Depression: A comparison of Australian and Indian University Students

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Ethical Standards: The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

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The present study compared Australian and Indian university students to examine their depressive experiences and the factors associated with their depressive symptoms. Australian (n = 417) and Indian university students (n = 397) completed a battery of questionnaires at their respective universities. Hierarchical regression analyses, after taking into account demographic factors, indicated that psychosocial factors in varying order were associated with depressive symptoms in both samples. In the Australian sample, a perceived lack of connectedness with the university appeared as the strongest factor followed by perceived stress, maladaptive perfectionism, and a decrease in coping, personal standards, organisation, and university support. In the Indian sample, maladaptive perfectionism emerged as the strongest factor, followed by university connectedness, perceived stress, and a low level of problem-focused coping. Implications for allied and health professionals in the two countries are discussed. More specialised and tailored support is recommended in the two countries.

Keywords: *Academic stress, connectedness, coping, depression, perceived stress, perfectionism, student, support, university.*

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Introduction

Depressive symptoms among university students are a major concern for university authorities and mental and allied health professionals (Acharya et al., 2018; Peltzer & Pengpid, 2015). There is considerable evidence that depressive symptoms are associated with university students' impaired psychosocial and academic functioning (Acharya et. al., 2018). Depressive symptoms increase the students' risk of other major mental health issues (Peltzer & Pengpid, 2015). In the West, extensive research on university students has focussed on prevalence and a range of demographic and psychosocial factors associated with university students' depressive symptoms. While information about the prevalence of depressive symptoms is emerging in non-Western countries, there is still limited information about depressive symptoms among students in these countries.

More specifically, it is unclear whether the levels of depression or demographic and psychosocial factors observed in Western countries are also comparable to students from different cultures. Cross-cultural investigations are vital to fully understand and manage students' depressive symptoms globally. Further, it is important to use appropriate scales developed to measure symptoms of depression among university students (Romaniuk & Khawaja, 2013).

Most studies with university students have used self–report measures to examine the depressive symptoms. A systematic review of depression in university students, which incorporated studies using a wider range of valid self-report measures, found that on average prevalence of depressive disorders was 30.6% across 24 studies (Ibrahim et al., 2013). However, as the majority of these investigations were carried out in Western countries (Ibrahim et al., 2013), to address this disparity, other research has examined depressive symptoms experienced by students in non-Western countries (Ben-Ezra & Essar, 2004; Peltzer & Pengpid, 2015).

University students from non-Western countries in Asia (Bayram & Bilgel, 2008; Gunay et al., 2011; Lei et al., 2016; Shamsuddin, et al., 2013; Takayama et al., 2011), the Middle East (Ibrahim et al., 2013; Dinkha & Mobasher, 2012; Hamdan-Mansour et al., 2009) and Africa (Othieno et al., 2014) have reported high levels of depressive symptoms. A systematic review by Akhtar et al. (2020), indicated that 24 % of university students from low- and middle-income countries experienced depression. According to some studies, the levels of depressive experiences were considerably higher than that of students in the West (Bayram & Bilgel, 2008). Studies in India, which examined depression among tertiary students, found a mean prevalence around 50 percent (Joseph, 2011; Nagendra et al., 2012; Singh et al., 2011).

There is substantial evidence that demographic factors are associated with university students' depressive symptoms (Farrer et al., 2016). Studies conducted in the Western countries have highlighted that financial burden, in the form of tuition and living expenses of university education tends to increase students' depression (Adams et al., 2016). Further, students have to enter paid work to manage their financial expenses. However, employment can increase students' overall workload and their susceptibility to depressive symptoms (Khawaja & Duncanson, 2008; World Health Organisation, 2012). The studies conducted in non-Western countries indicate depressive symptoms to be related to low socio-economic factors (Ibrahim et al., 2013; Othieno et al., 2014). A large cross-cultural comparison of university students from 23 countries with varying economical levels found students from developing countries with financial inequality experience more depressive symptoms than those from high-income individualistic countries (Steptoe et al., 2007). Nevertheless, another cross-cultural comparison (Khawaja et al., 2013) found students in Australia, compared to those from Iran and Portugal, reported a higher level of depression. According to the authors, despite the high quality of life in Australia, individualism and a competitive nature of the society contributed to the students' depression.

Considerable data collected from the Western countries indicates that depressive symptoms are higher in female university students, compared to their male counterparts (Acharya et al., 2018; Khawaja & Duncanson, 2008). Studies conducted in the non-West countries have revealed mixed findings for gender. Although, Singh et al. (2011) identified female students to be more depressed in India, others reported Indian males to be more depressed than females (Nagendra et al., 2012). Khawaja et al. (2013) compared university students in Australia, Iran, and Portugal and found depressive symptoms to be higher among male students in Iran. Other studies conducted in India, China and Turkey found no gender- based difference in depressive symptoms (Gunay et al., 2011; Joseph, 2011; Lei et al., 2016).

In the Western countries, other factors, such as living away from home, and the stress associated with this transition can increase the students' vulnerability (Robotham, 2008; Tosevski, Milovancevic, & Gajic, 2010). Further, younger students compared to the mature aged students (Cameron, 2010) and being in the first year of undergraduate education (Farrer et al., 2016) are also associated with depressive symptoms. Similarly, reserch conducted on students in non-Western countries have identified similar triggers for depression. Singh et al. (2011) identified higher rates of depression in those who were in their first or second year of their education, abused substances, or lacked support. Older compared to younger students, and single students compared to married ones, were similarly identified as more depressed in Turkish and Malaysian studies (Bayram & Bilgel, 2008; Shamsuddin et al., 2013).

In general, a range of psychosocial factors are found to be associated with depressive symptoms (Christensson et al., 2011). A bulk of literature indicates that academic stress is common globally and is associated with such symptoms (Barker et al., 2018). University students from all over the world are often burdened by the academic workload (Mikolajczk et al., 2008). There is a strain associated with attending lectures, completing assessment and obtaining high grades (Zhang & Zheng, 2017). In the West, academic stress, which may be related to inadequate skills, is associated with depressive symptoms (Hysenbegasi et al., 2005). Similarly, fluctuating academic demands through the academic year or course have also been associated with depressive symptoms (Barker et al., 2018; Leahy et al., 2010). It appears that in the case of university students in non-Western countries, academic stress in the form of high expectations to achieve is associated with depressive symptoms (Bilican et al., 2016). Further, low motivation and poor academic performance appeared to be related to depressive symptoms among students in Africa (Agolla & Ongori, 2009).

University education can be demanding and competitive, with students feeling pressure to obtain high grades to secure a place in professional degrees or in a work environment (Schofield et al., 2016). Therefore, many students in the West adhere to perfectionism to cope with the demands of academic achievement. Nevertheless, perfectionism can be either adaptive or maladaptive (Khawaja & Armstrong, 2005). Even though adaptive perfectionism in the form of being organised and having high standards may assist students, maladaptive perfectionism as manifested by unrelenting high standards and expectations to excel, along with a tendency to self-doubt and undermine one's abilities, is counterproductive and linked to depression (Mead & Hicks, 2010). Consistent with studies conducted in the West, maladaptive perfectionism was linked with depressive symptoms of students in China (Zhang et al., 2013). Further, in Iran perfectionism driven by social pressures and demands was associated with depression among tertiary students (Besharat et al., 2014).

Literature suggests that students' perception of their academic challenges and appraisal of their own capacity to cope is important for their wellbeing (Acharyta et al, 2018). Students

can perceive their university requirements and tasks as aversive and stressful (Adams et al., 2016). Further, their tendency to appraise their own coping skills and resilience as low can trigger depressive symptoms (Abdollahi et al., 2018). Findings based on studies conducted in the Western countries indicate that low self-efficacy, inadequate problem-solving skills, and a disengaged coping style can also increase the likelihood of depressive symptoms (Abdollahi et al., 2018; Julal, 2013). Further, studies conducted in non-Western countries show those university students' ruminations and thoughts about low self-esteem aggravate their symptoms (Martin & Atkinson, 2020). A low level of social support, lack of personal resources, limited resilience and coping are linked with depressive symptoms (Abdollahi et al., 2018; Martin & Atkinson, 2020).).

In general, universities are aware of the challenges students encounter and try to offer support (Barker et al., 2018). In the West, universities offer various academic and psychosocial supports to help students manage their academic and interpersonal difficulties (Julal, 2013). Many universities try to promote a sense of connectedness between students and the university, as it can act as a protective factor and help students manage their stresses (Levett-Jones et al., 2009). An absence of support and a lack of connectedness can contribute to depression symptoms (Cockshaw et al., 2013; Julal, 2013). Further, facilities vary in quality and may be absent in developing countries (Li et al., 2018; Soliman, 1991). Limited resources for students in low-income countries are related with depressive experiences (Agolla & Ongori, 2009).

