 2009). The whole questionnaire tool took between 15-25 minutes to complete.

Data collection

Data collection occurred between 27 June and 1 August 2019 where all nursing students were invited in the mid-year break via email by Administration staff to maintain anonymity of the students and reduce any coercion. The invitation included a web link that directed students to a Plain Language Information Statement, informing students of the voluntary nature of their participation, and a link to the on-line questionnaire. A follow-up recruitment email was sent to each student in weeks 1, 2, 3, 4 and 5 until an adequate sample size ($n \geq 330$). Data were excluded if students did not complete the questionnaire.

Ethical considerations

Ethical approval was provided by the Federation University Australia Human Research Ethics Committee (Approval #18-017). No incentives were offered to participants. Students consented to participate by their implied consent of completing the on-line questionnaire

Data analysis

The Statistical Package for the Social Sciences (SPSS, Version 22.0) was utilised to analyse the data. Cronbach Alpha (α) was used to test questionnaire item reliability, while independent sample t-test, one-way ANOVAs, Chi-Square test and Mann-Whitney U tests were used to analyse parametric and non-parametric data to identify differences between

groups. Hierarchical ordinal regression was also used to examine the association between grit and a number of predictor variables. To adjust for age this variable was entered at step 1 after which the other items were entered into step 2. Preliminary analysis was undertaken to ensure no violations of assumptions were present. Significance was determined at two-tailed $p \leq .05$.

Results

The online questionnaire was sent to all 2,349 first, second and third-year students undertaking a Bachelor of Nursing degree. Among the nursing students invited to participate, 435 fully or partially completed questionnaires were returned (response rate 18.5%). Students represented all year levels and study modes equally, however were over-represented by full-time students ($n=358$). More than half ($n=265$) of students were aged between 20 and 39 years, with a third ($n=105$) of students being born overseas. More than half were first in family to attend university ($n=187$), while just over half ($n=221$) were in some form of paid employment and a third were healthcare (concession) card recipients (Table 1).

Table 1: *Participant demographics*

Demographic information	Frequency	Percentage (%)
Year of program ($n=434$)		
- First year	149	34.3
- Second year	164	37.8
- Third year	121	27.9
Study Mode ($n=434$)		
- Flexible (online) Students	199	45.9
- Standard (face-to-face) Students	235	54.1
Study schedule ($n=434$)		
- Part time Student	76	17.5
- Full time Student	358	82.5
First in family to attend University ($n=360$)	187	51.9
Gender ($n=362$)		
- Female	329	90.8

- Male	31	8.6
- Other	2	0.6
Aboriginal or Torres Strait Islander (n=362)	5	1.1
Age (years) (n=385)		
- Under 20	32	8.3
- 20-30 years	147	38.2
- 30-39 years	118	30.6
- 40-49 years	61	15.8
- 50 years and over	27	7.0
Born in Australia (n=362)		
- Yes	257	70.9
- No	105	29.1
Marital status (n=346)		
- Single	123	35.5
- Married/Partnered	200	57.8
- Divorced/Separated	19	5.5
- Other	4	1.2
Highest level of education (n=349)		
- Secondary School (year 12 or less)	108	30.9
- Vocational Education or Trade training	198	56.7
- Bachelor degree or above	39	11.1
- Other	6	1.7
Employment status (n=399)		
- Not in paid labour force	48	12.1
- Casual employee (no guaranteed hours of work)	130	32.6
- Part-time employee (less than 38hrs week)	167	41.9
- Full-time employee (38hrs a week)	54	13.5
Currently an Enrolled Nurse (Licensed Practical Nurse) (n=356)	67	18.8
Current after tax income (AUD\$) a week (n=376)		
- Less than \$400	142	37.8
- \$400 - \$799	165	43.9
- \$800 - \$1499	62	16.5
- \$1500 - \$3000	7	1.9
Healthcare (low income) card (n=360)	137	35.8
Where participant grew up (n=360)		
- Inner City Metropolitan	32	8.9
- Outer Suburb Metropolitan	81	22.5
- Large Regional Centre	77	21.4
- Small Town	120	33.3
- On a Property or Farm	37	10.3
- Other	13	3.6
Television a motivator to enter the profession (n=426)	96	22.5

In addition to demographic data, it was shown that students rated both their academic and clinical performance good to very good. It was noted that students rated their clinical performance significantly higher than their academic performance ($\chi^2= 168.531$, $df=4$, $p =$

.000). When examining both academic and clinical performance among the three different year levels clinical performance was also rated higher than academic performance among first year students ($\chi^2= 70.645$, $df=4$, $p = .000$), second year students ($\chi^2= 49.399$, $df=4$, $p = .000$), and third year students ($\chi^2= 42.909$, $df=2$, $p = .000$) (Table 2). It must be noted at the time of the questionnaire, first year students had clinical experience in the simulated hospital environment (clinical simulation laboratory) only, as hospital practicums occur only in second semester of their first year of the program, thus were to occur after the questionnaire was completed.

