

ACCULTURATIVE STRESS LEVEL AMONG INTERNATIONAL POSTGRADUATE STUDENTS OF A PUBLIC UNIVERSITY IN MALAYSIA

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ABSTRACT

Background: Acculturative stress among international students is a serious issue, resulting of linguistic and cultural differences in the host country. Levels of acculturative stress vary among different groups of international students who may encounter different problems. While international postgraduate students tend to take more stress from academic concerns, financial burdens as well as responsibility for family. Therefore, the aim of this study is to determine the acculturative stress level of international postgraduate students in Malaysia.

Materials and Methods: A cross-sectional study was conducted among the international postgraduate students in a public university in Malaysia, using multistage random sampling proportionate to the size from six faculties in the university. Data was collected using a pretested, self-administered questionnaire consisting of socio-demographic factors and Perceived Stress Scale (PSS) with 10 items. Data was analysed using IBM SPSS version 22.0. Descriptive analysis was used to determine the factors contributed to acculturative stress. P value of less than 0.05 was considered statistically significant.

Result: A total of 404 respondents were assessed in this study, with the response rate of 82.1%. The obtained data showed that the prevalence of moderate acculturative stress was 77.7%, with 5.2% high stress. Mean age of the respondents was 32 years, whereas the majority of respondents (75.7%) were male students. Respondents were mainly from Middle East (42.3%) and Africa (37.1%). There were 71.5% international students living without their spouses/ single/ alone and 28.5% accompanied by their family while studying at UPM.

Conclusion: The findings of the study reveal that over four fifths of international postgraduate students studied were in moderate to high acculturative stress level. Female students, Christian religion group, and those who came from Middle East had more possibilities to experience higher levels of stress compared to other groups of international students.

Keywords: Acculturative stress, international students, postgraduate students, stress level, Malaysia

1.0 Introduction

The development of science and technology has brought the world very close and has eased communication methods. It has also created sources for people to visit different countries for trade, commerce and educations. Recently, the international university students' influence has been known as the key contributor to current economic environment and educational ability of Malaysian industry. In 2007, Malaysia launched National Education Strategic Plan (NESP) for rising internationalization of Higher Education in the Country. This policy was developed to make Malaysia as an educational hub which may provide high quality education for Asian and other developing and underdeveloped countries of the world. Meanwhile, Malaysia is expected to draw RM60 billion or US\$20 billion with this policy and attract 200,000 international students by 2020 (Chu, Foong, Lai & Pang, 2015). Until 2016, there were 120,000 international students along with 151,000 school children in Malaysia. Over 30,000 international students pursued their postgraduate degrees. Thus they contributed RM7.9 billion in the country's economy. It is estimated that by 2020 it will increase to RM15.6 billion per annum (Malaysia's Higher Education, Mid-year Report, 2016).

As a public university of Malaysia, Universiti Putra Malaysia (UPM) has evolved and transformed into a universal institution of higher education which offers more than 250 academic fields in masters and doctorate degree and it continues to play a vital role in the academic excellence worldwide. The variety of programmers, as well as learning environment and sound facilities has attracted students from around 70 countries to pursue their postgraduate studies here. According to the figures from School of Graduate Students (SGS) in UPM, the population of international students in UPM has increased considerably since last decade; currently there are 4,686 international students enrolled at UPM. As international postgraduate students account for approximately 30% of total students, who come from different cultural backgrounds, languages, and ethnic groups. The change of international students from the environment of their inherent country to UPM may lead to a psychosomatic, academic and cultural difference to them. Due to the big change in academic policies, they may encounter different teaching techniques, different educational requirements, new nature of relationships among students and teachers and also new relationships between students, hence leading to acculturative stress.