In summary, the prevalence of depressive symptoms among university students appears to be a global problem (Ibrahim et al., 2013; Peltzer & Pengpid, 2015). Further, research conducted in both Western and non-Western countries has indicated that students perception of stress, negative thought processes) associated with maladaptive perfectionism and unrelenting high standards predict depressive symptoms (Dunkley et al., 2012; Mead & Hicks, 2010; Schofield et al., 2016). Further, low level of personal strengths and resilience, inadequate and poor coping and problem solving are associated with depression in university students (Abdollahi et al., 2018). Finally, an absence of social support and a sense of connectedness at university level predicted depressive symptoms (Cockshaw et al., 2013; Julal, 2013). Thus, these previous studies have highlighted the possibilities of some common features among the depressive experiences of students from both Western and non-Western countries. Nevertheless, some differences indicate the possibility of variation in the factors associated with the experiences of depressive symptoms of students in different parts of the world (Angolla & Ongori, 2009; Ibrahim et al., 2013; Khawaja et al., 2013; Nagendra et al., 2012;). Considering the adverse effect of depressive symptoms on students, it would be beneficial to examine the role a range of demographic and psychosocial factors play in the depressive symptoms of students (Khawaja et al., 2013; Steptoe et al., 2007). Subsequently, a cross-cultural investigation is important to understand the depressive features which may be common or unique to students from Western and non-Western countries.

The present study aimed to compare students from Australia and India. These two countries differ culturally, as Australia is part of the West and an individualistic and egalitarian society, while India is a collectivistic, authoritarian, and hierarchical society, and considered anon-Western countries (Basabe & Ros, 2005). The present study aimed to use the University Students Depression Inventory (USDI; Khawaja & Bryden, 2006) to explore differences in depressive symptoms between an Australian and Indian sample, and to understand any cultural differences in depression scores. The USDI was developed specifically for university students and has been evaluated using student populations from Western and non-Western countries (Khawaja et al., 2013). The stability of its factors and psychometric properties across cultures indicates its suitability for cross-cultural investigations (Habibi et al., 2014; Romaniuk & Khawaja, 2013). The study aimed to compare the students from the two countries to examine if there were differences in their level of depressive symptoms. As depressive experiences are common among students, it was hypothesised that there would be no significant difference between the two groups. The relationship of demographic and psychosocial factors, including coping, perfectionism, perceived stress, academic stress, and university connectedness and support, with depressive symptoms in the Indian and Australian students was also explored. It was also hypothesised that, due to the cultural contextual differences of these countries, psychosocial factors associated with depressive experiences of the two populations would differ. Taking into an account the exploratory nature of this investigation, no direction was specified.

Methods

Setting

The study was conducted at two universities: one in Australia and the other in India. The Australian university is a public institution established in a large metropolitan city. It falls in the category of younger universities (under 50 years). Its student population is approximately 45,000. The university has three campuses. The students are enrolled in undergraduate and postgraduate courses. The university has a strong emphasis on academic and research programs. The Indian institution is a central university, set in a smaller town. It is a young university (35 years old) with four campuses. The students (approximately 5000) at the university are enrolled in various postgraduate programs. However, nearly 45,000 students are enrolled in various undergraduate programs at 87 colleges linked with this university.

Participants

Participants fell into two samples. Sample 1 consisted of students from an Australian university (n = 417). The mean age was 24 years (SD = 8.49 years). Eighty percent were female and the others male. Almost all were Caucasian (85%) and domestic (96%) students. Forty-six percent of students were in first year, 25% in second year, and the remaining students (29%) were from third and fourth years, or from master or doctorate programs. The majority (83.3 %) were enrolled as full-time students, and 13.7% as part-time students. Forty-six percent of students worked casually, while 24% were unemployed, and the others were employed part-time (22 %) or full-time (8%). Eighty-three percent of participants were from the Faculty of Health and the remaining from other faculties. Just over half (52%) reported their financial situation as fair, while others considered it very satisfactory (30.5%) or poor (17.5%). Their sources of financial support varied. Nearly half (47%) supported themselves through employment, while other were supported by their parents (28%), spouses (6%), government allowance (14%), scholarships (4%),

or savings (1%). Half of them were very satisfied and the other half fairly satisfied with their living arrangement.

Sample 2 consisted of students from an Indian university (*n* = 396). The mean age was 23 years (*SD* = 1.96 years). Fifty-two percent were males, 47% were females, and the data were missing for two participants. Ethnically, they were all from India. Forty-seven percent of the students were enrolled in the master's program, 12% were doctoral students, and 36% were second year students, while the remaining students were from the other years. All students were enrolled full-time. A high number (78%) were not in any paid work, while 15% worked casually, and a very small number were in part-time or full-time paid work (7%). Nearly half of them were from Health and Law faculties and the others from the remaining faculties. They were either very satisfied (41%) or fairly satisfied (59%) with their financial situation. The majority of the participants were financially supported by their parents (80%), a small number (13%) were on scholarships, while a few (7%) supported themselves through employment. Most (80%) of them were fairly satisfied with their living arrangements, while some were very satisfied (13%), and a few (7%) claimed to be living poorly.

