Research Article

Prevalence of Perceived Stress among Pharmacy Students in Pakistan

Riffat Yasmin*[1], Sidra Sohail Asim[2], Huma Ali[3], Tehseen Quds[1], Farya Zafar[3]
[1]Dow College of Pharmacy, Dow University of Health Sciences, Karachi, Pakistan.
[2]Faculty of Pharmacy, Hamdard University, Karachi, Pakistan.
[3]Ziauddin Faculty of Pharmacy, Ziauddin University, Karachi, Pakistan.
***Corresponding author's E-mail:** yasmin.pharmacist@gmail.com

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ABSTRACT

The study was conducted with the aim of determining the level of perceived stress, and common stressors among pharmacy undergraduates. This cross sectional study was conducted from Feb-Sep 2013. The questionnaire administered for this study was pretested, comprising of socio-demographic data of students and 14 questions. Total 421 students of private and government sector universities provided the completely filled questionnaire. Students' responses were divided into different groups for data analysis. Descriptive statistics was applied on the sample characteristics and frequencies were calculated. Independent sample t-test (with p values <0.05) was used to observe the significant association of perceived stress with demographics of students. It was reported that 248(58.9%) respondents having high level of stress from the total population. Cut off PSS score in total population was 31.11. Students from different educational level stated that subject assignment (36.1%) is a major stressor. Talking to family and friends (36.2%) was evaluated as best strategy to cope with stress. In this study students participated enthusiastically and provided some suggestions. It was observed that female students are more stressed than male students. Introducing stress management techniques and mentoring system could be useful methods to help students to solve their problems and release stress.

Keywords: Perceived stress, stressors, pharmacy students, Pakistan.

INTRODUCTION

Stress is one of the psychological disorders which has high prevalence and re-occurrence nature. It is has been reported as a common cause of psychological disturbance among all age groups. Vitaliano[1] stated that perceived medical stress is also linked to current mental distress. Many studies have been reported indicating the prevalence of stress among professional college and university students.[2-4] In these studies indicated common stressors among students e.g. stress related to academia, environment, financial problems.[5,6] Because of stressful life, students have negative impact on their personal relationship with family and friends and in academic life class room performance, cognitive and learning activities are negatively affected.[7-9]

Professional career demands a great deal of hard work, persistency, and in everyday life it brings new challenges for students. Most of the youngsters do not understand these demands of professional life and affected by academic stress and anxiety.[10] Most of the students feel stressed during specific time periods such as near final terms, mid terms, in higher classes and during clinical round practices. Factors which may increase the stress level in students include time pressure, personal problems, financial problems, environmental conditions, poor interpersonal relations with family and friends etc. Class competition is another factor which can affect the learning process and generate stressful conditions among students of higher classes.[11] Many tools have been devised to measure stress among students[12-14] and studies have conducted to evaluate the perceived stress among pharmacy students.[6,15,16]

In Pakistan prevalence of stress and anxiety among medical, and nursing students[17-19] have been evaluated. But no work has yet been reported covering the perceived stress level among Pharmacy undergraduates. Therefore the aim of this study was to determine the level of perceived stress and common sources of stress among pharmacy students. This is a cross sectional study and will focused on the junior and senior pharmacy undergraduates. In this study we will also explore strategies adopted by pharmacy students to cope stress.

MATERIALS AND METHODS

This cross sectional study was conducted during Feb-Sep 2013 to measure the level of perceived stress among pharmacy undergraduates. Participants of this study belong to one government sector and two private sector universities of Karachi. Target population includes, students of 1st (junior students) and 5th year (senior students) Pharm-D only. A verbal informed consent was taken from the participants with the assurance of maintaining the confidentiality of collected information from individuals. Questionnaire comprised of two parts, in first part demographic characteristics of the students were collected. In second part Perceived stress scale (PSS) was used containing 14 questions to assess the perceived stress. Students were instructed to respond each question in this scale about their feelings and thoughts during the last month. Pretested questionnaire was used to assess the lack of control (negative characteristic) and ability to deal effectively with difficult condition (positive characteristic) among participants. Response of each

negative characteristic was rated as *0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often scale* .This scale was reversed to analyze positive items (items 4, 5, 7, and 8) and summing the scores across all 14 items. Total score range was 0-56. There is no cut off for stress score, generally higher score on PSS indicates high stress and low score indicates less stress level among students. In this study sources of stress and their coping strategies were determined. Data was analyzed through SPSS version 20.0.

RESULTS

Pre-tested questionnaire on PSS was administered to 510 pharmacy undergraduates of Karachi. Four hundred and twenty one students returned the completely filled questionnaire therefore the response was 82.54%. For evaluating the perceived stress level among participants, t-test was used to observe the difference in their responses. Table 1, contains the socio-demographic details of the participants.

Table 1: Demographic information of the study population

S.No	Characteristics	Number (Percentages)
1	**Gender**	
	Male	113 (26.8)
	Female	308 (73.2)
2	**Educational status**	
	Junior students	166 (39.4)
	Senior students	255 (60.6)
3	**Age**	
	< 20 Years	198 (47.0)
	≥ 20 years	223 (53)
4	**Regular Exercise**	
	Yes	121 (28.7)
	No	300 (71.3)
5	**Social activities**	
	Yes	248 (58.9)
	No	173 (41.1)
6	**Regular meal**	
	Yes	295 (70.1)
	No	126 (29.9)
7	**Sleeping hours**	
	< 5hours	218 (51.8)
	5-8hours	190 (45.1)
	>8hours	13 (3.1)

113 (26.8%) male students and 308 (73.2%) female students participated in this study, 47% participants of this study were less than 20 years old and 53% were more than 20 years old. Among these students only 21 (5.0%) students are employed in part time jobs to manage their academic expenses as they have limited financial resources. 400 (95%) students focus on their studies because of good socio-economic conditions of their families. A large number of students live with their family and only 51 (12.11%) students live either with their relatives, in hostel or alone. 248 (58.9%) students stated they participate in social activities, whereas 173 (41.1%) students do not found enough time to participate in such activities.