Acculturative stress has become a prevalent and challengeable problem in the world, along with economic and educational globalization and increasing number of international students. When person from different social back-grounds meets each other, some conflicts could appear due to obviously different culture values, beliefs, personal behaviours, special languages, unique social institutions, and technologies constraint. According to Leong and Chou (2002) research, there was 15% to 25% chance for international students to experience psychological and psychiatric problems when facing new situation. Another study conducted on 551 international graduate students in America also showed that around 44% had emotional or correlated with stress which considerably exaggerated their health or academic performance in the last year (Hyun, Quinn, Madon, & Lustig, 2007). In addition, a reasonably higher level of acculturative stress was reported by 315 Chinese students pursuing their study in Australia (He, Lopez, & Leigh, 2012).

Several surveys about acculturative stress have been done among international students in Malaysia and the findings support the fact that international students have more chance to encounter higher stress upon arrival to Malaysia compared to host groups of students, as they

have to adjust to new environment and face something uncertain. For example, a study involving 233 Iranian international students studying in private and public universities in Malaysia showed that insufficient support and conflict with other students were determined stressors, and those who had ineffective interpersonal support for stress management reported higher stress levels (Malekian & Khan, 2017). A similar study conducted by Chuah and Singh (2016) in 4 different universities of Malaysia found that the international students who pursue their bachelor degrees usually preferred to get social support and other help from local national students. In addition, another study among international students who pursue postgraduate degree at Universiti Kebangsaan Malaysia (UKM) indicated that environment and approach were the top two causes of acculturative stress (Desa, Yusoff, & Kadir, 2012).

Therefore it is very important to further determine the acculturative stress level of international students, especially graduate students, and develops some strategies to facilitate international students; thereby, they may adopt the new environment in Malaysia and reduce acculturative stress level effectively.

2.0 Materials and Methods

A cross-sectional study was conducted on international postgraduate students enrolled in University Putra Malaysia (UPM). Sample size was calculated through Krejcie and Morgan formula (Krejcie & Morgan, 1970): $S = X^2 NP (1-P) / [d^2 (N-1) + X^2 P (1-P)]$. Where, S= required sample size, X^2 = table value of Chi-square for 1 degree of freedom at the desired confidence level (3.841), N= given population size, P= prevalence, d= degree of accuracy expressed as a proportion (0.05). This sample size formula is applied to a cross-sectional study with known population. Estimated on the basis of previous similar research in Malaysia (Ismail, Ashur, Jamil, Lee & Mustafa, 2016), 18.3% international postgraduate students in UKMMC had severe stress, hence, the prevalence of current study was assumed as 0.2, with maximum design effect of 2 and none response of 10%, the final sample size was 492.

The self-administered English version questionnaire was used to assess international students' acculturative stress level. It consisted of two sections, which were related to social-demographic factors, and acculturative stress level respectively. Acculturative stress level was assessed by Perceived Stress Scale (PSS) (Cohen, Kamarck & Mermelstein, 1994), which is a classic stress assessment instrument designed to measure individual stress levels. PSS consists of 10 items for the evaluation of feelings and thoughts. In each case, respondents were asked that usually they feel the certain situations. The responses are in a 5-point likert-type scale (0 = never, 1 = almost never, 2 = sometimes, 3= fairly often, 4= very often). After reversing responses, the PSS scores were obtained (for example: 0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) to the four positively stated items (item 4, 5, 7, & 8) and then all the scale items were summed. Discrete scores on PSS may vary from 0 to 40, the higher scores indicate high perceived stress. The cut-off of scores is split as scores ranging from 0-13 would be considered low stress, 14-26 would be considered moderate stress and 27-40 would be considered high perceived stress. Cohen, Kamarck and Mermelstein (1983) testified the Cronbach's α of the perceived stress scale (PSS) ranges from 0.84-0.86. Test-retest consistency for the PSS was 0.85. Correlation of PSS to the other procedures of similar symptoms ranges from 0.52-0.76 (Cohen et al., 1983).

A total of 492 questionnaires were distributed to international postgraduate students based on the inclusion criteria, while 28 respondents refused to participate in this survey and 31 were not available during data collection after two attempts. Only 433 respondents were willing to participate in this survey. Of this number, 29 were eliminated for those only filled in the social-demographic section and some of them skipped large portions of the survey or selected the same answers to almost all questions (i.e. "3" not sure). Ultimately, 404 cases were kept for data analysis.

