Stress Coping Level among Health Science Students in a Malaysian University

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Abstract

Introduction: Stress among students is a major concern in tertiary education. This study determined the predominance source of stress among health sciences students in Malaysia. Methodology: Medical Student Stressor Questionnaire (MSSQ) represents 40 events possible sources of stress. was distributed to 248 health science students. Result and discussion: The MSSQ showed satisfactory level of psychometric property in the health science students. The main source of stress was the academic related stressor Conclusion: Academic requirement is the major stressor for the students. This finding is consistent with the literature and appropriate measures should be sought to prevent its unwanted consequences.

Keywords: MSSQ; Allied health; Stress disorder ; Academic related domain.

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1.0 Introduction

Emotional disorder is defined as feeling of sadness and tiredness response through life events. Tertiary education expressed high concern about the mental health of students due the consideration of highly stressful period and stressful environment that can effect negatively on the psychological and physical well-being of university students. This will give profound impact of slumped academic performance and a huge number of psychological problems.

Few previous studies suggest that high rates of psychological morbidity among university students worldwide, especially depression and anxiety however neglected public health problem and holds major implications for campus health services and mental policy making.

2.0 Literature Review

Stressors of health students generally related to academic, intrapersonal and interpersonal, teaching and learning, social, drive and desire, and group activities domains (Yusoff, Rahim & Yaacob, 2010a, 2010b). Curriculum differences among health schools seem did not influence the overall pattern of stressors although frequency of some stressors may be significantly different (Kaufman, Day & Mensink, 1996 & 1998). Similar stressors may be perceived differently by different medical students, depending on their cultural background, personal traits, experience and coping skills (Yusoff et al., 2010a, 2010b).

One of the instruments used to identify stressors among health science students is the Medical Student Stressor Questionnaire (MSSQ). This instrument was adopted from Dr Muhammad Saiful Bahri Yusoff with his permission. The instrument validated on medical students across years of study (Yusoff et al., 2010a, 2010b) and across medical schools in Malaysia (Yusoff, 2011a).

Hence, by using MSSQ, this study aimed to examine the sources of stress among health science students in a government university in Malaysia by determining the major source of stress, level of stress and factors contributing to stress.

Objectives

- To determine the major source of stress experienced by health science the students.
- To determine the level of stress experienced by health science students.
- To determine the significant factors that contributed to emotional disorder among health science students.

3.0 Methodology

This study was ethically approved by the head of the Diploma of Pharmacy and Allied Health program and the students' affair division of the university.

A total of 248 health sciences were selected as study subjects during the first month after the start of the academic session of 2012/2013. Proper instructions were given before the administration of the questionnaires. The students were requested to respond to all the

statements and return back on the same day.

The MSSQ which represent 40 events that reported being possible sources of stress in health science students distributed to all students. They were requested to rate each event based on problems they encountered for the past few weeks by choosing from five responses. The responses were 'causing no stress', 'causing mild stress', 'causing moderate stress', 'causing high stress', or 'causing severe stress'. The MSSQ was scored by assigning a value of 0 (i.e. causing no stress) to 4 (i.e. causing severe stress) for the respective responses.

Demographic data which consists of age, gender, year of study and the study program were categorized. Other data were analyzed by Statistical Package for Social Sciences (SPSS) version 16.0 and Microsoft Excel 2010. The stressor among the students categorized into six main domains. The domains were Academic Related Stressor (ARS), Intrapersonal and Interpersonal Related Stressor (IRS), Teaching and Learning Stressor (TLRS), Social Related Stressor (SRS), Drive and Desire Related Stressor (DRS), and Group Activities Related Stressor (GARS). Cronbach's alpha values for each stressor domain were evaluated for their reliability. All data were presented in descriptive and tables form.

4.0 Results and Discussion

A total of 248 students responded completely. They were 164 (66.1%) from Faculty of Pharmacy, and 84 (33.9%) from Faculty of Health Science. Majority of the respondents were female (85.5%).

Table 1 shows the result of reliability analysis. Reliability analysis showed that all domains are reliable since all the Cronbach's Alpha are greater than 0.7 (Streiner & Norman, 2008). The domain which has the highest Cronbach's Alpha value is Intrapersonal and Interpersonal Related Stressor (IRS) (0.912) and Group Activities Related Stressor (GARS) (0.911). Overall Cronbach's Alpha value is 0.954 and is reliable. This result indicates that the MSSQ is a reliable tool to identify sources of stress among health sciences students.

Result showed that ARS has the highest score which is 2.27, indicating that it was perceived as causing the highest stress by the students (Table 2). The other stressor groups were perceived as causing moderate stress by the students. In descending rank order of other stressor groups, IRS mean score was 1.88, followed by GARS (1.78), TLRS (1.77), SRS (1.76) and DRS (1.57). Based on the results, it appeared that the major source of stress experienced by the students was related to academic requirements that were represented by ARS domain.

The top ten highest mean degree of stress perceived by the students was considered as the main factors contributing to the students' stress levels (Table 3). The highest mean degree of stress was led by "getting poor mark" with mean degree of stress of 2.96 which is near to severe stress level, followed by a "large amount of content to be leant" (2.95), "tests/examinations" (2.85), "having difficulty understanding the content" (2.72), "heavy workload" (2.39), "inappropriate assignments" (2.35), "facing illness or death of the patients" (2.33), "falling behind in reading schedule" (2.26), "quota system in examination" (2.11) and "learning context – full of competition" (2.11). Eight out of the top ten stressors belongs to

ARS domain. The lowest mean degree of stress was "working with computers" with mean degree 1.10 near to mild stress level. Overall, the mean stress level ranged between 1.00 to 3.00 indicating that the stress level among students ranged between moderate and high. This result demonstrated that stress was mostly contributed by the academic requirements as perceived by the students.

However if we analyse the data according to stress domain, under ARS domain getting poor mark still contributed to the highest stressor. In term of IRS domain, poor motivation to learn was the highest contributor to their stress. However this stress factor only contributed to mild to moderate stress. "Uncertainty of what is expected of me" was the factor that contributed to mild stress under TLRS domain. However lack of guidance from teacher and not enough feedback were not influencing their stress level very much. Maybe University students are independents who are capable of working on their own. "Drive and Desire Related Stressor (DRS)" such as "family responsibilities", "unwillingness to study medicine" and "parental wish for you to study medicine" did not contribute to stress level of the students. Under "Group Activities Related Stressor (GARS)" students did not have any problem to participation in class and presentation. They did not imposed by others to do well and feeling of incompetence.

The overall Cronbach's alpha value of the MSSQ was 0.954 while the Cronbach's alpha values of the stressor groups ranged from 0.734 to 0.912 (Table 1). This analysis suggested that the items of MSSQ were reliable as having high internal consistency which is more than 0.7 (Downing SM, 2004; Streiner & Norman, 2008) and consistent with the literature (Yusoff et al., 2010; Yusoff, 2011a, 2011b) Therefore, these findings provided evidence to support that the MSSQ is a reliable instrument that could be used to identify stressors among the students across health science schools.

Our study found that the only stressor domain that scored more than 2.00 was ARS (Table 2), indicating it caused high stress to the students. Whereas, the other five domains; IRS (1.88), GARS (1.78), TLRS (1.77), SRS (1.76) and DRS (1.57) were causing moderate stress to the students. So it clearly suggested that academic requirements contributed substantially to stress level of the students. One important lesson leant is that the institution should revisit its academic requirement structure and perhaps could reorganize the requirement to ensure that it would not introduce unnecessary pressure to the students.

The top ten stressors (i.e. based on mean degree of stress perceived by the students) for the students were mostly related to academic matters (Table 3). They were eight stressors related to the academic which the highest stressor is "getting poor marks" (2.96) and the lowest is "learning context – full of competition" (2.07). Likewise, two items were related teaching and learning (i.e. "Inappropriate assignments"), and societal (i.e. "facing illness or death of the patients") matters. These findings are consistent with the literature found that academic requirements substantially contributed to students' stress level (Aktekin et al., 2001; Saipanish, 2003; Dyrbye et al., 2005; Yusoff et al., 2010). Obviously, any student would be highly distressed when they obtained poor marks in examinations, having a large amount of contents to be learnt within a limited time, having to go through tests and examinations, having difficulty in understanding the content of the subjects and heavy workload. As a result this condition will divert their focus on the study, subsequently would lead to poor academic

achievement. It is worthy to highlight that the overall pattern of stressors found in this would be similar to other educational settings (i.e., most of the top ten stressors related to academic matters). However, the severity level of stress caused by some stressors may be significantly different from studies done elsewhere (Kaufman, Day, Mensink, 1996 & 1998).

Table 1: The Cronbach's alpha value for each stressor domain.

Stressor Domain	Cronbach's Alpha Value
Academic Related Stressor (ARS)	0.837
Intrapersonal and Interpersonal Related Stressor (IRS)	0.912
Teaching and Learning Related Stressor (TLRS)	0.892
Social Related Stressor (SRS)	0.734
Drive and Desire Related Stressor (DRS)	0.765
Group Activities Related Stressor (GARS)	0.911

Reliability analysis; Cronbach's Alpha Coefficient, overall Cronbach's alpha = 0.954
(Source: Author)

Table 2: Mean Domain Score.

Stressor Domain	Mild Stress	Moderate Stress	High Stress	Severe Stress
Academic Related Stressor (ARS)			2.27	
Intrapersonal and Interpersonal Related Stressor (IRS)		1.88		
Teaching and Learning Related Stressor (TLRS)		1.77		
Social Related Stressor (SRS)		1.76		
Drive and Desire Related Stressor (DRS)		1.57		
Group Activities Related Stressor (GARS)		1.78		

Score interpretation: 0.00 – 1.00 = Mild; 1.01 – 2.00 = Moderate; 2.01 – 3.00 = High; 3.01 – 4.00 = Severe.
(Source: Author)