Table 2: *Self-rated Academic and Clinical performance of nursing students*

Self-rated student response	Frequency	Percentage (%)
Academic performance compared with peers (n=412)		
- Very Poor/Poor	21	5.1
- Acceptable	106	25.7
- Good/Very good	285	69.2
Clinical performance compared with peers (n=389)		
- Very Poor/Poor	10	2.6
- Acceptable	69	17.7
- Good/Very good	310	79.7

No significant differences were observed between both perceived academic or clinical performance and sex, age groups, marital status, employment, rurality, nationality, previous experiencing as an Enrolled Nurse (Licensed Practical Nurse), or all other demographic factors. However, when examining the difference between academic and clinical performance and year of program it was noted that first and second year students rated their clinical performance significantly lower than their third year counterparts ($\chi^2= 12.293$, $df=4$, $p = .015$), there were no significant differences among year levels and academic performance.

In addition, when examining the different levels of grit between academic and clinical performance according to study mode, it was noted that students enrolled in both the Standard and Flexible modes of delivery levels of grit were significantly lower among students who felt their academic and clinical performance was acceptable than those with higher performance levels respectively, $F(2,295)= 8.118, p=.000$, and $F(2,295)= 2.145, p=.000$, however, differences in grit levels between Standard and Flexible students were not significant (Figure 1).

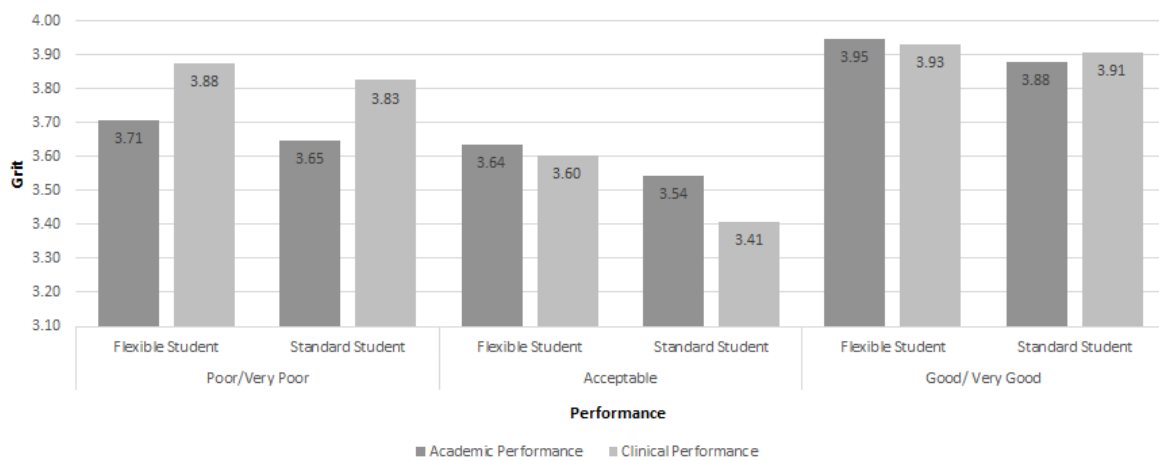


Figure 1: Mean Grit levels according to Perceived Academic and Clinical performance and study mode

Lastly, ordinal regression analysis of all factors highlighted no significant categorical predictor demographic variables for both perceived academic and clinical performance, with the exception of study mode, and grit. Where grit was a predictor for both perceived academic and clinical performance, while study mode was also a predictor of perceived academic performance. In this case, as grit increased by a factor of 1.0 this was associated with an increase in the odds of perceiving academic performance was good to very good, with an odds of 2.520 (95% CI, 1.384-3.848), Wald $\chi^2(1) = 18.286, p= .001$, while the odds of flexible students perceiving their academic performance was good to very good among was

0.571 (95% CI, 0.355-0.919) times than that of standard students, Wald $\chi^2(1) = 5.255$, $p = .021$. Similarly, as grit increased by a factor of 1.0 this was associated with an increase in the odds of perceiving clinical performance was good to very good, with an odds 3.118 (95% CI, 1.634-5.123), Wald $\chi^2(1) = 20.152$, $p = .001$.

