Mindfulness can assist FYHE students with Academic Adjustment

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Abstract

Interpersonal style and mindfulness were chosen as frameworks and theoretical perspectives to address first year university students' adjustment to their new milieu. The sample consisted of 362 first year of university students. The quantitative methodology used to examine the relationships between the variables was a demographic-matched design, with groups of self-identified meditators and non-meditators: Mindfulness as a skill and a personality trait respectively. Results indicated that students who scored higher in insecure attachment style, their results negatively predicted academic adjustment, and this relationship was partially mediated by higher scores in mindfulness skills. Interestingly, students who scored higher in anxious attachment style, their results negatively predicted academic adjustment, and this was partially mediated by higher scores in mindfulness as a personality trait. However, this was not the case for students who endorsed higher levels of avoidant attachment style. This research provides evidence for mindfulness based interventions targeting first year university students.

Introduction

Australian university students have been found to experience significantly higher levels of distress than the average Australian (Stallman, 2011). This research begs for appropriate interventions to be able to assist this vulnerable population. Mindfulness interventions have limited evidence targeting academic adjustment (Hassed, Lisle, Sullivan, & Pier, 2008). Additionally due to the overt social underpinnings in tertiary education adjustment, interpersonal style was seen as another of interest (Kift, 2000; Marmarosh & Markin, 2007). This presented research used the variables of interpersonal style, mindfulness as a set of skills and as a personality trait, and academic adjustment.

Mindfulness. Several definitions of mindfulness have been used in modern Western psychology, although the skill has been around for thousands of years (Saloman, 1994). Modern research is seeking to accurately define mindfulness and drew on the works of Kabat-Zinn and Linehan to include cognitions, emotions, bodily sensations, sights, sounds, smells and any other stimulant to the experience (Baer, 2009). This definition of mindfulness involved "close observation of all experiences that arise with an attitude of acceptance, openness, and willingness and without impulsive attempts to change or escape them, even if they are unpleasant or unwanted" (Baer, p.15).

Mindfulness is often used synonymously with the traditional Buddhist processes of cultivating awareness, and modern psychology has studied it as a psychological tool capable of stress reduction and to increase several positive emotions or traits (Baer, 2009; Harris, 2007). Despite its roots in eastern religion and philosophy, modern psychology has conceptualised and measured mindfulness as a multifaceted construct that includes an individual being able to observe, describe, act with awareness, be non-judgemental of inner

experience, and be non-reactive to inner experience (Baer, Smith, Hopkins, et al. 2006). Despite intensive current research in mindfulness, further research is required to fully capture the construct (Baer, Smith, Lykins, et al. 2008; Carmody & Baer, 2009; Van Dam, Earleywine, & Danoff-Burg, 2009).

Although there is not clarity within the research, mindfulness techniques have been used within different psychological therapies. For example, mindfulness techniques have been used in cognitive therapy (Segal, Williams & Teasdale, 2002), mindfulness based stress reduction (Kabat-Zinn, 2004), Gestalt therapy (Perls 1973), acceptance and commitment therapy (Hayes & Smith, 2005; Harris, 2007), and dialectic therapy (Linehan, 1993). This broad application suggests that mindfulness is a relevant research topic for Australian first year university students, particularly eith research indicating significantly higher levels of distress than the average Australian (Stallman, 2011).

Mindfulness and meditation. The term 'meditation' can be defined by the different types practiced and is highly dependent on the context, and therefore has quite a unique meaning for each individual who practices it (Goleman, 1988; Shears, 2006). The term 'meditation' can refer to the state in itself. Meditation can also be about bringing about different thoughts, emotions and experiences for the sake of personal analysis and contemplation. However, this is not definitive. Meditation has been a part of religious tradition and ceremonies including Christianity and prayer (Zanzig & Keilbasa, 2000). Meditation has been practiced for thousands of years and by many cultures, and therefore is not dependent on race, history or geography. Meditation is therefore difficult to consistently define, and may be conceptualised as a process which an individual can subjectively experience.