The collected data was examined using IBM SPSS statistics version 22. The analysis involved 2 categories, which are descriptive and bivariate analysis. Acculturative stress level of the participants was compared on general demographic variables using descriptive statistics such as frequency, means, standard deviations, and range. To be specific, the mean of score was measured to indicate the degree of acculturative stress. Data distribution measures, namely the values of skewness and kurtosis for each continuous variable in international students were measured to assess the dependent and independent variables' assumption of normality. In bivariate analysis, independent sample T-test and One-way ANOVA was used to analyse variables among different groups, such as gender, marital status, religions, educational level and continent of origin.

3.0 Result

3.1 Response Rate

A total number of 404 international postgraduate students completed the questionnaires, out of 492 eligible respondents, giving a response rate of 82.1%.

3.2 Demographic Characteristics of Respondents

The respondents' age ranged from 19 years to 54 years, and the average age was about 32 years old. The number of males (75.7%) was threefold of females (24.3%). The proportion of unmarried students was 54.7% (single 52.0%, engaged 2.7%), which was slightly larger than the percent of married students in 45.3% (married with kids 36.9%, married without kids 8.4%). There were 219 (54.2%) respondents who were pursuing Masters' degree and 185 (45.8%) pursuing Ph.D. in UPM.

All respondents came from either Asia or Africa. The largest of international students group was from Asian countries (60.4%), specifically, 42.3% were from Middle East region i.e., Iraq, Iran, Yemen and Saudi Arabia. After that the other group was from African countries (37.1%), i.e., Nigeria, Somali and Libya. The major source of financial support of the international students studying at UPM is self-support (72.5%), while 21.8% international students were on fellowships mostly awarded by their respective countries' government whereas 4.7% international students were awarded by UPM fellowship or Malaysian government funding.

In terms of accompany status, 71.5% international students were living without their spouses/ single/ alone and 28.5% are accompanied by their family while studying at UPM. When

compared with the number of married samples (183), more than half of the respondents left husband / wife or children behind their native country and were alone here.

According to the results of distribution of respondents' duration of stay in Malaysia, the average duration for international postgraduate students in Malaysia was about 28 months whereas; the maximum duration was 200 months. There were 10.15% of respondents with more than 60 months of duration of stay, while some of them have settled down in Malaysia before pursuing higher education in UPM. More than one thirds (36.39%) of the respondents were living here for 13 to 36 months, which means one to two years was at the peak, then the second longest duration of stay was 3 to 12 months (27.72%).

Table 2 presents the distribution of respondents' religion group. Muslim students were the largest group with 315 (78.0%) of participants, the following religion group was Christian (12.6%). While other religions (Hindu and Buddhist) were the smallest group (4.2%) in response, and no religion students only accounted for 5.2%, who were mainly from China.

3.3 Acculturative Stress Level of Respondents

Table 1: Acculturative stress level of respondents (N=404)

Total Scoring	Stress Level	N (%)
0 to 13	Low stress	69 (17.1)
14 to 26	Moderate stress	314 (77.7)
27 to 40	High stress	21 (5.2)

Table 1 shows the prevalence of acculturative stress among international postgraduate students in UPM. The majority of respondents (77.7%) were in moderate stress, while 69 (17.1 %) were in low stress, and 21 (5.2 %) were having high level of stress. The mean of total scores on acculturative stress among respondents was 18.76 (SD=5.401, range = 36), and the mode of total scores was 20. According to the standard cut-off of acculturative stress level, respondents who perceived stress level with 14 to 26 total scores tend to have mental disorders, while stress level with 27 to 40 total scores indicated high risk of acculturation stress, who may need intervention such as psychological counselling and support.

