Perceived Stress Level Assessment among Final Year Pharmacy Students during Pharmacy Based Clerkship.

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Research Article

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Abstract

Objectives To assesses stress level among final year pharmacy students during two different clerkships and determine the most common factors triggering stress during the clerkship.

Methods A time series cross sectional survey was conducted using Perceived Stress Scale survey instruments.

Results More than 50% of the students were Chinese female. Total score of perceived stress level during satellite clerkship was significantly increased on day five of clerkship. More than half of the students (> 50%) preferred to spend time with "family and friends" as their best strategies in coping stress. Stress level was most significantly higher in satellite clerkship compared to TDM clerkship with examination and assignments as the most common stress triggers among the students.

Conclusion

Perceived stress level between two pharmacy based clerkships were different. Examination and assignments were the most common stress triggers among the students.

Introduction

In education, stress becomes one of the major issues that may affect the performance of students. Stress level that students experience in each semester might be predictable due to several factors like academic commitments, financial pressures and lack of time management skills. [1]

A review of the available literature showed that almost all studies done assessing on stress mostly involving medical, nursing and dental [2-6]. In contrast, only a few studies conducted in pharmacy students [7-8] yet most of the samples were specifically leading to the PharmD students [9, 10]. The data of stress level among pharmacy undergraduate students is still lacking. This study highlighted the perceived stress level and the most common stressor among undergraduate students specifically during their final year clerkship.

Undergraduate students in pharmacy, specifically in Universiti Sains Malaysia are required to undergo seven weeks of pharmacy based clerkship. These early experiences prepare the student for higher level of experiential learning during the final year of a pharmacy curriculum. The clerkship evaluation contributes almost half of the final marks and the students need to perform well during the clerkship.

In Practice Experience Programs Standards and Guidelines was classifying stress as one of the personal problem among students. [11] Stress has been showed as a factor that may negatively influence student's performance. [8] The standard was including resolution of student problem. A good practice experience programs or clerkship must have a process to resolve situations that may interfere with the ability of the student to perform adequately in an experiential rotation. [11]

In conjunction, students perceived stress level need to be assessed, so that the factors may influence the students to get stress during the clerkship could be evaluated. The objectives of this study are (1) to assess perceived stress level of the students during two types of pharmacy clerkship; satellite clerkship and therapeutic drug monitoring (TDM) clerkship, (2) to determine the most common factors triggering stress during the clerkships and (3) to explore the strategies responded by students that might relieve their stress.

Methodology

A time series cross sectional survey was conducted among final year pharmacy students from University Sains Malaysia. All sixty seven of the students were involved in this study. The data was collected during seven weeks of satellite pharmacy and therapeutic drug monitoring (TDM) clerkship in University Sains Malaysia Hospital (HUSM) in September to October 2010. The students were divided into seven groups. Five of the groups contain ten students for each group whereas another three groups had nine members of students per group. Both of the clerkship was scheduled for five days per week.

Perceived Stress Scale survey instruments was given to both groups on the first day and day five (last day) of the clerkship. On the first day, the students were required to answer the questionnaire before clerkship activity started within 5 to 10 minutes. Then the questionnaires collected by responsible lecturer. Similarly the questionnaires was given to the students on day five prior to the end of the both clerkship for that particular week.

The questionnaire was divided into three parts. The first part (Part A) contains 13 questions on socio demographic data of the pharmacy students whereas in the second part (Part B), there was an instrument that had been used to measure stress level. In the 1988, Cohen et.al was designed Perceived Stress Scale (PSS) which include 14questions. This self-reported measurement requires samples to give answer that ranked using 5-point Likert scale with never (0) to very often (4.) Every question assesses stressful experiences and response to stress over the previous 4 weeks. Questions related to negative events or responses are scored in reverse manner. Total scores range from 0 to 56, with level of perceived stress increase with increase total scores [25]. Besides, other data on stress triggers, strategies applied in coping stress and suggestions to manage stress were also included in the third part of questionnaires.

Data analyses were performed by using SPSS version 18. The Wilcoxon test was used to measure significance of score difference for stress level between both clerkship; satellite and TDM. Differences in mean PSS scores on the last day of clerkships, according to current cumulative grade point average (CGPA), exercise habits, and extent of daily commute were examined for significance using Kruskal-Wallis test. Mann-Whitney test was used to measure the significant among gender.

Results

All sixty seven final year pharmacy students were completed this survey within the period of seven weeks. More than 50% of the students were Chinese female. Of those students commute from residence to school daily 64(95.5%) reported commuted average 1-2 times per day. Forty-eight (71.6%) reported did not practice regular exercise during the seven weeks period; however none of the students was smoking. Complete socio-demographic characteristics of the students are included in table 1.

The mean PSS of the entire students on the first and last day for both clerkship are presented in table 2.There was a significant difference in stress level between that two days in satellite clerkship (p,0.01).However, there was no significant difference in students stress level between satellite and TDM clerkship as well as among gender. There were no significant differences in mean PSS scores (last day of clerkships) based on current cumulative grade point average (CGPA), exercise habits, and extent of daily commute.

Figure 1 shows the most common stressor among pharmacy students during their clerkship life. Examinations and tests had the highest percentage (73.1%) as a stress trigger during their TDM clerkship. Unlike TDM clerkship, assignments and assessments were the highest stressor (92.4%) among students in satellite clerkship. Financial concern was not a big problem to most of the students whereby only less than 30% considered it as their stress trigger. In other hand, most of the students (> 50%) preferred to spend more time with family and friends as a strategy to alleviate stress during

their clerkship. Other results for strategies in reducing stress presented in table 3. More than 90% of the students suggested improving and expanding wireless internet, and providing computer labs with sufficient computers and printers in faculty.