However it has been conceptualised that meditation is responsible for the mechanisms of mindfulness and therefore mindfulness as a "set of skills" (Baer, et al. 2008; Baer, Samuel & Lykins, 2008). When measuring mindfulness and individuals do not meditate and indicate that they have higher levels of mindfulness this is conceptualised as a personality trait (Baer, et al.; Baer, Samuel & Lykins).

Interpersonal Style. An attachment theory framework has been provided to conceptualise interpersonal styles of first year university students. Attachment was defined as the affectionate bond between one individual and another (Bowlby, 1982). Additionally, attachment style has been defined as the pattern of expectations, needs, emotions and social behaviours resulting from a particular history of attachment experiences (Fraley & Shaver, 2000). Attachment security indicates an individual who is satisfied with their relationships while an individual who indicates insecurity is not satisfied.

There are two possible strategies used by individuals with attachment insecurity and possible defence mechanisms for the individual when there is a perceived threat (Cassidy, 2000; Cassidy & Kobak, 1988; Mikulincer & Shaver, 2003). There is either *hyperactivation* or *deactivation* of the attachment behavioural system. These strategies are within the realm of individual attachment style and can be measured along two dimensions of attachment-related avoidance and attachment-related anxiety (Brennan, Clark, & Shaver, 1998)

Attachment style and mental scripts. As an extension of Bowlby's internal working model, a framework theorising how attachment style leads to cognitive-motivational predispositions, which in turn leads to social information processing and results in interpersonal behaviour has been developed (Shaver & Mikulincer, 2011). This theoretical model has provided a link to how attachment style through cognitive processes can lead to interpersonal behaviour. Due

to the cognitive element of this process mindfulness was considered an imperative variable to consider.

Academic Adjustment. *First year experience*. The transition to university has been of interest to researchers, tertiary educators, and government bodies with studies and reviews examining this specific phase of student learning (DIICSRT, 2008a; 2008b). In particular of interest is students' first year at university as this is where the transition and adjustment to university begins, with the term First Year Experience (FYE) often used.

University is a place for higher education where, just as there is transition from primary school to high school, there is a transition from high school to tertiary education. The transitions are in the context of the learners' progression, and as learners change their associated social interaction and therefore culture. Tinto (1993, 1997) also mentioned this idea of change in culture with a student's transition to university. With this transition comes the change of family situation; students are moving away from family and developing their own sense of independence and responsibility (Tinto). Social affiliation acts as the conveyor of academic involvement and the motivation to learn also increases student involvement as a meaningful and valued part of the learning process.

American research on how students were affected by university life identified a number of variables that influenced students in the transition to university (Pascarella & Terenzini, 2005; Pritchard, Wilson & Yamnitz , 2007). More specifically, contact with other students encouraged persistence, which in turn led to degree completion. There was evidence to suggest that co-operative learning had an effect on students' overall learning and particularly on higher or more complex cognitive functioning rather than on lower less complex levels (Garside, 1996).

Australian research has found that; the development of a new social structure, formation of an independent identity, developing autonomy, finding a structured university environment, finances, and longing for home contacts, are all challenges faced by first year university students (McInnis & James, 1995). Kantanis (2000) placed a strong emphasis on the social transition which underpins a successful academic transition to university. In addition to emphasizing social transition, there was emphasis on the individual student skills required for establishing and maintaining a friendship network. She observed that developing such a network required "sophisticated social skills" (p.3) with an outgoing personality. Kantanis explained that the need for belonging is a core desire in human behaviour and particularly for adolescents, and therefore when students do not have social supports they are disadvantaged.

In national surveys which gave importance to engagement in learning, engagement was not only time spent in class and on campus, but also time spent with other students, academics and teachers, and other student support staff (Krause, Hartley, James, & McInnis, 2005). The study called for quantitative and qualitative research into FYE in order to find a better understanding of student engagement. It was suggested that the more a student interacts with other students within the cohort in an educationally meaningful way, the more likely the student will engage in their learning. Learning engagement was then defined it as "time, energy, and resources students devote to activities designed to enhance learning at university" (Krause, 2005; p. 3). However this definition missed possible implications and complexities of engagement in learning within FYE and university students, such as managing varied roles.

There is research to support the relationships between attachment style and mindfulness (Shaver, Lavy, Saron, & Mikulincer, 2007), mindfulness and academic adjustment (Hassed, Lisle, Sullivan, & Pier, 2008) and attachment style and academic adjustment (Marmarosh & Markin, 2007). The aim of the current study was to understand the role of mindfulness in the relationship between attachment style and academic adjustment. As identified by previous research (Baer, Smith, Lykins, et al. 2008; Hayes & Shenk, 2004; Williams, 2008) the construct of mindfulness is separated into groups; meditators with higher mindfulness scores conceptualise mindfulness as a set of skills, and non-meditators with higher mindfulness scores conceptualise mindfulness as a personality trait. The current research therefore identified individuals who have experienced meditation and we have two samples; meditative, and non-meditative first year university students.

Methodology

Participants. The sample consisted of 362 students who indicated that they were in their first year of university study at University of Southern Queensland. The age range was 16 to 71 years (m = 27.41, sd = 9.99).

Measures. The first questionnaire was related to the participants' demographic characteristics and included questions relating to meditation such as frequency and duration. Meditation experience was measured with "*Do you meditate?*" The remaining three questionnaires were the Experiences in Close Relationships - Revised Questionnaire (ECR-R; Fraley, Waller, & Brennan, 2000), Five Facet Mindfulness Questionnaire (FFMQ: Baer, Smith, Hopkins, et al. 2006); and the Student Adaption to College Questionnaire (SACQ; Baker & Siryk, 1984).

ECR-R. The ECR-R contains 36-items and was used to measure an individual's attachment style. This measure was originally based on the measure of attachment style developed by Brennan, Clark and Shaver (1998), and the reliability and precision of the instrument was found in measurement of the two subscales; anxiety and avoidance (Fraley, Waller & Brennan, 2000). Participants in the current study were instructed to respond to statements about how they generally experience relationships, not just what is happening in current relationships and to indicate how much they agree or disagree to each of the statements within the measure. As recommended by Fraley, Waller and Brennan (2000) there were changes to items that made reference to "partner" or "romantic partner", which was replaced with the term "others" since this research was interested in interpersonal relations generally, not just intimate relations.

FFMQ. The FFMQ (Baer, Smith, Hopkins, et al. 2006) is a 39-item questionnaire and was used to measure individuals' level of mindfulness. Participants were instructed to rate each of the statements that best describes their own opinion of what is generally true for them. The overall score for this measure was used.

SACQ. The Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1984) contains 67-items and was used to measure individual student's adjustment to university (Baker & Siryk, 1999). In the development of the measure, Baker and Siryk found that this construct required a multifaceted measure as it involves measuring student adjustment as a varied construct and requires a variety of coping responses from students. However for the use in the current research, the overall score from the measure was used.

Procedure. Ethical approval was gained from the University of Southern Queensland Human Ethic Committee. This current research was design to be offered as an on-line and was offered in the faculty of psychology website (http://psych.sci.usq.edu.au). Once a student had logged on to the website, the survey was presented with an outline of the research aims of this research and the requirement of being enrolled in first year units. Students were offered entry into the faculty draw for a prize of $100 book credit or 5% course credit for eligible students, in lieu for their time and effort in participation.

Results

Appropriate parametric data screening conditions were satisfied and statistical assumptions were not violated. Table 1 below outlines demographic information of the meditative and non-meditative groups.

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	Ethnicity	Freq	%	Edu	Freq	%	Age (*m* and *sd*)
Meditative	Anglo	125	75.8	Primary	7	4.2	28.14 (9.77)
	Indig Au	7	4.2	Grade 10	15	9.1	
	Asian	5	3	Grade 12	110	66.7	
	African	4	2.4	Vocation	33	20	
	Other	24	14.5				
Non-med	Anglo	118	71.5	Primary	5	3	26.67(10.20)
	Indig Au	5	3	Grade 10	13	7.9	
	Asian	6	3.6	Grade 12	115	69.7	
	African	6	3.6	Vocation	33	20	
	Other	30	18.2				

Note: Freq = Frequency, Edu = Education, % = Percent, Anglo = Ango-European, Indig Au = Indigenous Australian, Non-med = Non-meditative.

Table 1. Representation of Ethnicity and Education level in Meditative (n=165) and Non-meditative (n = 165) samples

To ensure that the two groups were considered equal, a comparison of the two groups, were compared with the variable of age. A t-test was used for this analysis. The result of $t(328) = .43$, $p = .67$, was non-significant, and therefore the groups were not considered to be different in the variable of age. Likewise for education level a chi-square was used and was found to be non-significant, $\chi^2(4,210) = 223.11$, $p = .255$. This was consistent with Baer, et al. (2008). Since one of the predictors in this study was attachment style, analyses for these variables were also compared to ensure that the two groups were not significantly different. Anxious attachment style was found to be non-significant, $t(328) = 1.08$, $p = .28$, and avoidant attachment style was non-significant $t(328) = -.18$, $p = .85$.

Tests of Mediation. Mediational effects between attachment style, mindfulness and academic adjustment were analysed with regression following Baron and Kenny (1986), as tabled below.

Testing steps in Mediation Model	*B*	SE *B*	β	R^2	ΔR^2
Testing Path c					
Outcome Variable: Academic Adjustment					
Predictor Variable: Anxious Attachment	-1.15	.16	-.50**	.25	.25**
Testing Path a					
Outcome Variable: Mindfulness					
Predictor Variable: Anxious Attachment	-.55	.06	-.60**	.36	.36**
Testing Path b and ć					
Outcome Variable: Academic Adjustment					

Meditator Variable: Mindfulness	1.10	.19	.44**	.38	.37**
Predictor Variable: Anxious Attachment	-.54	.18	-.24**	.25	.25**

Note: ** denotes $p < .01$.

Table 2. Testing the Mediator Effect Using Multiple Regression: Mindfulness mediates the effects of Anxious Attachment Style on Academic Adjustment in a Meditative sample (n = 165)

The final step in this mediation was to examine if the amount of the mediation was significant and this was carried out with the Sobel Test (Sobel, 1982; Soper, 2013). As indicated in Table 2, mindfulness was found to change the relationship between anxious attachment style and academic adjustment, as β = -.50 moved to β = -.24. This was found to be significant, z = -4.5, p < .01. Therefore, mindfulness partially mediated the relationship between anxious attachment style and academic adjustment in a meditative sample. The calculated effect size for this mediation analysis was f^2 = .61 and was considered medium (Sobel; Soper).

Testing steps in Mediation Model	*B*	SE *B*	β	R^2	ΔR^2
Testing Path c					
Outcome Variable: Academic Adjustment					
Predictor Variable: Avoidant Attachment	-.92	.20	-.34**	.12	.11**
Testing Path a					
Outcome Variable: Mindfulness					
Predictor Variable: Avoidant Attachment	-.41	.08	-.38**	.14	.14**
Testing Path b and ć					
Outcome Variable: Academic Adjustment					
Meditator Variable: Mindfulness	1.33	.17	.54**	.36	.35**
Predictor Variable: Avoidant Attachment	-.37	.19	-.14**	.11	.11**

Note: ** denotes p < .01.

Table 3. Testing Mediation Effects using Multiple Regression: Mindfulness mediates the effect of Avoidant Attachment Style on Academic Adjustment in a Meditative sample (n = 165).

As indicated in Table 3, mindfulness was found to change the relationship between avoidant attachment style and academic adjustment, as β = -.38 moved to β = -.14. This was found to be significant, z = -4.29, $p < .01$. Therefore, mindfulness partially mediated the relationship between avoidant attachment style and academic adjustment in a meditative sample. The calculated effect size for this mediation analysis was f^2 = .56 and was considered medium (Sobel; Soper).