3.4 Association between acculturative stress level with social-demographic factors

Independent sample T-tests were used to analyse the difference of acculturative stress level in gender, marital status educational status, source of funding and accompany status. One-way ANOVA was applied to analyse the difference of age group, continent of origin, religions and length of stay. The results in Table 2 proved that there was significant association between acculturative stress level with gender difference ($p=0.015$), continent of origin ($p<0.001$), religions ($p=0.043$), and duration of stay ($p=0.008$), respectively. While there was no significant difference among acculturative stress level with age ($p = 0.244$), marital status ($p=0.809$), educational status ($p=0.169$), source of funding ($p = 0.227$) and accompany status ($p=0.150$) on the base of significant level of 0.05.

Table 2: Association between acculturative stress level with social-demographic factors (N=404)

Variables	Frequency (%)	Mean	SD	p-value
Age				0.244
<25	75(18.6)	19.09	5.551	
26-30	98(24.3)	17.99	5.094	
31-35	108(26.7)	19.44	5.228	
>35	123(30.4)	18.57	5.663	
Gender				0.015
Male	306(75.7)	18.39	5.533	
Female	98(24.3)	19.91	4.812	
Marital status				0.809
Single	221(54.7)	18.82	5.579	
Married	183(45.3)	18.69	5.192	
Education status				0.169
Masters	219(54.2)	18.42	5.203	
Ph.D.	185(45.8)	19.16	5.614	
Continent of origin				<0.001
Africa	150(37.1)	17.17	6.201	
Middle East	171(42.3)	19.72	4.918	
Other Asia	83(20.5)	19.66	3.995	
Religions				0.043
Muslim	315(78.0)	18.80	5.441	
Christian	51(12.6)	17.39	6.073	
Others	17(4.2)	21.59	2.852	
(Hindu/Buddhist)				
None	21(5.2)	19.24	3.520	
Duration of stay				0.008
<3	39(9.65)	17.56	4.524	
3-12	112(27.72)	18.33	5.220	
13-36	147(36.39)	18.24	5.798	
37-60	65(16.09)	20.54	4.838	
>60	41(10.15)	20.12	5.358	
Source of funding				0.227
Self-support	293(72.5)	18.56	5.494	
Fellowship	111(27.5)	19.29	5.135	
Accompany status				0.150
None	289(71.5)	18.52	5.563	
Family	115(28.5)	19.37	4.939	

There was significant association in acculturative stress level between male and female ($p=0.015$). The acculturative stress level among female students ($M=19.91$, $SD=4.812$) was higher than that among male students ($M=18.39$, $SD=5.533$). One way ANOVA test for the difference of continent of origin in acculturative stress level was significant ($p<0.001$), subsequent post-hoc test (Scheffe's procedure) suggested that only mean scores between African with Middle East ($p<0.001$) and Other Asian ($p=0.001$) were significant different

(Table 3). Furthermore, the acculturative stress level among Middle East ($M=19.72$, $SD=4.918$) and other Asian students ($M=19.85$, $SD=3.967$) was higher than that among African students ($M=17.17$, $SD=6.201$). There was significant difference between religions with acculturative stress level ($p=0.043$), and following post-hoc test showed acculturative stress among other religion (Hindu / Buddhist) ($M=21.59$, $SD=2.852$) was significant higher than Muslim ($M=18.80$, $SD=5.441$, $p=0.007$) and Christian ($M=17.39$, $SD=6.073$, $p=0.002$), however, there is no significant difference between none religion with Muslim ($p=0.996$) or Christian ($p=0.511$). There was also significant difference between duration of stay in Malaysia with acculturative stress level ($p=0.008$), to be specific, foreign students who stayed in Malaysia for 37 to 60 months ($M=20.54$, $SD=4.838$) have higher stress than those who stayed here less than 3 months ($M=17.56$, $SD=4.524$, $P=0.022$) or 13-36 months ($M=18.24$, $SD=5.798$, $P=0.032$) (see Table 3).