Procedure

Clearance was obtained from the ethical committees of the Australian and Indian universities. Participants were recruited from both universities, which had large student populations and offered a range of degrees and courses. In Australia, participants were used to participating in research projects through an online method, while in India participants were more used to hard copy collection in a face-to-face setting. Both samples received an exactly similar protocol, which consisted of information sheet, measures and a debrief note. All participants had the opportunity to ask questions before commencing their participation. They were also informed about confidentiality and their right to withdraw from the study. The Australian participants were informed that they would not be able to withdraw once the questionnaires were submitted. Submission of the hard or electronic copy was considered participants' consent. Though there was no known risk attached to the study, participants were informed about counselling and other mental health services that were available for participants on and off campus. They were asked to contact these services if, due to some reason, they experienced distress as a result of their participation in the project. Further, the participants were reminded about the facilities as a part of the debrief note. In Australia, the first author disseminated the information about the study through the official website for the School's research projects. Students were invited to participate in the study. Those who agreed to participate used an online link to complete the questionnaire. Participants completed the instrument in their own time. Only those enrolled in first-year psychology courses, received a credit for their participation. The second author collected the data from the Indian university. Information about the study was announced at lectures and students were invited to participate. Those who volunteered and expressed an interest in participating were asked to attend group data collection sessions organised on various days and times during the teaching period. Participants completed the hard copies of the questionnaires.

Measures

Demographic Questionnaire. Demographic details such as gender, age, marital status, ethnicity, course of enrolment, enrolment status, year level, occupation, and satisfaction with financial situation and accommodation were obtained.

University Student Depression Inventory (USDI; Khawaja & Bryden, 2006). The scale consists of 30 items, which fall in three factors and measure depressive symptoms among university students. The three factors were lethargy, cognitive-emotional and academic motivation. Depression is represented by cognitive, emotional, lethargy, and academic motivational symptoms. Respondents apply a 5-point Likert scale, ranging from 1 (not at all) to 5 (all the time), to each item in order to indicate how often they have experienced the depressive symptoms in the past two weeks. The Cronbach's alpha of the total scale and the factors ranged from .84 to .95. Test-retest for total scale and the factors range from .76 to .91. Convergent and discriminant validity is satisfactory (Khawaja & Bryden, 2006). Cut-off levels are provided to assess the level of severity (Romaniuk & Khawaja, 2013). Elevated scores indicate an increased level of student depressive symptoms.

The Coping and Self-Efficacy Scale (CSES; Chesney, Neilands, Chambers, Taylor, & Folkman, 2006). The scale consists of 26 items and measures the participant's belief about their capacity to cope with difficulties. The items fall into three factors: Problem-Focused Coping, Stopping Unpleasant Emotions and Thoughts, and Obtaining Support from Friends9 and Family. Respondents use a 10-point Likert scale, ranging from 0 (cannot do at all) to 10 (can always do it), to indicate how confident they feel utilizing a range of different coping strategies. Higher scores reveal an enhanced coping self-efficacy. The Cronbach's alpha for the three factors is reported as .91, .91, and .80 respectively (Chesney et al., 2006). Validity studies indicated that the three factors predicted a reduction in psychological distress over time (Chesney et al., 2006).

Frost Multidimensional Perfectionism Scale (FMPS; Khawaja & Armstrong, 2005). The scale is a revision of the original 35-item scale developed by Frost et al. (1990). Khawaja and Armstrong (2005) validated the scale on an Australian sample and identified four factors consisting of 24 items. The factors measure maladaptive and adaptive aspects of perfectionism and are used separately. Concern with Mistakes and Doubts about Actions, and Parental Expectation and Criticism, reflect the maladaptive perfectionism. Organization and Personal Standards reveal the adaptive perfectionism. The Cronbach's alpha for the total scale and its dimensions ranged from .70 to .90. Concurrent validity is supported by its high correlation with the original scale. The correlation for the total and the subscales ranged from .69 to .98 (Khawaja & Armstrong, 2005).

Perceived Stress Scale (PSS; Cohen & Williamson,1988). This 10-item scale measures the degree to which situations are appraised as stressful and uncontrollable during the previous one-month period. On a 5-point Likert scale ranging from 0 (never) to 4 (very often), respondents indicate how often they felt or thought a certain way over the past month. Robert et al., (2006) revealed a two-factor structure of Perceived Helplessness and Perceived Self-Efficacy. The Cronbach's alpha for the total scale is .89. The subscales Perceived Helplessness and Perceived Self-Efficacy had an internal consistency of .85 and .82 respectively. Convergent and divergent validity is supported. Higher scores indicate greater perceived stress.

Academic Stress Scale (ASS; Sam,2001). The scale consists of six items and measures academic stress. Items reflect problems related with concentration during lectures and

study, problems comprehending lectures and asking questions in class, and feeling overwhelmed and failing to manage studies. Respondents use a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), to indicate how often he/she thought or felt in that way. The Cronbach's alpha for the total scale is .83 (Sam, 2001). Scores were reversed to make sure that the higher scores indicated an elevated academic stress.

University Connectedness and Support Scale (UCSS; Gloria & Kurpius,1996). The scale consists of 19 items and is an adapted version of the University Environment Scale (Gloria & Kurpius, 1996). The items were thematically grouped in two sub-scales: Connectedness and Support. Respondents use a 7-point Likert scale, ranging from 1 (not at all) to 7 (all the time), to indicate their perception of the support available from the university and a sense of belongingness and connectedness. The Cronbach's alpha for the original University Environment was .84 and its predictive validity was also supported (Gloria & Kurpius, 1996). Low scores on the two sub-scales indicate an absence of connectedness with the university and sense of not being supported by the university and the staff.

Results

Preliminary Analysis and Data Screening

Missing data were minimal. Most variables were missing less than 1% and the maximum amount of missing data for any variable was 3.9%. Replacement values were imputed with the estimation maximization method. Results of analyses with and without imputed data were compared with no notable differences in the strength and patterns noted, suggesting no systematic impact of missing data. Results reported herein are based on the data set incorporating imputed values to maximize power. All assumptions of the regression analyses conducted were met with no marked departures from normality and residuals related assumptions. Internal consistency for the measures used was evaluated using the two samples. Table 1 shows the Cronbach alphas for the scales and subscales used in the analyses. Overall, the internal consistency was satisfactory. The coefficients were higher for the Australian sample than the Indian sample. The internal consistency of 2 FMPS subscales (Parental Expectation and Organization) was low for the Indian sample. A decision was made to retain the 2 subscales in the analyses to maintain consistency across the 2 sample. Cut-off levels for USDI (Romaniuk & Khawaja, 2013) were used to identify the students' level of depressive symptoms (Table 2). Most of the students fell in the low category (43.0% Australians and 53.3% Indian (Table 2). Chi-square analysis revealed a significant difference in the distribution of proportions of students in each severity category between the Australian and Indian Samples ($\chi^2(3) = 18.91$, $p < .05$, $\Phi = .15$, 95% BCa CI = .079, .236). An examination of standardised residuals at the cell level showed that this significant result stemmed from the severe category, with significantly more Australian students than expected falling into this category and significantly less Indian students falling into this category than expected. Further, an examination of z-test for proportions results revealed a significantly higher proportion of Indian students falling into the low category (53.3%) than Australian students (43.0%, $p < .05$) though the standardized residuals for these cells within the chi-square analysis did not reach the significance threshold.

Table 1.

Cronbach's Alphas for the Measures used in the Analyses		
Scale/ subscale	Australian Sample	Indian Sample
USDI	.95	.92
PSS	.88	.67
ASS	.71	.59
CSES-Problem Focused	.93	.84
CSES-Stopping Unpleasant Thoughts	.92	.77
CSES-Support	.82	.67
FMPS-Concerns with Mistakes and Doubts about Actions	.87	.71
FMPS-Parental Expectation and Criticism	.89	.54
FMPS-Organization	.86	.61
FMPS-Personal Standards	.76	.43
UCSS-Support	.86	.76
UCSS-Connectedness	.85	.65

Note. USDI: University Students Depression Inventory: CSES: Coping Self Efficacy Scale; FMPS: Frost Multidimensional Perfectionism Scale; UCSS: University Connectedness and Support Scale.

Table 2.

Proportions of Students within each severity category of the University Students Depression Inventory (USDI) with associated significance tests		
USDI Category	Australian Sample (n = 414)	Indian Sample (n = 394)
Low *	43.0%	53.3%
Moderate	32.4%	33.5%
Severe * #	22.7%	11.7%
Extremely Severe	1.9%	1.5%

*Note. # = standardized residual for this cell within the cross-tabulation was larger than 1.96 and hence significant at p< .05. * p< .05 via z-test for proportions comparing column percentages for individual rows.*

Factors associated with Depressive Symptoms

Strong correlations are noted amongst the psychological variables used in the regressions. Two hierarchical regressions predicting USDI score were conducted with the two student samples with demographic variables entered in step one and psychological variables entered in step two. Additionally, Fisher's z transformation tests were used to test whether there were significant differences in the strength of predictors across the two sample groups. The results of these analyses can be found in Table 3.

The total model accounted for 69% within the Australian sample (R^2 = .69, R^2_{Adj} = .67, F(17, 399) = 51.24, p< .001) and 51% within the Indian sample (R^2 = .51, R^2_{Adj}j = .49, F(17, 375) = 23.17, p< .001). The demographic variables of age, gender, employment status, university year level, satisfaction with

financial support, and satisfaction with living arrangements accounted for 6% and 5% for the Australian and Indian samples respectively (Australia R^2 = .06, R^2_{Adj} = .05, F(6, 410) = 4.37, p< .001; India R^2 = .05, R^2_{Adj} = .04, F(6, 386) = 3.43, p = .003). Subsequently, these demographic variables were not significant in the depressive experiences of the students. The addition of the psychological variables added substantial predictive power to the two models with 63% added within the Australian sample (R^2_{change} = .63, F(11, 399) = 72.25, p< .001) and 46% added within the Indian sample (R^2_{change} = .46, F(11, 375) = 32.26, p< .001).

Table 3. Hierarchical Regression Analysis for Variables Predicting USDI Scores among Australian and Indian University Students

	Australian Students (N = 417)				Indian Students (N = 393)				
Variable	***B* (95% CLs)**	***SE B***	***β***	***sr 2***	***B* (95% CLs)**	***SE B***	***β***	***sr 2***	***Fisher's Z***
Step 1 – Demographics	R^2_{change} .06				R^2_{change} .05				
Age	-0.55 (-0.21, 0.10)	0.08	-.02	.00	-0.48 (-1.22, 0.25)	0.38	-.05	.00	0.40
Gender	-0.20 (-3.36, 2.95)	1.61	-.00	.00	-1.74 (-4.70, 1.22)	1.50	-.05	.00	0.54
Employment	0.42 (-2.46, 3.29)	1.46	.01	.00	-0.75 (-4.13, 2.64)	1.72	-.02	.00	0.34
University Year	-0.42 (-1.48, 0.64)	0.54	-.02	.00	-0.33 (-1.31, 0.65)	0.50	-.03	.00	0.03
Satisfaction with financial Support	1.57 (-0.39, 3.53)	1.00	.05	.00	1.67 (-0.45, 3.80)	1.08	.06	.00	0.17
Satisfaction with living arrangements	0.47 (-1.43, 2.37)	0.97	.02	.00	-0.30 (-2.07, 1.47)	0.90	-.01	.00	0.37
Step 2 – Psychological Variables	R^2_{change} .63 ***				R^2_{change} .46***				
PSS Total	0.91 (0.64, 1.17)	0.13	.27 ***	.04	0.74 (0.46, 1.02)	0.14	.23 ***	.04	0.01
ASS Total	-0.64 (-1.02, -0.27)	0.19	-.12 **	.01	-0.56 (-0.20, -0.92)	0.18	.12 **	.01	2.93 **
CSES Problem Focused	-0.04 (-0.15, 0.07)	0.05	-.04	.00	-0.16 (-0.28, -0.03)	0.06	-.15 *	.01	0.97
CSES Stop unpleasant	-0.12 (-0.25, -0.00)	0.06	-.11 *	.00	-0.80 (-0.22, 0.06)	0.07	-.06	.00	0.21
CSES Support	-0.11 (-0.30, 0.07)	0.09	-.06	.00	-0.29 (-0.49, -0.09)	0.10	-.14	.01	0.97
FMPS Concerns &Doubts	0.66 (0.44, 0.87)	0.11	.24 ***	.03	0.76 (0.52, 1.01)	0.13	.27 ***	.02	0.78
FMPS Parental Expectations & Criticism	0.10 (-0.16, 0.35)	0.13	.03	.00	-0.09 (-0.45, 0.27)	0.18	-.02	.00	0.55
FMPS Organization	-0.62 (-1.01, -0.23)	0.20	-.09 **	.01	0.23 (-0.32, 0.78)	0.28	.03	.00	1.68
FMPS Personal	-0.65 (-1.13, -0.18)	0.24	-.10 **	.01	-0.48 (-1.11, 0.15)	0.32	-.07	.00	0.30
UCSS Support	0.25 (0.10, 0.40)	0.08	.13**	.01	0.04 (-0.08, 0.17)	0.06	.03	.00	0.91
UCSS Connected-ness	-0.81 (-1.01, -0.61)	0.10	-.33 ***	.05	-0.61 (-0.80, -0.41)	0.10	-.25 ***	.05	0.03
Total Model R^2	R^2_{change} .69***				R^2_{change} .51***				

*Note. Gender coded as 1 = male, 2 = female, Employment coded as 1 = unemployed, 2 = some form of employment (part or full time). Fisher's z transformations were used to test the significance of the difference between semi-partial correlations for the Australian and Indian samples for individual predictor variables. All significance assessments withstand Bonferroni corrections and hence remain significant irrespective of adjustment apart from the two results significant at .05 as denoted by a single asterix. *p < .05. **p < .01.*