In general, level of stress experienced by the students ranged from moderate to high. It appears that student perceived "working with computers" as causing mild stress to them (Table 3). One of explanations is due to early exposure to using technology for learning that eases them to work with computer. This finding is consistent with a previous study (Yusoff et al., 2010). Interestingly, this study found that the students perceived "getting poor marks" caused the highest stress to them. Perhaps, this is due to their desire to get good marks because the good result will provide them with more confidence upon graduation that lead to

greater satisfaction with their future career. Therefore, they really put a lot of effort and time to study in order to perform well in the examinations. One lesson learnt is that assessment drive students learning, therefore if the institution could design an assessment system in a way that could induce 'favourable stress' and avoid 'unnecessary stress' that will create healthy and friendly environment to the students' psychological wellbeing during the training (Yusoff et al., 2012). Perhaps, more focus should be put on designing an effective intervention program that trains students to develop positive coping ability and mindset towards the 'challenges' (i.e. sources of pressure), so that it will improve their psychological wellbeing (Shapiro, Shapiro, & Schwartz, 2000; Yusoff & Esa, 2012).

First, health sciences schools should give extra attention to pharmacy and allied health sciences students who possess high level of stress because they might need psychological support to adjust with the demanding environment of medical training. Second, introducing a stress management intervention early in medical training might help students who are susceptible to negative emotion to adjust and cope effectively with the stressful environment. Last, providing continuous support through mentoring to medical students' who possess high level of neurotic traits might help prevent psychological distress. Perhaps individuals with high levels of neuroticism are less suitable for jobs that require high psychological endurance, which are stress-inducing. Arguably, this particular trait should therefore be considered as a criterion to be screened for during the student admission process (Yusoff et al., 2013).

Also there was a conflicting report on female students during menstruation which can contribute to psychological stress should also need to be considered during study period. However study conducted on 254 undergraduate medical students stated that there is no clear association between psychological stress and menstrual abnormality (Mini Sood et al., 2013).

Table 3: Stressors (identified by the Medical Student Stressor Questionnaire) ranked by mean degree of stress perceived by the students.

Rank	Items	*Degree of stress Mean (SD)
Causing moderates to high stress		
1	Getting poor marks	2.96 (0.89)
2	Large amount of content to be learnt	2.95 (0.92)
3	Tests/Examinations	2.85 (0.81)
4	Having difficulty understanding the content	2.72 (0.90)
5	Heavy workload	2.39 (1.20)
6	Inappropriate assignments	2.35 (1.08)
7	Facing illness or death of the patients	2.33 (1.23)
8	Falling behind in reading schedule	2.26 (0.98)
9	Quota system in examinations	2.11 (0.99)
10	Learning context – full of competition	2.07 (1.15)
Causing mild to moderate stress		
11	Frequent interruption of my work by others	2.00 (1.06)
12	Unable to answer questions from patients	1.98 (1.08)
13	Unable to answer questions from the teachers	1.94 (1.06)
14	Poor motivation to learn	1.94 (1.14)
15	Lack of time to review what have been learnt	1.91 (1.11)

16	Need to do well (self-expectation)	1.91 (1.11)
17	Conflicts with other students	1.91 (1.09)
18	Verbal or physical abuse by personnel (s)	1.91 (1.13)
19	Participation in class discussion	1.90 (1.10)
20	Participation in class presentation	1.89 (0.96)
21	Need to do well (imposed by others)	1.88 (1.21)
22	Verbal or physical abuse by other student (s)	1.86 (1.19)
23	Verbal or physical abuse by teacher (s)	1.86 (1.16)
24	Conflict with teacher (s)	1.85 (1.15)
25	Conflict with personnel (s)	1.84 (1.13)
26	Not enough medical skill practice	1.82 (1.11)
27	Uncertainty of what is expected of me	1.81 (1.12)
28	Not enough study material	1.74 (1.10)
29	Lack of recognition for work done	1.70 (1.05)
30	Unjustified grading process	1.66 (1.03)
31	Teacher – lack of teaching skills	1.62 (1.24)
32	Lack of guidance from teacher	1.62 (1.03)
33	Family responsibilities	1.62 (1.19)
34	Talking to patients about personal problems	1.61 (1.08)
35	Unwillingness to study medicine	1.61 (1.20)
36	Not enough feedback from teacher (s)	1.53 (0.96)
37	Lack of time for family and friends	1.51 (1.00)
38	Parental wish for you to study medicine	1.48 (1.27)
39	Feeling of incompetence	1.46 (1.23)
40	Working with computers	1.10 (0.94)

*Degree of stress classification: 0 – 1.00 is 'causing nil to mild stress', 1.01 – 2.00 is 'causing mild to moderate stress', 2.01 – 3.00 is 'causing moderate to high stress' and 3.01 – 4.00 is 'causing high to severe stress'.

(Source: Author)

5.0 Conclusion

This study found that the health sciences students experienced moderate to high level of stress. More emphasize should be given on designing assessment that are friendly to psychological health of the students as well as developing effective intervention to improve the student psychological wellbeing. This will ensure that our curriculum and activities set for our sciences especially health sciences students are in the range of their coping limit. Health Sciences curriculum should be developed with the consideration all domains contributed to stress especially those with academic related stressor. They are the most important performers in the process of change, because beside the position they adopt towards change, of a great importance are the beliefs, attitudes, ideologies and their behavior toward accepting changes.

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