Table 1: Socio demographic characteristics of Final Year Pharmacy
students participating in a survey stress level assessment during
satellite and TDM clerkship.

	N=67
Variables	No (%)
Sex	
Male	15(22.4)
Female	52(77.6)
Total	67(100)
Race	
Malay	14(20.9)
Chinese	52(77.6)
Eurasian	1(1.5)
Total	67(100)
Residence	
Nurani	13(19.4)
Ten-Ten	48(71.6)
Outside USM	6(9.0)
Total	67(100)
CGPA	
2.50-3.00	15(31.9)
3.01-3.50	28(59.6)
3.51-4.00	4(8.5)
missing	20 (29.9)
Total	67(100)
Average Daily Commute from Residence	
to School	
1 – 2 times/day	64(95.5)
3 – 4 times/day	3(4.5)
More than 4 times/day	0
Total	67 (100)
Availability of Transport	
No	59(88.1)
Yes	8(11.9)
Total	67(100)
Self Health Problem	
No	63(94)
Yes	4(6.0)
Total	67(100)
Smoking Status	
no	67 (100)
Yes	0(0)
Total	67(100)
Regular exercise	
No	48(71.6)
1 – 10 minutes/day	6(9.0)
11 – 20 minutes/day	5(7.5)
21 – 30 minutes/day	5(7.5)
31 – 40 minutes/day	1(1.5)
>40 minutes	2(3.0)
Total	67(100)

Discussion:

Generally stress is commonly related to college students [9]. Furthermore those entering the health care profession, like nursing and pharmacy, might have some additional susceptibility to stress compared with the general population [12]. During clerkship the students are required to complete several activities in certain period of time. The assessment or evaluations are based on their performance, presentation and attitude during clerkship. The given hands on need to be done despite it are first time to student dealing with those tasks.



		Day 1 (N=65)	Day 5 (N=65)	Wilcox an Test	Significance
Satellite	Mean	26.63	29.95	3.93	0.01
Pharmacy	S.D	7.16	6.43		
Therapeut ic Drug	Mean	26.39	25.60	-1.08	ns
monitorin g (TDM)	S.D	6.89	5.51		
Significant p< .05					

 Table 2: Comparison of perceived stress level during Satellite

 clerkship and TDM clerkship

In this study, stress instrument chosen was PSS as it was documented well in reliability and validity. [9] The perceived stress level was not significant difference among gender, CGPA results and average of time they commute from residence to school.

Figure 1



The findings showed the mean for stress level total score of students was significant higher in satellite pharmacy clerkship (p, 0.01) but not significant in TDM clerkship. The activities in both clerkships were different. Perceived stress level is higher with the increase of activities or assignment in the clerkship as the time is constrained to complete it. Lack of time management might put the students on stress. Well control of time significantly helps the students improve the performance with greater work and reduced job-induced and somatic tensions. [13] In fact, assignment and assessment were highly reported by the students as the main stressor during satellite clerkship. Both assignment and presentation took 70% of the total evaluation and became major component in assessing students during satellite clerkship.

The students were most stressful towards examinations and tests in TDM clerkship. In TDM clerkship the students are needed to have two types of test; writing test and analytical test in order to evaluate students on application the basic concepts.

Both tests resemble 60% of the total assessment. There were quite a number of studies done revealed that the test or exam was the most stress triggers among students including undergraduate and postgraduate specifically medical students. [14-22]

Most of the students (> 50%) probably need more time to spend with family and friends in weekend as a strategy to alleviate their stress after their clerkship. Sleeping or napping was also favoured by student as strategies to reduce stress.

From this study, there were several suggestions highly recommended by the students in order to alleviate stress. Pharmacy administration may improve and expand wireless internet, and provide computer labs with sufficient computers and printers in faculty. Stress level can also be alleviated by improving accommodation and transportation means in the university.

The authors recommend the administration to organize a wellness oriented stress management program in order to help students alleviate their stress. [15] This initiative is crucial in managing the increased stress due to academic demand. Students also should be given motivation to increase their self esteem during clerkship so the stress can be reduced. [23]

Table 3: Students responds towards most common strateg	ies
in coping stress during clerkship	

	Satellite (%)	TDM (%)
	(N:69)	(N:69)
Exercise (running or	54.5	55.2
working-out)		
Time with family and	89.4	92.5
friends		
Napping/Sleeping	84.8	88.1
Watching TV	68.2	68.7
Drinking Alcohol	6.1	0

Limitation

The limitation of this study was in term of sample size which the cohort was small. The survey was done only in one practice site and not a multicenter. The perceived stress scale evaluation was done for short period of time; that was day one and day five of the clerkship.

Conclusion

Stress level during satellite clerkship was high among final year pharmacy students. Assignment and examination were the most stress triggers reported by students during satellite and TDM clerkship respectively. Results from this study may assist the undergraduate coordinator identify potential sources of stress during clerkship. In fact stress awareness and reduction programs can be developed in order to help students deal with the stressor and improve their performance.

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AUTHORS' CONTRIBUTIONS

Athors contributed equally to all aspects of the study.

PEER REVIEW

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests