**Making the Grade: A Pilot Investigation of an e-Intervention to Increase Mental Health
Literacy and Help-Seeking Intentions among International University Students**

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Abstract

International students may have less understanding and awareness of mental health issues and appear unlikely to seek help. The purpose of the current study was to construct and evaluate a brief online educational intervention designed to increase mental health literacy (MHL) and help-seeking among international tertiary students studying in Australia. The intervention was tested among 45 international tertiary students (undergraduate and postgraduate), who were randomly allocated to control and intervention conditions. The intervention led to significant improvements in help-seeking attitudes, particularly in stigmatising attitudes. No significant effects were found for MHL or help-seeking intentions. A brief educational intervention can improve help-seeking attitudes among international tertiary students. Future research may focus on establishing optimal intervention dosage.

Keywords: tertiary education; university students; mental health literacy; help-seeking; mental health

Funding: None to declare

Conflicts of Interest: None to declare

Acknowledgments: None to declare

Making the Grade: Feasibility of an e-Intervention to Increase Mental Health Literacy and Help-Seeking Intentions among International University Students

A number of studies have documented the various psychosocial, academic, and financial challenges that exist in the university environment (Furnham, Cook, Martin, & Batey, 2011; Larcombe et al., 2016; Palmer and Puri, 2006; Ryan, Shochet, & Stallman, 2010). Indeed, Stallman and Shochet (2009) found that 83.9% of students across three universities experienced elevated psychological distress. However, university students are a heterogeneous population, with unique needs and challenges across groups. For example, the challenges of functioning in a university environment appear more marked for international students, due to the additional stressors of transitioning to a new culture and social and learning environment (Khawaja and Dempsey, 2008; Lu, Dear, Johnston, Wootton, & Titov, 2013; Mesidor and Sly, 2016; Reavley and Jorm, 2010; Sullivan and Kashubeck-West, 2015). Over one in four (28.1%) tertiary students studying in Australia are international students (Department of Education and Training, 2018), with Australia having one of the highest proportions of international university students worldwide and exceeding the average of 6% among the Organisation for Economic Cooperation and Development (OECD) countries (International Strategy Office, 2017).

International students report experiencing considerable psychological distress, including helplessness, social withdrawal, loneliness, homesickness, irritability and even hostility and feeling sick in the process of acculturation (Mesidor and Sly, 2016; Sawir, Marginson, Deumert, Nyland, & Ramia, 2008; Sullivan and Kashubeck-West, 2015). According to Furnham and Bochner (1986), international students face four major categories of acculturation problems: general living adjustment, academic adjustment, social-cultural adjustment, and personal psychological adjustment. A key

question in this field concerns how to best reach and intervene to improve the health of this population, and whether online educational interventions regarding mental health issues may assist as an initial step in this process.

Help-Seeking Behaviours

Despite the high levels of distress among international students, there remains an underutilisation of mental health services (Morgan, Ness, & Robinson, 2003; Nilsson, Berkel, Flores, & Lucas, 2004; Raunic and Xenos, 2008; Yakushko, Davidson, & Sanford-Martens, 2008). Low rates of help-seeking are well documented among domestic students, however, a number of studies have found that international students demonstrate lower service use compared to their domestic counterparts (Hunt and Eisenberg, 2010; Khawaja and Stallman, 2011). In Australia, more than half of all international students are of Asian backgrounds (Department of Education and Training, 2016), with Morgan and colleagues (2003) finding that in Australia Caucasian students were more likely to seek counselling services than international students from Asian countries.

Help seeking among students suffering psychological distress is important in terms of both illness progression and treatment outcomes. Failure to access mental health services when needed can result in psychological distress and difficulties that follow a more severe course than would otherwise have occurred (Veaser and Blakemore, 2006). Additional consequences for those students not seeking help include suicidal intent (Drum, Brownson, Denmark, & Smith, 2009), academic difficulties and lower academic performance (Brackney and Karabenick, 1995), and dropping out of university (Pritchard and Wilson, 2003).

There are many factors that may prevent an individual from seeking help for mental health. These factors are commonly conceptualised as barriers to treatment,

such as transportation difficulties, service availability and accessibility, and cost (Mohr et al., 2010). A systematic review conducted by Gulliver, Griffiths, and Christensen (2010) identified that perceived barriers to help-seeking include stigma and embarrassment, problems recognizing symptoms (i.e., low levels of mental health literacy), and a preference for self-reliance. Additionally, help-seeking can be influenced by knowledge of available help resources and knowledge of symptoms of psychological distress (Hunt and Eisenberg, 2010; Lu, et al., 2013; Yorgason, Linville, & Zitzman, 2008). In a large sample ($N = 2785$) of university students, Eisenberg, Gollust, Golberstein & Hefner (2007) found that in addition to a lack of knowledge of services, students did not access help due to the lack of a perceived need and uncertainty about service effectiveness, which may also be conceptualised as a part of mental health literacy (Kutcher, Wei, & Coniglio, 2016).

Mental Health Literacy

Early definitions of Mental Health Literacy (MHL) focused on one's knowledge and beliefs about mental disorders (Jorm et al., 1997, p. 182), although this later evolved to include help-seeking constructs. Recently, MHL has been defined as: "understanding how to obtain and maintain positive mental health; understanding mental disorders and their treatments; decreasing stigma related to mental disorders; and, enhancing help-seeking efficacy" (Kutcher, et al., 2016). A number of studies have suggested that many international students have low levels of MHL (Ang and Liamputtong, 2008; Lu, et al., 2013; Raunic and Xenos, 2008; Shea and Yeh, 2008). Lu and colleagues (2013) examined barriers to seeking professional help for mental health problems in a sample of Chinese speaking international students in Australia and identified limited knowledge of available mental health services, the perception that their distress was not severe enough to access treatment, and the lack of

knowledge of symptoms of psychological distress. Additionally, Fan (1999) reported significant differences in knowledge of mental health services, with Asian university students demonstrating lower levels of knowledge when compared to their Anglo-Australian counterparts. This lack of knowledge of symptoms and services may act as a significant barrier to help-seeking intentions and behaviours. Indeed, a recent investigation identified that not only was MHL lower among international students than domestic students, but so were help-seeking attitudes and intentions (Clough, Nazareth, Day, & Casey, 2018). As such, targeting MHL in this population may lead to more positive attitudes and greater intentions to seek mental health treatment when needed (Potvin-Boucher, Szumilas, Sheikh, & Kutcher, 2010).

MHL Interventions

As higher levels of MHL are associated with higher intentions to engage in appropriate help seeking behaviours (Smith and Shochet, 2011; Wright, Jorm, Harris, & McGorry, 2007), a number of interventions have been designed to increase MHL in various populations (Bapat, Jorm, & Lawrence, 2009; Christensen, Leach, Barney, Mackinnon, & Griffiths, 2006; Lindsley, 2013; Potvin-Boucher, et al., 2010). These interventions have demonstrated an increase in levels of depression literacy (Kiropoulos, Griffiths, & Blashki, 2011), positive attitudes to seeking professional help (Perry et al., 2014) and help-seeking intentions (Taylor-Rodgers and Batterham, 2014). Additionally, a meta-analysis evaluating the efficacy of psychoeducation interventions for depression, anxiety, and psychological distress (Donker, Griffiths, Cuijpers, & Christensen, 2009), found a small, but significant, effect ($d = 0.20$) on depression and psychological distress in the intervention groups compared to the control groups. The use of online interventions specifically for promoting attitudinal or mental health literacy change is in its infancy. However, initial research suggests

that brief educational interventions delivered via the internet may be able to improve knowledge, attitudes, and health outcomes (Donker, et al., 2009; Gulliver, et al., 2010).

Strategies to improve attitudes towards seeking help and increase MHL are likely of particular importance in increasing mental health service utilisation among ethnic groups, such as international students (Youssef and Deane, 2006). While there has been extensive theoretical and explorative research on stigmatizing attitudes and help seeking behaviour, there have been few studies identifying effective interventions for increasing help seeking attitudes, intentions, and/ or behaviours among international students. To the researchers' knowledge, there has been no research that has designed and assessed the effectiveness of a single online intervention based on the promotion of MHL in an international student population.

Online Educational Interventions

Online interventions are now well established as a means of delivering mental health interventions (Baumeister, Reichler, Munzinger, & Lin, 2014) and educational programs (Hill, 2014). These programs can increase dissemination, are interactive, can provide tailored and personalised learning experiences, and are often highly cost-effective (Clough and Casey, 2011; Donker et al., 2015; Singh, 2003). Increasingly, technology based interventions are being used to support tertiary students, both with preventative and treatment approaches (Farrer et al., 2013). Kanekar et al (2010) found the online medium to be an effective tool for engaging Indian Asian international students studying in America in a resilience and acculturation based intervention. Furthermore, although in its infancy, initial research indicates that brief, online educational programs can improve attitudes toward and intentions to use mental health services among the general population (Casey, Joy, & Clough, 2013).

As yet, such an educational intervention targeting attitudes toward mental health and help-seeking has yet to be tested among international students.

The Current Study

The purpose of the current investigation was to construct and evaluate a MHL educational intervention, designed to increase the likelihood that international students in need of mental health services would, in fact, seek such services. Underlying this approach was the evidence that higher levels of MHL would be associated with more positive attitudes about mental health services, and an increased likelihood of seeking those services when needed (Potvin-Boucher, et al., 2010; Taylor-Rodgers and Batterham, 2014). An online delivery modality was selected to increase ease of dissemination among the international student population at a large Australian university, as well as for ease of integration and cost effectiveness as a brief, low intensity intervention. The efficacy of the intervention was tested against an active control condition, in which participants received information on an unrelated health topic: influenza prevention and hygiene. It was predicted that an improvement in attitudes, MHL, and help seeking intentions would be observed from pre- to post-intervention for those participants in the experimental condition, resulting in higher scores for participants in the experimental group than participants in the control group, on these dimensions.

Method

Participants

According to Connelly (2008) the sample size for preliminary investigative studies should be 10% of the sample projected for the larger study, or at a minimum, 10-30 participants (Isaac and Michael, 1995). As such, minimum sample size for the

current pilot study was determined to be 10% of that required for a full intervention study. A power analysis was conducted to determine minimum sample size for a full intervention study (using G*Power version 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009), estimated medium between groups effect size ($d = .50$; Casey, et al., 2013), two groups, power = .80, alpha = .05), which revealed 102 participants would be required. As such, minimum sample size for the pilot study was deemed to be 10% (10 participants) of this full estimate, in accordance with Connelly's (2008) guidelines. An additional 20% allowance was made for attrition, thereby making for a minimum sample size of 12 participants for the pilot study.

Seventy-six international students, who participated in a previous study examining MHL and help-seeking (Clough, et al., 2018), were recontacted by the researchers to participate in the current study. Of these, 45 participants provided consent and completed the intervention and follow up measures. As such, minimum sample size was met. Of the 45 participants, 19 were allocated to the active control condition and 26 to the MHL intervention. Allocation was conducted during data collection for the previous study (Clough, et al., 2018), leading to the uneven distribution of participants to condition following recontacting and consent for the follow-up study. The sample comprised 18 males and 27 females, aged between 17 and 52 years ($M = 25.80$, $SD = 6.68$), who were undertaking tertiary education in Australia on international student visas.

Design

The study was a mixed factorial design, with participants randomly allocated to receive either the MHL or influenza information interventions. Participants completed measures relating to MHL and help-seeking intentions pre-intervention and one week following the intervention.

Measures

Demographic characteristics. The demographic information collected was age, gender, ethnicity, nationality, time lived in Australia, current or completed area of study, years of university completed, previous use of mental health services, and score on the International English Language Testing System (IELTS). The IELTS is one of the most popular and most used tests of the standard of English and is used by the Australian government and universities for visa applications and entrance into universities (Feast, 2002). In general, an overall IELTS score between 6.00 and 7.00 indicates English language proficiency for higher education institutions (Feast, 2002). One item was used to measure the participants' previous use of mental health services (i.e. "Have you previously used mental health services such as a psychologist, a counsellor, or a psychiatrist?"). Participants were given three response options (yes, no, not sure). One item was used to measure the participants' reading ability (i.e. "How often do you need to have someone help you when you read instructions, pamphlets, or other written material from your doctor or pharmacy?"; Morris, MacLean, Chew, & Littenberg, 2006). Participants were given five response options (never, rarely, sometimes, often, always).

Help seeking attitudes. Attitudes towards help seeking were assessed using the Inventory of Attitudes toward Mental Health Services (IAMHS; Mackenzie, Knox, Gekoski, & Macaulay, 2004). The 24-item measure has three subscales, psychological openness, help-seeking propensity, and indifference to stigma. Higher scores on each subscale reflect greater psychological openness, great help-seeking propensity, and lower perceptions of stigma toward help-seeking. In the current study, the full scale demonstrated high internal consistency (Cronbach's alpha coefficient = .86).

Help seeking intentions. Intentions to seek help for mental health problems were measured by the General Help-Seeking Questionnaire (GHSQ; Wilson, Deane, & Ciarrochi, 2005), which asks participants to rate the likelihood they would use a source of help if they experienced mental distress. Participants respond to each item (source of help) on seven-point scales ranging from one (extremely unlikely) to seven (extremely likely). In the current study, as intentions to seek professional help were of primary interest, only items pertaining to professional help sources (rather than friends, family, or spiritual advisors) were analysed. These items were likelihood of seeking help from a doctor/ GP, phone helpline, or mental health professional. The GHSQ is scored on two subscales: intentions to seek help for suicidal problems and intentions to seek help for person-emotional problems.

To score the GHSQ, a variable labelled *highest help-seeking intention* was created for both the suicidal and emotional problem subscales. Each participant was allocated the highest score they gave to any one professional help source from the three included in the measure. As described in Smith and Shochet (2011), this scoring method is preferable to an average score of the professional sources, as an individual need only be willing to seek help from one particular professional source in order to receive appropriate assistance.

Mental health literacy. MHL was assessed using the Mental Health Literacy Scale (O'Connor and Casey, 2015), which measures knowledge about mental health and related issues. Responses summed to produce a total score, with higher scores indicating greater MHL. In the current study, internal consistency was high (Cronbach's alpha = .92).

Intervention Materials

Experimental Intervention. In the experimental condition, participants received information on the topic of depression, which included a vignette of an international student who was experiencing mental health problems, a description of depression and its symptoms, treatment, and help options. As a universal intervention, the focus was on content that was deemed relevant to the majority of students. The vignette was based on DSM – V (American Psychiatric Association, 2013) criteria. As a check on the content of the intervention, the script was provided to the associated university's Head of Counselling Services, who was asked to evaluate the script and provide feedback. The feedback from this staff member was evaluated and used to inform changes to the information script.

Control group. In the control condition, participants received information on an irrelevant topic (as has been used in health education trials; Portnoy, Scott-Sheldon, Johnson, & Carey, 2008), the influenza vaccination. The information contained on the webpage was derived from government health guidelines. The information included the importance of the influenza (flu) vaccine and common myths about the flu.

Procedure

To match responses over the one week testing period, participants completed an identification form at the start of the pre- and post- measures. This allowed the generation of an identification code for each participant, without disclosing their identity. Previous research has shown that participants tend to respond more accurately to sensitive questions if they are not required to disclose their names or other identifying information (Catania, Gibson, Chitwood, & Coates, 1990).

At each time point, the questionnaires and materials were delivered online, using LimeSurvey software. The site was able to be accessed by computer, tablet, and

mobile devices. The LimeSurvey software randomly allocated each participant to either the control condition or the experimental condition. Participants were informed that proceeding with the survey would be interpreted as providing informed consent. Participants then completed all pre-intervention measures and viewed the online information for their allocated condition. A knowledge check, which consisted of multiple-choice questions about the content of the information presented, was given to all participants to determine general comprehension of the content delivered. This brief quiz was administered after participants read the information. Identification numbers were then used to contact participants a week later for the link to the final survey to be emailed to them. All measures (excluding demographic questions, the information script, and the knowledge check) were repeated at the post assessment.

Results

Preliminary Analyses.

Data were checked for test assumptions. Where data were found to be skewed transformations were made. However, as transformations did not alter the significance or interpretation of results, only analyses on untransformed data are reported.

Equivalence of demographic variables. Equivalence checks were conducted to investigate whether significant differences existed between the two groups at pre-test on any predictive or outcome variables. Table 1 displays the participant characteristics at pre-test, compared by condition. Chi-square analyses for categorical variables and independent sample t-tests for continuous variables demonstrated no significant differences between the experimental and control conditions, indicating approximate equivalence between groups at pre-intervention.

Main Analyses

A series of mixed ANOVAs was conducted to determine the efficacy of the intervention. Descriptive statistics for all measures are displayed in Table 2.

Mental health literacy. The interaction and main effects were not found to be significant for MHL (p 's $> .34$), with small effect sizes observed (η_p^2 's $< .03$).

Help-seeking attitudes. Mixed model analyses for the help-seeking attitudes scale demonstrated no significant main effects for group or time (p 's $> .49$, η_p^2 's $< .01$). A significant interaction between group and time ($F(1, 39) = 5.43$, $p = .02$, $\eta_p^2 = .12$) was observed. To further explore the significant interaction, simple effects analyses were conducted with paired-samples t-tests for each group. A Bonferroni correction ($.05/2$) was utilised to control the familywise error rate. There was a statistically significant increase in IASMHS scores from pre- to post- intervention ($t(22) = 2.66$, $p = .01$, $d = .22$) for the experimental group. No such increase was observed for the control group ($t(17) = .94$, $p = .36$, $d = .13$).

Analyses were also conducted on the three subscales of the IASMHS. For the subscale of psychological openness, no significant interaction or main effects were found (p 's $> .35$, η_p^2 's $< .02$). For the subscale of help-seeking propensity, no significant interaction or main effects were found (p 's $> .12$, η_p^2 's $< .06$).

For the subscale of indifference to stigma, no significant main effects were found for group or time (p 's $> .54$, η_p^2 's $< .01$). However, a significant interaction was found ($F(1, 39) = 7.70$, $p < .001$), with a large effect size ($\eta_p^2 = .17$) observed. Paired-samples t-tests were conducted for each group between the pre- and post- time points, with a Bonferroni correction utilised ($.05/2$). There was a statistically significant increase in scores for indifference to stigma from pre- to post- ($t(22) = 2.90$, $p = .01$)

for the experimental group, with a small effect size observed ($d = .25$). No such increase was observed for the control group ($t(17) = 1.27, p = .22, d = .15$).

Help-seeking intentions. For the highest rating (among professional sources) of help-seeking intentions for emotional problems, no significant interactions or main effects were found (p 's $> .49$, η_p^2 's $< .01$). For the highest rating (among professional sources) of help-seeking intentions for suicidal thoughts, no significant interaction or main effects were found (p 's $> .38$, η_p^2 's $< .02$).

Discussion

Psychological distress is common among international students at tertiary education institutions due to the additional challenges of transitioning to a new culture and social and learning environment (Lu, et al., 2013; Mesidor and Sly, 2016; Sullivan and Kashubeck-West, 2015). However, there is a discrepancy between needs for mental health services and actual help seeking among this student population. To the researchers' knowledge there has been no previous study examining an educational intervention designed to promote MHL and help seeking attitudes among international students, as was the aim of the current research.