Table 3: Summary results of post-hoc test among significant different variables

Variables	(I)	M(SD)	(J)	M(SD)	p-value
Continent of origin	Africa	17.17(6.201)	Middle East	19.72(4.918)	<0.001
			Other Asia	19.66(3.995)	0.003
Religion	Hindu/ Buddhist	21.59(2.852)	Muslim	18.80(5.441)	0.007
			Christian	17.39(6.073)	0.002
Duration of stay (month)	37-60	20.54(4.838)	<3	17.56(4.524)	0.022
			13-36	18.24(5.798)	0.032

4.0 Discussion

The prevalence of acculturative stress among UPM international postgraduate students in this survey was quite obvious. To be specific, 77.7% respondents were in moderate stress, followed with 17.1% in low stress, and 5.2 % were having high level of stress. The percent of participants who were in moderate stress level was higher compared to a similar study in Universiti Kebangsaan Malaysia Medical Centre (UKMMC) (Ismail, et al., 2016) that its overall prevalence of stress was 54.8%, while the percent of severe stress level (18.3%) was higher than that of current survey. This could be due to the different study instruments and sample size in each study.

The distribution of respondents was potential and stable factor, which caused different acculturative stress level compared with other similar surveys. The mean age of respondents was 32.3+6.9 years, with more than half of them (51%) aged between 26 and 35 years. Above two thirds (75.7%) were male, and more than half were unmarried. The findings were consistent with Ismail, et al.'s (2016) study at UKMMC that the mean age of 126 international postgraduate students was 35.2+5.52 years, 61.9% were male, but the difference was that almost two thirds (73%) were married students in UKMMC. Therefore, marital status might contribute to different results for acculturative stress level in two studies. Middle East students (Iraq, Iran, Yemen, Saudi Arabia and so on) constituted almost a half of the respondents (42.3%) and African students (Nigeria, Somali and Libya) were the second largest international group (37.1%) in UPM, while around one fourth (24%) were Nigerians

and one fifth (17.8%) were Iraqis. It was also similar to the result of UKMMC study that 52.4% were Arab students with 27.8% Iranians. Specially, other Asian countries (China, India, Bangladesh, Pakistan and Indonesia) represented only 18.1%. However, in developed host countries, South and East Asian students accounted for large percent. For example, the biggest group of international students in Germany was from Asia (42.6%; mainly from China, India, Pakistan and so on), while the smallest group was from Africa (Akhtar, 2012). Another study in America (Eustace, 2007) showed that the majority of international students were from the continent of Asia (67.7%), followed by Europe (21.8%), North America (10.1%) and Africa (4.4%). Due to the different distribution of continent of origins, the international students in Malaysia were most likely to perceive different source of acculturative stress compared to those in developed countries.

This study revealed that the female students perceived higher stress level than that of male students. The finding of this study was well agreement with the reports of Marshall, Allison, Nykamp and Lanke (2008), Shah, Hasan, Malik and Sreeramareddy (2010), Amr, EI Gilany and EI-Hawary (2008) from USA, Pakistan and Egypt respectively. It also revealed that the female international students in Denmark perceived a high level of stress with a smaller social support, larger discrimination, and larger endorsement of upright individualism (Ozer, 2015). According to Berry (1997), the possible reason is whether the comparative position of females in two cultures made a difference or not. If so, the women will have to solve the role clashes in order to face the stress.

Majority of married international students were alone here by leaving behind their spouse and children. While no statistical difference of acculturative stress level was found between married and single students in this study, which is consistent with other previous studies. For example, Zhang, Mandl and Wang (2010) conducted a survey on 139 Chinese international students in Germany and found that married students were more satisfied with the life than the singles, but there was no significant difference between two groups. However, the fact is that married students need to take more extra duties and obligations towards their family (Uraz, et al., 2013). And Yu, et al., (2014) also found that unmarried international students in China has significantly lower acculturative stress scores as compared to other students, because they had fewer concerns for family such as children or spouse, and more time to focus on academic work and social activities.