Discussion

Students undertaking a Bachelor or nursing degree, regardless of their year of study or any other demographic factor, rate their perceived clinical performance, compared to their peers, much higher than their perceived academic performance. Pitt et al. (2012) in their integrative review indicated there are a heterogeneity of findings relating to demographic factors impacting both academic and clinical performance, however, the present study indicated that demographic factors such as age, sex, part-time employment, and ethnicity among other facts did not have an impact on self-reported academic or clinical performance, as had been suggested elsewhere (Jeffreys, 2015; Pitt et al., 2012).

The findings from the present study suggest that perceived academic performance, which is based on the theoretically based elements of nursing, is observed to be rated lower than student's perceived performance in the practical application of their knowledge or theory (Wolters et al., 2015). It was also highlighted that perceived clinical performance was higher among third year nursing students, than compared to their first and second year counterparts, which was unremarkable, given it is anticipated that third year student's perceived clinical performance would be higher than more junior students. However, no differences in perceived academic performance were observed between year groups and this remains surprising given that it would be anticipated that academic performance or the

perception of academic performance would most likely increase overtime. This would indicate that there may be a number of factors that impact on perceived academic performance levels remaining similar across the year levels (Wolters et al., 2015).

It is surmised that compulsory attendance which is required in clinical simulation laboratories and hospital and health service practicums may be a factor in the differences observed between perceived academic and clinical performance in the context of year level within the program. When comparing attendance at clinical laboratory sessions with non-clinical academic or theoretical courses, there is a requirement for compulsory class attendance at all laboratory-learning sessions. This may provide some insight into why students perceive their clinical performance is better than their academic performance, and this may explain why grit has been shown to correlate with clinical performance. Obligatory attendance, even among flexible students, might in fact operate to develop greater levels of grit through longer term commitment and perseverance of effort, one of the two key components of grit, within the clinical learning spaces. This has been observed elsewhere where high levels of grit were associated with greater course engagement and development of skills among nursing student (Credé et al., 2017; Stoffel & Cain, 2018; Wolters et al., 2015).

Beyond attendance being inferred as a factor that impacts grit leading to overall performance, it may be argued that students are able to, much like their more experienced peers, regard nursing as both an art and a science, where the science nursing is the procurement of knowledge, while the art of nursing is the outward expression of knowledge (Mitchell & Cody, 2002; Peplau, 1988).

From this we may observe a disconnect amongst students with regard to the perceived importance of both the science and the art of nursing being inextricably intertwined in clinical practice. Somewhat artificially, it may be that student currently separate the two and place greater importance on the art rather than the science of nursing, given how they perceive their performance both academically and clinically. In fact, we postulate that among those third year students who perceived their own clinical performance to be significantly higher than their second and first year student colleagues may be experiencing the realisation of this interconnection. Having experienced further hours of clinical practice in varied settings, in a year that is labelled within the curriculum as a 'consolidation year', these third year students comprehend the artful nature of nursing practice.

This artificial separation of art and science is particularly evident as Idczak (2007) reports within their study when a greater emphasis was placed on the applied sciences within a nursing program, students also placed greater emphasis on the science aspect of nursing, rather than the artistic aspects of nursing and care, which was reflected in student's practice. In this case, Idczak's (2007) findings support the notion that the current curriculum, where this study was conducted, is more heavily weighted towards the art rather than the science of nursing, which suggest there is a need for greater balance.

Again, this emphasis may provide some insight into why students tend to place importance on attendance in certain courses. It may also demonstrate clearly where the student's passion or consistency of effort, the second of the two key components of grit, may be placed within the program. The passion of students is more emphasised where the students are given the opportunity to play the role of nurse compared to perhaps less passion driven courses, where attendance wanes and students perceive they are 'learning' what they

consider to be the non-essential aspects of nursing (Wolters et al., 2015). Regardless of the debate and which aspect of nursing has more emphasis and weighting, what has been highlighted is that greater levels of grit have an impact on the perceived academic and clinical performance of nursing students, thus developing and improving grit stand to have an impact on both the art and science elements of nursing among students.

Notwithstanding the differences between perceived academic and clinical performance, it was found that no specific demographic factor had an impact on levels of perceived academic or clinical performance other than grit (Pitt et al., 2012). The regression analysis highlighted that an increase in grit by a factor of one led to more than a double to a triple increase upon students perceiving their academic and clinical performance as good to very good respectively, which has been observed elsewhere (Kelly et al., 2014; Maddi et al., 2012; Wang et al., 2016). As such, the grittier the student, the more likely they were to have higher levels of perceived academic and clinical performance (Kelly et al., 2014; Maddi et al., 2012; Wang et al., 2016).