Help-seeking attitudes

In line with past research (Perry, et al., 2014; Taylor-Rodgers and Batterham, 2014), the intervention led to increased overall help-seeking attitudes, and specifically reduced stigma, at post-intervention relative to pre-intervention. The finding that educational interventions can reduce stigma and improve help-seeking attitudes has previously been reported (Bapat, et al., 2009; Kiropoulos, et al., 2011; Perry, et al., 2014; Sharp, Hargrove, Johnson, & Deal, 2006). However, this is the first study to demonstrate such benefits among international students in Australia. Strategies in the

intervention that may have contributed to the specific stigma reduction effect include the use of a case study involving an international student, the reinforcement of the message that depression and other psychological difficulties are treatable, details of available professional services, common risk factors to international student wellbeing, and normalisation of the occurrence of psychological difficulties among international students.

Mental health literacy and help-seeking intentions

Despite the positive findings for help-seeking attitudes, the intervention did not significantly impact upon participants' MHL levels. Unlike previous research, the current study did not find statistically significant evidence that attitudes would only increase if literacy levels increase too (Rüsch, Angermeyer, & Corrigan, 2005; Wang and Lai, 2008). The failure to detect significant changes in levels of MHL has several potential interpretations. Firstly, one possible explanation for these findings is an insufficient duration or dose of the program, as previously found by Perry and his colleagues' (2014) in a classroom intervention. Findings from Perry et al. (2014) indicated that MHL declines over time without additional learning. Since the current study did not provide any further information to participants in the one-week period between pre-test and post-test time points, it is possible that the effects of any learning that did occur during the brief intervention attenuated over this one week period.

Another possible explanation is that MHL in the current sample of international students was already considerably higher (approximately 10 points) than that of the previous population study (Clough, et al., 2018), suggesting potential sampling bias in the opt-in process for this study, thereby limiting capacity for intervention effects to emerge. It is possible that selection bias may have occurred among those participants choosing to participate in the study. In addition, the unequal

allocation of participants to conditions (as was determined by participation in a previous study) should also be recognised as a limitation which may have affected the generalisability of results. These limitations may be overcome in future research by utilising action research designs and integrating interventions into university procedures, such as orientation or enrolment packages. Lastly, in line with previous research (Rüsch, et al., 2005) the results of the current study support previous findings that educational interventions often yield small effect sizes.

In addition to the absence of significant change in levels of MHL, no intervention effects were observed for help seeking intentions. This finding is consistent with a previous study that reported similar outcomes for a sample of individuals with elevated depression scores (Christensen, et al., 2006). The magnitude of the effect sizes for the intervention in the current study were small. Even small effect sizes have been argued to translate into worthwhile gains in a public health context involving large numbers of people, and where an intervention can be delivered conveniently and at low cost (Jorm et al., 2003). However, as the current study was a small sample size “proof of concept” study, the reliability of the effect sizes has yet to be established. Lastly, a recent systematic review (White, Clough, & Casey, 2018) has also identified a lack of precision in the measurement of help-seeking intentions, which also needs to be considered in the context of these findings. Further investigation is required to determine whether effects of the current study are reliable and stable before interpretation at a population level.

Summary and Future Research

This study demonstrated that, relative to an information control group, a brief psychoeducational intervention resulted in a statistically significant reduction in stigmatizing attitudes and improved overall attitudes towards help-seeking among a

small group of international students. This effect is of particular importance given that stigmatising attitudes have been associated not only with help-seeking, but to self-efficacy in treatment, treatment outcomes, and have been argued to be the main obstacle to mental health programme success (Sartorius, 2007). Among tertiary students, and particularly international students, stigma toward mental health has been found to be elevated, and negatively associated with help-seeking (Daniel Eisenberg, Golberstein, & Gollust, 2007). As such, interventions to promote attitudinal change and reduce stigmatising attitudes are highly relevant for this population, with the current study demonstrating that a brief educational intervention can successfully produce such change. Although, significant change was not observed on the remaining variables of interest, it should be noted that the current study was conducted as a pilot study, and as such was under-powered to detect such changes. A larger controlled trial would provide greater insight and confidence into these intervention effects.

Overall, the current findings raise several possibilities for future research. Firstly, it may be valuable to consider methodological improvements in designing similar psychoeducation interventions for promoting help-seeking, such as conducting focus groups with the target population, as well as examining optimum dosage for educational interventions in this population. Furthermore, other methods of delivering the content, such as multimedia videos, also warrant investigation. Within the higher education context, the current research suggests potential for tailored interventions directed at international student populations to improve help-seeking attitudes. Advertising and promoting the use of free and confidential university counselling services to international students, as well as the implementation of MHL campaigns, may help to reduce stigma and improve help-seeking attitudes among this population.

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Table 1

Characteristics of participants in experimental and control conditions at pre-test

	Control	Experimental			
	M (SD) / n (%)	M (SD) / n (%)	df	χ^2 / t	<i>p</i>
Age	26 (8.51)	25.70 (5.21)	43	.17	.87
Gender			1, <i>n</i> =45	<.00	1.00
Male	8 (42%)	10 (39%)			
Female	11 (58%)	16 (62%)			
Ethnicity			1, <i>n</i> =45	10.35	.24
Asian	6 (32%)	8 (31%)			
Middle Eastern	1 (5%)	2 (8%)			
African	1 (5%)	3 (12%)			
European	10 (53%)	4 (15%)			
Indian	1 (5%)	3 (12%)			
South American		2 (8%)			
Canadian		1 (4%)			
Multiracial		2 (8%)			
Years at university			1, <i>n</i> =45	7.82	.35
None	2 (11%)				
Currently in first year	5 (26%)	6 (23%)			
Currently in second year	1 (5%)	5 (19%)			
Currently in third year	2 (11%)	5 (19%)			
Currently in fourth year	1 (5%)				
Completed bachelor's		1 (4%)			
Currently postgraduate	6 (32%)	8 (31%)			
Completed postgraduate	2 (11%)	1 (4%)			
Years in Australia			1, <i>n</i> =45	1.02	.91
3 months or less	6 (32%)	9 (35%)			
6 months or less	3 (16%)	2 (8%)			
12 months or less	3 (16%)	4 (15%)			
3 years or less	5 (26%)	9 (35%)			
More than 3 years	2 (11%)	2 (8%)			
Study Discipline			1, <i>n</i> =36	3.28	.19
Psychology	4 (21%)	1 (4%)			
Other health-related	3 (16%)	2 (8%)			
Other	10 (53%)	16 (62%)			
IELTS score	7 (0.71)	6.9 (0.82)	32	.32	.75
Previous use of MHS			1, <i>n</i> =45	.11	.75
Yes	5 (26%)	8 (31%)			
No	14 (74%)	18 (69%)			
Proximity to MH	3.32 (2.43)	2.96 (2.11)	43	.52	.60
Mental health literacy	123.42 (14.15)	117.08 (14.18)	43	1.48	.15
Help-seeking attitudes	64.79 (14.75)	58.23 (14.41)	43	1.49	.14
Psychological openness	18.89 (5.66)	16.50 (5.98)	43	1.36	.18
Help-seeking propensity	23.74 (5.99)	21.31 (4.38)	43	1.57	.12
Indifference to stigma	22.16 (7.93)	20.42 (7.88)	43	.73	.47
Highest help-seeking intentions (E)	5.58 (1.35)	5.42 (1.36)	43	.38	.71
Highest help-seeking intentions (S)	5.42 (1.90)	5.65 (1.41)	43	.47	.64

Note. E: emotional problems; S = suicidal thoughts.

Table 2
Pre- and post- intervention scores for experimental and control conditions

	MHL		Help-seeking attitudes		Indifference to Stigma		Highest help-seeking intentions (E)		Highest help-seeking intentions (S)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Control	123.44 (14.56)	121.39 (19.00)	64.83 (15.17)	63.06 (12.67)	22.78 (7.67)	21.61 (7.94)	5.50 (1.34)	5.61 (1.34)	5.39 (1.94)	5.67 (1.88)
Experimental	117.52 (15.06)	117.71 (16.17)	59.83 (13.88)	63.13 (15.46)	21.26 (7.12)	23.09 (7.39)	5.33 (1.40)	5.43 (1.21)	5.62 (1.53)	5.48 (1.40)

Note. SDs are displayed in parentheses. E: emotional problems; S = suicidal thought