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ORIGINAL PAPER

Psychological Distress in Iranian International Students at an Australian University

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Abstract This study investigated psychological distress in Iranian international students at UNSW Australia, and explored the psychosocial factors associated with high levels of distress. A total of 180 Iranian international students pursuing undergraduate and postgraduate degrees during 2012/2013 completed an email questionnaire containing socio-demographic items and five standardized and validated scales. Multivariable logistic regression was used to analyse the predictors of psychological distress. Compared to domestic and international students at two other Australian universities, a significantly smaller proportion of Iranian international students scored as distressed on the Kessler Psychological Distress Scale (K10). Greater levels of psychological distress were associated with being female, poorer physical health, less social support, less religious involvement and spirituality, and negative attitudes towards seeking professional psychological help. Findings from this growing group of international students can help inform culturally competent mental health promotion and service provision in their host countries.

Keyword Mental health · Psychological distress · International students · Iranian · Australia

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Background

Australia is among many western countries that host large numbers of international university students. Between 2007 and 2016, Australian higher education institutions collectively admitted an annual average of 97,200 students from overseas [1]. During this period, more than 7300 Iranian international students commenced study in Australian universities and Iranians were among the top five source countries for international students in the postgraduate sector [1, 2]. It is estimated that between 180,000 and 220,000 highly educated Iranians leave their country of birth annually, either as skilled migrants or as international students [3], which could be reflective of the country's troubled socio-political history in recent years [4].

International university students are frequently described in the literature as a vulnerable group who, beyond the stressors associated with migration, also have to deal with issues arising from tertiary study [5–7]. They may experience loneliness and isolation due to being deprived of their usual social networks and lack of familiarity with the cultural and linguistic environment [8, 9]. Financial issues associated with studying overseas may challenge some [6] but not others [10]. Physical health problems presenting during their studies, and health behaviours in response to those concerns, can result in varying degrees of psychological distress [7, 8]. As is the case generally [7, 11, 12], female students are more likely than males to experience distress, a finding attributed to different gender roles, social expectations and values, stressors and responses to stress [11, 13].

International students generally do not seek professional psychological help, relying instead on various self-help strategies to cope with distress including religious and spiritual practices [14]. Studies investigating the relationship

between levels of distress and views about counselling and professional mental health services have produced contradictory results; distressed students may express positive or negative attitudes towards these services [15, 16].

In addition to general adjustment and academic stressors, Iranian students have had to face financial and migration-related problems generated by sanctions and embargoes [17]. There is a dearth of published research about this particular group. The related literature comprises surveys on psychological wellbeing and mental health service utilization by Iranian migrants and refugees in western countries [18, 19].

This study investigated levels of psychological distress and the psychosocial factors that contribute to psychological distress among Iranian international students studying at the University of New South Wales (UNSW), which enrols the largest number of Iranian international students in Australia [20].

Method

Participants

A cross-sectional survey was undertaken of Iranian international students enrolled in different disciplines at UNSW during the second semester of 2012 or the first semester of 2013. Participation was based on being a currently-enrolled student and having Iranian citizenship. Students who had resided outside Iran for more than half their life and second-generation migrants were excluded.

Data Collection

Recruitment was conducted in two waves in 2012 and in 2013. The most comprehensive database of UNSW international students is managed by UNSW Student Development international (SDI). The SDI Administrator directly emailed invitations to all Iranian students registered on the database. In addition, advertisements in English and Persian were placed in the SDI e-newsletter, on the UNSW intranet and the UNSW Iranian Student Association (IRANSA) website and its Facebook group, and distributed at the IRANSA stall in Orientation Week 2013. Iranian international students who responded to the invitations and contacted the first author were provided with the survey questionnaire and consent form.

Measures

The self-administered email-based survey contained a sociodemographic questionnaire and five standardized psychosocial scales. The socio-demographic questionnaire

covered age, gender, migration status, length of residence in Iran and Australia, marital status, language commonly spoken in their living place, year and level of course undertaken, and mode of funding for study in Australia. The standardized psychosocial scales were the Kessler Psychological Distress Scale (K10), a 10-item scale that quantifies the frequency and severity of anxiety and depression symptoms experienced in past 4 weeks [21]; the World Health Organization Quality of Life Scale (WHOQOL—BREF) that measures quality of life on four dimensions: physical health, psychological health, social relationships and environment [22]; the Attitudes towards Seeking Professional Psychological Help Scale—Short Form (ATSPPHS—SF) that assesses attitudes toward seeking professional mental health services for psychological concerns [23]; the Multidimensional Scale for Perceived Social Support (MSPSS) that assesses overall level of perceived support in the participant's life and measures support from three sources: family, friends and significant others [24]; and the Duke Religion Index (DRI), a 5-item scale assessing overall religious involvement and spirituality along organisational, non-organisational and intrinsic dimensions of religiousness [25].

All independent variables were continuous, except gender, migration status, marital status and mode of funding for study in Australia, which were entered as categorical variables.

All five scales have been reported in previous research as having an acceptable level of reliability. However, to ensure their reliability in our study sample we computed the Cronbach's alpha for each of the scales using the two-way mixed effects model [26]. Completion of the survey took an average of 15–20 min.

Analysis

To analyze, interpret and compare the K10 data we employed two commonly applied categorization methods [27–29].

Method A has three distress categories: 'no or mild' (scores 10–15), 'moderate' (scores 16–29) and 'severe' (scores 30–50) [27]. It was used to compare levels of distress with those found in Stallman's survey of 6449 general university students (1001 international and 5448 domestic students) recruited from two Australian universities in Queensland [12]. That survey comprised 64.6% females and 76.9% undergraduates, with 67.4% aged between 18 and 24 years. The proportions with different distress levels in the two studies were compared against each other using a 3×2 χ^2 test for proportions. To remove the effect of gender as an influencing factor in the comparison, we used a Cochran–Mantel–Haenszel test and compared the results when the two samples were stratified by gender.

Method B has four distress categories: 'low' (scores 10–15), 'moderate' (scores 16–21), 'high' (scores 22–29) and 'very high' (scores 30–50) [28]. Based on a cut-off score of 22, we dichotomized the K10 scores into 'low to moderate' and 'high to very high'. A series of binary logistic regression analyses were used to explore the associations of psychological distress with the socio-demographic and psychometric variables.

A p value of 0.25 in the univariable regression analyses was taken as the cut-off point for inclusion of independent variables in the multivariable analyses [30]. Multivariable regression analysis was employed to explore the adjusted associations of the selected independent variables with the dependent variable. We used a stepwise backwards elimination method and set the level of significance at 0.05. Statistical analysis was conducted using SPSS version 20.0 (IBM Corp. 2011).

Results

Of the 325 Iranian international students studying at UNSW, 189 students filled out and returned the survey, giving a response rate of 58.2%. After nine exclusions (five did not meet the selection criterion, two returned their survey after the cut-off date, and two had data missing on more than one outcome measure), the data records of 180 participants were analyzed. Table 1 summarises the demographic characteristics of study participants. The sample was reflective of the Iranian student population in terms of gender composition (female versus male) [χ^2 (1) = 0.02, p = 0.90] and level of course undertaken (undergraduates versus postgraduates) [χ^2 (1) = 0.89, p = 0.35].

Results on the psychometric measures are presented in Table 2. All the scales and subscales showed acceptable levels of reliability in the study sample (Cronbach's alpha ranging from 0.68 for WHOQOL—BREF social relationships, which has only three items, to 0.91 for the K10 and 0.92 for the overall MSPSS).

Table 3 compares results for the K10 with those obtained in Stallman's survey of students at two universities in Queensland, Australia [12].

Compared to the reference population, our study sample had significantly lower levels of distress [χ^2 (2) = 18.17, p < 0.001]. This difference remained after stratifying for gender; for both males and females the Iranian international students had significantly lower levels of distress than students in the reference study [χ^2 (1) = 3.98, p = 0.04].

Based on the findings of univariable regression analyses (see Table 4), ten variables were entered in the multivariable regression model as potential predictors: gender, migration status, months of residence in Australia, mode of funding, three WHOQOL—BREF subscale scores (physical

Table 1 Socio-demographic characteristics of sample

Characteristics	Frequency	Percentage
Age (years)		
18–24	33	18.3
25–34	124	68.9
35–40	23	12.8
Total	180	100
Gender		
Male	109	60.6
Female	71	39.4
Total	180	100
Migration status		
Student visa	114	63.3
Permanent residency	33	18.3
Australian citizenships	28	15.6
Bridging visas	5	2.8
Total	180	100
Marital status		
Single	99	55.0
Married	73	40.6
De facto	7	3.8
Divorced	1	0.6
Total	180	100
Length of residence in Australia (years)		
<1	55	30.6
1–3	76	42.2
<3	49	27.2
Total	180	100
Level of course undertaken		
Postgraduate	150	83.3
Undergraduate	30	16.7
Total	180	100
Mode of funding the study in Australia		
Scholarships	72	40.0
Self-funding	71	39.4
Fee exemption or tuition waiver[a]	23	12.8
External/third party sponsorship	14	7.8
Total	180	100

[a]Includes non-scholarship students who were exempted from paying fees or whose tuitions were waived on the basis of their enrolment or migration conditions

health, social relationships and environment), MSPSS total score, ATSPPHS—SF score, and DRI score.

The final model (see Table 4) demonstrated that being female was associated with 'high to very high' psychological distress (OR 3.92, 95% CI 1.55–9.90, p = 0.004). Other significant predictors of clinically high-risk levels of distress were lower levels of physical health (OR 0.50, 95% CI 0.39–0.64, p < 0.001), perceived social support (OR 0.96, 95% CI 0.92–1.00, p = 0.016) and religious involvement

Table 2 Descriptive statistics and Cronbach's alpha reliability coefficient (95% CI for alpha) of the psychosocial scales

Scales/subscales	Frequency	Possible range (min to max)	Minimum	Maximum	Mean	Standard deviation	Cronbach's alpha	95% CI[a]
WHOQOL—BREF								
Physical health	180	4–20	8	20	14.6	2.4	0.73	0.69–0.79
Psychological health	180	4–20	8	20	14.2	2.4	0.82	0.77–0.86
Social relationships	180	4–20	4	20	13.7	3.1	0.68	0.59–0.75
Environment	180	4–20	9	19	14.1	2.0	0.74	0.67–0.79
K10	180	10–50	10	40	20.4	6.8	0.91	0.89–0.93
MSPSS	180	12–84	18	84	63.2	13.4	0.92	0.98–0.93
Social support from family	180	4–28	4	28	22.8	5.0	0.90	0.88–0.92
Social support from friends	180	4–28	5	28	18.9	5.2	0.90	0.88–0.93
Social support from significant others	180	4–28	4	28	21.4	6.1	0.91	0.89–0.93
DRI	180	5–27	5	27	15.4	6.2	0.86	0.83–0.89
ATSPPHS—SF	180	0–30	1	30	17.6	5.4	0.81	0.76–0.85

[a]95% confidence interval (CI) is estimated from the two-way mixed effects model

Table 3 Levels of psychological distress compared with reference population

Level of psychological distress	K10 score	Current sample		Reference population[a]		χ^2	Degree of freedom	P value
		Frequency	%	Frequency	%			
No or mild	10–15	49	27.2	1038	16.1	18.17	2	<0.001
Moderate	16–29	109	60.5	4173	64.7			
Severe	30–50	22	12.3	1238	19.2			
Total		180	100	6449	100			

[a]From Ref. [12]

and spirituality (OR 0.91, 95% CI 0.84–0.97, p = 0.006); and having negative attitudes towards seeking professional psychological help (OR 0.91, 95% CI 0.83–0.99, p = 0.022). The final model accounted for 56.9% of the total variance (Nagelkerke R^2 = 0.569).

Discussion

International students are recognized to be vulnerable to mental ill-health [5–7]. Given the socio-economic and political challenges in Iran in recent decades [4] and the resulting problems for Iranian students studying overseas [17], as well as the rising levels of prejudice and discrimination towards people coming from the Middle East in Australia [31], Iranian students might be expected to show higher levels of psychological distress than university students in general. That was not the case in our study which found that participants were less likely to be distressed than students at two other large Australian universities [12].

Two important differences in the samples that might have contributed to the difference in findings need to be considered. Firstly, there was a difference in gender composition. While Stallman's sample comprised mainly women, the current sample comprised mainly men. Adjusting for differences in the sex composition of the two samples indicated that this was not the explanation. Secondly, the current sample, which was dominated by postgraduates, was older. This could imply a relatively greater social and psychological maturity and more effective use of coping resources and strategies [32].

Another possible reason for fewer Iranian students reporting high levels of distress may lie in strong social support, as reflected in the high MSPSS scores. A high level of social connectedness, either with members of their own community or others, is considered a protective factor against mental health concerns among people from specific ethno-cultural or immigrant backgrounds [8, 9]. This may well apply here, given the collectivistic culture of Iranians [33] and their tendency to use of social support to cope with mental health concerns [34]. With augmented communication technologies and increment of international mobility in today's world, support from family at home does not necessarily cease on migration. As found in other