Beyond this finding, it was also noted that grittier flexible students when compared to their standard counterparts were likely to indicate their academic performance was good to very good. This suggest that those flexible students who are grittier are also more cognisant that their perceived academic performance is considered much less or more inferior that their standard counterparts. This may be due to the inability to adequately 'compare' themselves with their peers, as posed by the questionnaire items. In this way, flexible students did not have the capacity to answer the questions given their limited interaction with other students within the program on a more regular basis. Alternatively, it may relate to how flexible students perceive the study mode as initially being easier and requiring less time

(Jeffreys, 2015), however, academic performance is then reported to be lower than their standard counterparts.

As previously indicated academic self-concept and motivation have been found to be a strong predictor of academic success amongst nursing students more specifically (Khalaila, 2015; Radi, 2013). While grit is inextricable from motivation, this interconnection is complex and represents more than a state of mind that stimulates activity, it is the activity of 'staying' motivated that separates the two ideas. Irrespective of this, the close association between measures of grit and motivation as an indicator of prospective student success means that the findings from this current study also suggest a positive correlation with academic self-concept and are likely therefore to offer a useful measure of a student's actual success in the bachelor of nursing program of study (Khalaila, 2015; Radi, 2013; van den Berg & Coetzee, 2014).

The findings from this study suggest that developing grit amongst nursing students will correlate strongly with an increase in the student's perceived performance and subsequently the student's actual performance within their program of study. The next and natural extension of this work is the development of creative ways to develop grit amongst the body of student nurses.

Limitations

Overall, a cross sectional design indicates relationships between variables, thus the findings should be considered carefully. The university examined has campuses in rural, regional and peri-urban locations with a high student cohort from rural settings, which may yield some influence upon the data making it difficult to generalise the findings to other more urban centres. Further, while the *Grit-S* questionnaire is validated tool, the additional questions

“Over the past semester, how would you rate your academic performance/effectiveness as compared with your peers?” and *“Over the past semester, how would you rate your clinical nursing performance/effectiveness (in the Bachelor’s degree) as compared with your peers?”* may have been open to interpretation. The terms ‘clinical’ may be interpreted to represent actual and/or simulation experiences and first year students only undertake their first clinical practice experience towards the end of their first year of study, highlighting an opportunity for future iterations of the questionnaire to be improved. In addition, student respondents of the survey may not be representative of the whole student cohort given the low response rate, with only 18.5% (n=435) of the total student cohort completing the surveys in full. The low response rate may be due to survey being administered initially in the mid-semester break, with reminders being sent weekly for the first 5 weeks coinciding with clinical practicum for many second and third year students. To increase response rate without increasing coercion, the survey may be more suited to be administered at other times which are outside this intense period.

Conclusion

The role of grit can be considered an important variable in determining the success of undergraduate students in a Bachelor of Nursing program. This study undertaken in a regional university in Australia sought to identify the role of grit on a student’s perceived performance in both academic and clinical elements of their Bachelor of Nursing program. The findings suggest that as a student’s measure of grit increased, so too does their level perceived performance. Interestingly, perceived levels of academic and clinical performance were not found to be correlated with any other demographic variable assessed and instead were strongly associated with grit.

A closer look at the findings from this study suggest that there was no significant difference in perceived performance across the study with regard to perceived academic elements of the program. Students tended to rate their perceptions of their clinical performance higher than their academic ability, perhaps as a function of the clinical components of the program being compulsory. Interestingly, third (final) year students within the Bachelor of Nursing program identified a statistically significant increase in their perceived clinical performance when compared to their more junior counterparts, a finding that we suggest may be linked to students being engaged in the consolidation elements that have been purposefully embedded within the specific curriculum examined. These include, an increase in the amount of time students spend in clinical practice across the year, in particular the final semester of study, where there is a strong emphasis on students being provided opportunities to apply both the theoretical and skill based components that they have learnt across the program in both actual and simulated clinical practicum.

As highlighted, the notion of grit is inextricably entwined with motivation and allows us to examine this non-cognitive elements more closely. While motivation may well be a factor that directs our attention or activity towards a specific goal, it is grit that informs the 'stickedness' with which one directs the focus of those activities to achieve the outcome even in the face of adversity.

Understanding grit as a concept that provides an opportunity to unpack further those aspects of a student's self-concept that lead to a student's success in a program of nursing study. Of particular interest is the idea that grit can be developed and cultivated amongst a cohort of students. As such, future research should focus on those aspects which build and cultivate grit within a cohort of nursing students. From this present study, this might be as

simple as compulsory attendance at all scheduled classes, and perhaps as complex as an overseas experience to undertake a clinical practicum in a developing country. Arguably however, the first endeavour of future research must involve an exploration of any link between student's actual grades and their individual measures of grit. Indeed, this is work currently being undertaken by the researchers.

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