The three strongest predictors of USDI scores in both country groups were the same, though the ordering of importance differed slightly. Within the Australian student sample the UCSS-Connectedness was the strongest predictor and was negatively associated with USDI scores (β = -.33), followed by the Perceived Stress (β = .27) and the FMPS-Concern with Mistake and Doubts about Actions subscale (β = .24) both recording positive relationships as would be expected. For the Indian student sample it was the FMPS-Concern with Mistakes and Doubts about Actions subscale that was the strongest predictor (β = .27), followed by the UCSS-Connectedness (β = -.25), and then the Perceived Stress (β = .23). UCSS Support, Academic Stress, FMPS-Personal Standards, FMPS-Organisation, and CSES-Stopping Unpleasant Emotions and Thoughts emerged as the weaker predictors for the Australian students. Academic stress and CSES-Problem Focused seemed to be the weaker predictors for the Indian students.

Fisher's z transformation tests were conducted on the semi-partial correlations obtained in the regressions to test whether any predictors differed significantly in their predictive strength between the two sample groups. Among all the predictor variables entered into the regressions, only the Academic Stress yielded a significant result (z = 2.93, p = .003). Academic stress emerged as a relatively weak negative predictor of USDI scores within the Australian sample (β = -.12), while being related in equal strength but positively within the Indian sample (β = .12). This is not as a result of scoring occurring in opposite directions in the two surveys.

Discussion

The present cross-cultural study compared Australian and Indian university students' depressive experiences and factors associated with this emotional condition. The hypotheses were partially supported. Overall, the majority of students reported low levels of depressive symptoms. More Australian students than Indian students were categorised as experiencing severe levels of depressive symptoms. Contrary to the expectation, a similar combination of psychological factors predicted depression was found in the two samples. However, the importance of these variables varied for the students in the two countries.

In general, when compared with the standardisation sample used to interpret the USDI scores, the level of depressive symptoms was not high in the two groups (Romaniuk & Khawaja, 2013). Nearly half of the participants reported experiencing low level of depressive symptoms. The proportion of students falling in the moderate and severe categories was similar to previous findings (Ibrahim et al., 2013; Peltzer & Pengpid, 2015). It seems that participants manifested depression in the form of negative thinking, emotional distress, difficulty in engaging in academic tasks, and physical exhaustion (Bitsika et al., 2009; Mikolajczket al., 2008; Schofield, et al., 2016). Compared to the

Indian students, a higher proportion of Australian students was categorised as severely depressed. The result is consistent with a previous study, in which the Australian students in Brisbane emerged as more depressed than other nationalities (Khawaja et al., 2013). Nevertheless, this finding was not consistent with studies conducted on non-Western students, which reported their depression higher than students in the West (Gunay et al., 2011; Othieno et al., 2014; Shamsuddin et al., 2013). Depressive symptoms among Indian students were lower than the levels reported by recent studies in India (Nagendra et al., 2012; Sing et al., 2011). This difference may be due to differences in the measures used or the institutions targeted by the present or past studies. The Indian university from which the current study's sample was obtained is in a smaller city, while the other studies recruited students from larger Indian cities. Australian students were recruited from a large metropolitan city. It is possible that the stressors may be more severe for the Australian students or they may be lacking the protective factors, such as financial, familial and community support, available to the Indian students.

Hierarchical analyses highlight interesting links among a number of variables. Contrary to expectations, demographic variables were not associated with depressive symptoms. Participants' characteristics indicate that except for a minority, students were reasonably comfortable with financial and living arrangements. It is possible that Australian students planned their education carefully and were prepared well, while in India, it appears that due to the collectivistic culture students were supported by their parents. Inconsistent with previous findings (Cameron, 2010; Farrer et al., 2016), the younger age of students and year of study were not associated with depressive symptoms. Psychosocial factors such as coping, academic stress and perceived stress were correlated with each other and with depressive symptoms. Symptoms as measured by the USDI scale were correlated with perceived stress, academic stress, coping and self-efficacy, perfectionism, and university connectedness. Students in both countries experienced academic stress, interpreted their stressors negatively, criticised their own performance, engaged in maladaptive coping, and felt disconnected and unsupported by their universities. Overall, the student and university related factors were linked with their depressive symptoms. The outcome is consistent with previous studies, which indicated that university education was demanding, and students tend to cope poorly by setting unrelentingly high standards for themselves and perceiving their situation as averse (Abdollahi et al., 2018; Dunkley et al., 2012).

However, it is important to note that despite this commonality, subtle differences emerged. Within the Australian sample, academic stress, which measured the students' ability to comprehend lectures and to manage studies, was negatively correlated with depressive symptoms. It seemed that the scale measured a very narrow aspect of academic stress, such as poor concentration in lectures and inability to ask questions. It is possible that new pedagogical strategies of watching the recorded lectures or attending lectures in large auditoriums made these experiences irrelevant to the Australian students. In addition, various other aspects of academic stress, such as difficulty in achieving or maintaining high grades or getting into professional courses, were not measured by the scale. Further, in the case of Australian students, a perceived lack of connectedness with the university was the strongest contributor to depressive symptoms. Aligned with previous studies, a sense of not being valued on the campus and a feeling of not belonging to the university environment had the strongest link with depressive experiences of the Australian students (Cockshaw et al., 2013). Limited support at the university was also associated with depression in the Australian students (Levett-Jones et al., 2009). Further, inadequate adaptive perfectionism in the form of low personal standards and organisational skills, and a decrease in self-efficacy and coping through an inability to stop unpleasant thoughts, also contributed to their experiences of depression (Khawaja & Armstrong, 2005). Problem-focused coping and support-seeking tendencies were not contributing to depressive symptoms at all, as they are positive resources (Abdollahi et al., 2018; Besharat et al., 2014). Further, pressures and expectations of the parents were not important for the Australian students.

On the contrary, in the Indian students' sample, tendencies to engage in self-criticism and doubt emerged as the most important factors associated with their depressive symptoms (Julan, 2013; Zhang & Zhu, 2013). This appeared to be a maladaptive element of perfectionism, where the students expected high standards from themselves and then undermined their ability when these unrealistic expectations were not achieved (Mead & Hicks, 2010). A lack of connectedness with the university was seen to be associated with low mood (Cockshaw et al., 2013). Moreover, consistent with past findings (Abdollahi et al., 2018; Julal, 2013; Martin & Atkinson, 2020) low self-efficacy and coping in the form of limited problem focused coping were related to their depressive symptoms. Coping strategies such as the personal resources to stop negative thoughts and emotions, and seeking support, were not linked with depression in this sample. For the Indian students, academic stress in the form of limited capacity to understand the lectures, unable to ask questions or to organise one's study were associated with depressive symptoms (Agolla & Ongori, 2009; Barker et al., 2018;).

Implications

The findings support the notion that students across the world appear to have similar academic challenges and experiences of depressive symptoms. In line with the previous literature, they share the tendencies of maladaptive perfectionism, self-defeating and negative thinking, and poor self-efficacy and coping. Nevertheless, subtle differences also emerged, probably due to cultural differences (Khawaja et al., 2013). Thus, there is a need to assist students to cope with various challenges. Universities offer a range of academic and psycho-social supportive services (Julal, 2013), which aim to promote a sense of connectedness and also act as a protective factor for students to manage their stressors (Levett-Jones et al., 2009). However, the present findings indicate that students perceived themselves as disconnected from their institutions. This was a prominent issue for the Australian students, in spite of the support services available to them. It is possible that technological advances and the sheer size of universities are generating a perception among students that they are unfriendly and aloof places. However, in the case of Indian students, the lack of a sense of belongingness was probably due to an absence of counselling and support services in the university (Soliman, 1991). As a result of limited support service facilities, such as psychological care, academic support, and part-time work opportunities, it is easy for students to experience frustration, loneliness, stress, and depressive symptoms. The present findings emphasise the need for the institutions to promote realistic expectations, adaptive coping, self-efficacy and a sense of belonging among the students. Counselling and support services need to be introduced in India

and expanded in Australia. Workshops that enhance coping skills, self-efficacy, and positive perfectionism in the form of organisation and personal standards and assist students to manage maladaptive perfectionism associated with self-doubt and criticism would be helpful, along with other individual and group counselling programs.

Limitations & Future Directions

The present study is not free from limitations and the results should be interpreted with caution. First, the samples were limited to two universities and the outcome may not be generalisable to all Australian or Indian universities. Data should be collected from multiple universities in each country. Second, the participants were from a limited number of faculties and future investigations should recruit participants from a number of faculties, disciplines, year levels, and degrees. Third, responses were based on self-report measure and were subject to retrospective biases. Internal consistency of some scales was moderate for the Indian sample, which raises the question of their relevance to this population. Further, rigorous psychometric tests of these scales are warranted to determine their cross-cultural use. The items of the academic stress scale are limited to a few issues. A revision that involves adding items to encompass other academic challenges of the current times is required. Fourth, the data collection methods, which varied from on-line to completion of hard copies, may have introduced errors. Such variations should be avoided in future. The differences in coping styles and the link of culture with perfectionist thinking and perception of stress require further investigation in the students from different countries.

Conclusion

Finally, despite the limitations, the study is the first of its kind to directly compare Australian and Indian university students. Considering the globalisation of the world, many common challenges and depressive experiences were noted in the two countries. Interestingly, subtle differences also became apparent. The findings provide further directions to university authorities to foster the well-being of students in both countries.

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