Table 4 Summary of univariable logistic regression analyses (left side of table) and multivariable logistic regression model (right side of table)

| | Univariable logistic regression analyses | | | | | Final multivariable logistic regression model | | | | |
	Odds ratio	95% CI Lower	95% CI Upper	Wald χ^2	P value	Odds ratio	95% CI Lower	95% CI Upper	Wald χ^2	P value
Gender										
Male (reference)	1.00	–	–	–	–	1.00	–	–	–	–
Female	1.82	0.97	3.42	3.42	0.06	3.92	1.55	9.90	8.31	0.004
Migration status										
Non-student visas (reference)	1.00	–	–	–	–	–	–	–	–	–
Student visa	1.50	0.77	2.91	1.43	0.23	–	–	–	–	–
Months of residence in Australia[a]	0.99	0.98	1.01	1.32	0.25	–	–	–	–	–
Mode of funding study in Australia				6.23	0.04	–	–	–	–	–
Other funding modes (Reference)	1.00	–	–	–	–					
Scholarships	1.12	0.45	2.79	0.06	0.81					
Self-funding	2.41	1.00	5.85	3.80	0.05					
Physical health[a]	0.48	0.39	0.60	41.62	<0.001	0.50	0.39	0.64	30.66	<0.001
Social relationships[a]	0.72	0.64	0.82	25.65	<0.001	–	–	–	–	–
Environment[a]	0.60	0.49	0.73	25.09	<0.001	–	–	–	–	–
Attitudes towards help-seeking[a]	0.95	0.89	1.01	3.10	0.08	0.91	0.83	0.99	5.24	0.02
Perceived social support[a]	0.93	0.90	0.96	25.03	<0.001	0.96	0.92	1.00	5.84	0.02
Religiosity and spirituality[a]	0.92	0.88	0.98	8.51	0.004	0.91	0.84	0.97	7.46	0.006

[a] Odds ratios per unit increase (i.e., each month of residence in Australia)

groups of international university students [7–9], Iranians who reported higher levels of social support were less likely to be distressed than their peers.

Consistent with previous studies, we found female students were more likely to experience psychological distress than males [11, 12]. Study participants grew up in a culture where there are differences in gender role expectations, stereotypes and socialization which are underpinned by rhetoric and policies in Iran [35]. Women are socialized to be submissive and timid, and to interact with men in a conservative manner in the public domain. The female dress code restricts mobility for Iranian women and their opportunities to pursue careers of their choice. Furthermore, women are expected to be virtuous and control their sexuality whereas such social restraint and control is not expected of men to the same extent [35, 36].

Student's physical health was the most significant predictor of distress in the multivariable model. The WHO-QOL subscale includes activities of daily living, dependence on medication, mobility, energy and fatigue, pain and discomfort, sleep and work capacity [22]. Poor health is disruptive to study and can adversely affect academic achievement [7].

That religious involvement and spirituality was among the predictors of psychological distress in this sample was unsurprising, given their significance in Iranians' holistic conceptualization and approach to health and wellbeing [37]. Students with higher levels of religious involvement and spirituality were less likely to be distressed, consistent with previous research [14]. Religiosity and spirituality can cushion the effects of stressors by boosting self-esteem and positively affecting adjustment and coping [14, 37]. While the survey did not ask about respondents' religion, we know from the first author's involvement in IRANSA that the great majority were Muslim.

Finally, we found that negative attitudes towards seeking professional psychological help were associated with more distress. According to Fischer and Farina [23], lower scores on the *ATSPPHS—SF* scale are reflective of low recognition of psychological need, a high perceived mental health stigma, less openness towards professional psychology, or low confidence in mental health professionals. Some or all of these reasons may prevent distressed Iranian students from approaching available services.

Strengths and Limitations

This study has both strengths and limitations. The culturally targeted advertising and use of consecutive recruitment waves helped to maximize the response rate, and the email survey was readily accepted by the target group. The sample was representative of the Iranian student population at UNSW with respect to gender composition and level

of course. The use of psychometric instruments that have been validated in relevant populations, including tertiary students and Iranians, and have demonstrated acceptable reliability is another strength. In any volunteer sample there is potential for self-selection and social desirability biases [38]. Many participants were recruited through IRANSA and social media, thus it is possible that the study attracted those students who were most connected and, perhaps, less distressed. The sample was recruited from only one Australian university and replication is needed in other tertiary settings in Australia and overseas.

Conclusion

Findings from this growing group of international students can help inform culturally competent mental health promotion and service provision. Dissemination of the results among communities of Iranian university students studying abroad can contribute to increased awareness of factors associated with psychological distress and may encourage them to seek timely psychological support. Student support associations such as IRANSA can promote mental health by creating a supportive environment and providing information on available services and referral pathways for those experiencing psychological distress. With greater knowledge of risk and protective factors affecting the mental health of Iranian international students, counsellors and mental health service providers will be better able to tailor their interventions.

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