African students had lower acculturative stress level compared with the students from Middle East or other Asia. Usually, Asian students encounter more troubles from academic study and language barriers (Hamamura & Laird, 2014). This finding was in opposing to the research done among international students in China that the international students from Africa scored higher in all stressors than that of the students from other countries (Yu, et al., 2014). One possible reason explaining this difference is that there is smaller culture gap between Malaysia and African countries compared to that with China. Another study reported that African students perceived higher level of stress owing to discrimination from skin colour, race or belief (Poyrazli & Lopez, 2007). On the other hand, African and Asian students faced extra acculturative stress than that of European or Latin American students in developed host countries. For example, international students from European countries in Germany encountered less trouble in adjusting to the different lifestyles, because there are slighter changers in food, clothing, accommodation shopping, as well as same cultural background (Akhtar, 2012).

Buddhist/ Hindu international students also scored higher stress level than that of Christian and Muslim students as well as those who reported were not any religion on cultural competence. Since Malaysia is a multiple ethnic nation with most Muslim or Christian people, the people with a religion in small group may face problems in finding associates and areas for religious accomplishments, thus causing stress (Benson, et al., 2012). When comparing the no religion group with Muslim and Christian, it can be concluded that no religion students perceived higher level of acculturative stress. There is no denying fact that religious coping mechanism always plays a vital role during acculturative process, and it is necessary to expand how its use affects the mental and physical well-being of international population (Sanchez, et al., 2012). Furthermore, religion is quite helpful to offer the sense of identity and purpose, willing to provide social support for people who meet traumatic or emergency events (Pargament, 2007). On the other hand, culturally-safe spaces where acculturation issues are managed can be acquired from national religious services (Kamya, 2009). Therefore, religion is always regarded as practices designed to intervene an individual's relationship with God or the superior, a shared set of beliefs (Geppert, Bogenschutz & Miller, 2007) as well as the buffer of the effects of acculturative stress.

The average duration of stay for international postgraduate students in Malaysia was above 2 years. Current results indicated that the longer duration of stay, the higher level of acculturative stress among international postgraduate students. Especially, the students who stay here for 37 to 60 months had significant higher stress than those stay here less than 12 months. The main reason might be perceived discrimination and financial concerns that generally increased with time going on. However, other researchers argued that international students had more chance to go through tough stages of adaption to new culture and environments and adjusted well after longer stay in the host country (Ye, 2006). Another study involving 652 international students in Germany (Akhtar & Kröner-Herwig, 2015) also demonstrated that the acculturative stress level increases slowly from the early months of reaching in a new environment for 18 to 24th month and after that a gradual decrease will occur till end of 42th month. This phenomenon appears because students who stay longer in the host country were more likely to get through difficulty stages of adjustment in new environment. In addition, the finding in Trice's (2004) study showed that the longer foreign students have stayed in the U.S., the more frequently they socialized with domestic students.

5.0 Conclusion and recommendation

The current study explored the level of acculturative stress among international postgraduate students in Universiti Putra Malaysia. It also examined the association between acculturative stress levels with social-demographic factors. Over four fifths of international postgraduate students in UPM were in moderate to high acculturative stress level. Female students, Christian religion group, and those who came from Middle East had more possibilities to experience higher levels of stress compared to other groups of international students.

Facing the acculturative stress among international postgraduate students, correspondent preventive programs should be taken to reduce the prevalence of acculturative. To begin with, one approach involves policy modifications related to the cooperation between higher education industry with major universities in the national and institutional level. Then another approach is about health education campaign to encourage international students to ask for counselling service in a convenient and comfortable way. The third one is about behavioural

program that help vulnerable students improve self-esteem and coping skills to maintain their cultural identity in daily interpersonal situations and academic communication. The last but not least approach is to encourage domestic students as volunteers to help international students in campus life and socio-cultural adjustment, hence improving cross-cultural interaction between host and home countries.

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Declaration

The authors declare that they have no conflict of interest regarding publication of this article.

Author's contribution

Author 1: Information gathering, preparation and editing of manuscript

Author 2: Initiation of idea, review and final editing of manuscript

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