Testing steps in Mediation Model	*B*	SE *B*	β	R^2	ΔR^2
Testing Path c					
Outcome Variable: Academic Adjustment					
Predictor Variable: Avoidant Attachment	-.73	.17	-.32**	.10	.10**
Testing Path a					
Outcome Variable: Mindfulness					
Predictor Variable: Avoidant Attachment	-.40	.05	-.53**	.28	.28**
Testing Path b and ć					
Outcome Variable: Academic Adjustment					
Meditator Variable: Mindfulness	.83	.26	.27**	.15	.14**
Predictor Variable: Avoidant Attachment	-.40	.20	-.17*	.10	.10**

Note: ** denote $p < .01$, * denotes $p < .05$

Table 4. Testing Mediation Effects using Multiple Regression: Mindfulness mediates the effect of Anxious Attachment Style on Academic Adjustment in a Non-meditative sample (n = 165).

As indicated in Table 4, mindfulness was found to change the relationship between anxious attachment style and academic adjustment, as $\beta = -.32$ moved to $\beta = -.17$. This was found to be significant, $z = -2.96$, $p < .01$. Therefore, mindfulness partially mediated the relationship between anxious attachment style and academic adjustment in a non-meditative sample. The calculated effect size for this mediation analysis result was $f^2 = .18$ and was considered small (Sobel; Soper).

The relationship between avoidant attachment style and academic adjustment in the non-meditative sample did not correlate. This was a non-significant relationship and therefore this relationship was not examined any further.

Discussion and Conclusion

The aim of the current research was to examine how interpersonal style predicts academic adjustment for first year university students and if this relationship was mediated by mindfulness. Mindfulness conceptualised as a set of skills, mindfulness resulting from meditation, was found to assist students with their adjustment to university and this was found for students who indicated higher in anxious and avoidant attachment styles.

This was found the case for both first year university student who endorsed higher anxious and avoidant attachment styles and therefore an insecure attachment style. This may be found for student who are socially struggling during their first year at university and may stressed adjusting to the many roles that they need to manage (Kanatis, 2000). However this current research provides evidence for mindfulness based interventions targeting the students' academic adjustment. How mindfulness skills are operationalized has not been a focus of this research, but it has provided a theoretical basis to suggest that it would be valid and worthwhile.

In the non-meditative sample, conceptualising mindfulness as a personality trait, it was found the mindfulness did mediate the relationship between an individual who reported an anxious attachment style in predicting academic adjustment. This is consistent with the theoretical definition of anxious attachment style; able to complete the task but with worry and concern. Interesting, a non-significant result was found for first year student who indicated a higher level of avoidant attachment style, and the relationship with their academic adjustment.

In consideration of this non-significant result, the definition on avoidant attachment style was thought in the context of a non-meditative sample. A possible explanation for this is that students who endorsed higher scores in avoidant attachment style, may have elicited an experience of emotional or cognitive responses to the questions in the SACQ. For example individuals who endorse higher scores in the avoidant attachment style may avoid or prefer not to be socially involved with others and social integration is certainly an aspect of adjustment of university.

However from another perspective, mindfulness can also manifest unwanted side-effects and its practice in clinical psychology needs to be monitored (Lustyk, Chawla, Nolan, & Marlatt, 2009). For example, for an individual who has experienced adversity and may have a

diagnosis of post-traumatic stress disorder and who has developed avoidant strategies to dealing with distress, mindfulness may "put them at risk for potential retraumatisation" (p.21; Lustyk, Chawla, Nolan, & Marlatt). The avoidant strategies serve a purpose to protect an individual from re-experiencing the adverse experience. While mindfulness asks an individual to be accepting of whatever experience your mind conjures, there is a fundamental difference between these approaches: avoid at all costs versus endurance.

In conclusion, the current quantitative research provides evidence for mindfulness based interventions for first year university student. Future research addressing different modalities such as mindfulness groups or mindfulness pedagogy could use this research as theoretical evidence. The value in assisting first year students through university has life-long implications, not only for the students, but also for the people, institutions, and communities around them.

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