In this study mean score for positive characteristic items was 10.79 and 20.33 for negative characteristic items of total population. Mean score of PSS for positive and negative items was 2.15 and 2.25 respectively. In Table 2, 14-questions survey instrument and frequencies of pharmacy students' responses to the PSS is given.

On the basis of PSS cut off, students' stress level is categorized as low and high according to their obtained score. Independent sample t-test was adopted to know the association of stress with students' gender, education status (junior or senior), economic conditions, daily exercise and participation in social activities; using p value < 0.05 (response is shown in table 3). In this study source of stress i.e. stressors, were also determined. It was observed that making assignments on different topics was the major source of stress (36.1%). Frequent examinations (32.5%) were the next major source. Less reported stressors were participation in clinical rounds (9.0%) of senior students, lack of sleep (8.3%), interpersonal relation problems (5.7%), class competition (4.5%) and financial problems (3.8%) respectively. Almost three fourth of the students in their responses mentioned more than three common stressors in their life including assignment, examinations and lack of sleep/clinical rounds/interpersonal problems in common. Additionally students' strategies to cope the stress were also evaluated. Majority of the students, 180 (42.8%) revealed that talking to family or friends is the best way to release their stress. Other common strategies were: exercise (17.1%), watching T V (12.6%), crying (10.9%), sleeping (9.7%). Playing games (6.9%) was least effective strategy to cope perceived stress. Figure 1 contains the percentages of stressors and figure II contains stress coping strategies used by the students.

Figure 1: Frequencies of stressors

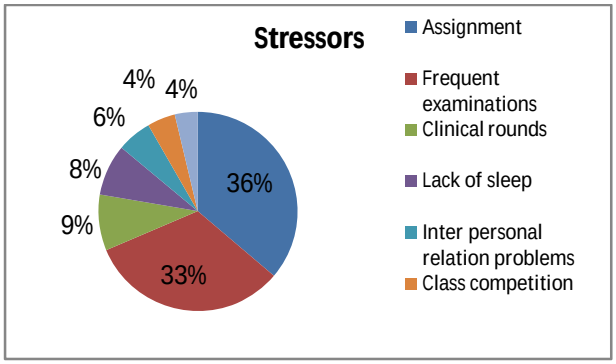

Table 2: Pharmacy Students' Responses to the PSS[22]

Statement	Never No (%)	Almost Never No (%)	Sometimes No. (%)	Fairly Often No. (%)	Very Often No (%)
Q1. How often have you been upset because of something that happened unexpectedly?	39 (9.3)	30 (7.1)	168 (40)	120 (28.5)	64 (15.2)
Q2. How often have you felt that you were unable to control the important things in your life?	59 (14)	39 (9.3)	159 (37.8)	103 (24.5)	61 (14.5)
Q3. How often have you felt nervous and ''stressed''?	31 (7.4)	35 (8.3)	174 (41.3)	111 (41.3)	70 (16.6)
Q4. How often have you dealt successfully with day to day problems and annoyances? Personal problem dealing	41 (9.7)	47 (11.2)	199 (47.3)	80 (19)	54 (12.8)
Q5. How often have you felt that things were going your way?	37 (8.8)	56 (13.3)	184 (43.7)	112 (26.6)	32 (7.6)
Q6. How often have you found that you could not cope with all the things that you had to do?	44 (10.5)	61 (14.5)	178 (42.3)	103 (24.5)	35 (8.3)
Q7. How often have you been able to control irritations in your life?	38 (9.0)	77 (18.3)	166 (39.4)	98 (23.3)	42 (10)
Q8. How often have you felt that you were on top of things?	42 (10)	60 (21.4)	167 (39.7)	81 (19.2)	41 (9.7)
Q9. How often have you been angered because of things that were outside of your control?	28 (6.7)	58 (13.8)	141 (33.5)	95 (22.6)	99 (23.5)
Q10. How often have you found yourself thinking about things that you have to accomplish?	19 (4.5)	31 (7.4)	119 (28.3)	115 (27.3)	137 (10.3)
Q11. How often have you been able to control the way you spend your time?	23 (5.5)	33 (7.8)	149 (35.4)	132 (31.4)	84 (20)
Q12. How often have you felt difficulties were piling up so high that you could not overcome them?	51 (12.1)	80 (19)	155 (36.8)	90 (21.4)	45 (10.7)
Q13. How often have you been angered because of things that happened that were outside of your control?	22 (5.2)	63 (15)	172 (40.9)	87 (20.7)	77 (18.3)
Q14. How often have you felt difficulties were piling up so high that you could not overcome them?	53 (12.6)	81 (19.2)	165 (39.2)	78 (18.5)	44 (10.5)

Table 3: Statistically Significant association of gender, education status, economic conditions, exercise time, participation in social activities with their responses

Relationship of the response with grouping variables	t	Sig
Gender Vs Q1	2.05	0.041
Gender Vs Q 3	4.38	0.0001
Gender Vs Q 6	2.85	0.005
Gender Vs Q 9	3.79	0.0001
Gender Vs Q13	2.62	0.009
Gender Vs Q14	2.36	0.019
Gender Vs Q7	2.32	0.021
Gender Vs Q8	2.02	0.044
Educational status Vs Q 3	3.57	0.0001
Educational status Vs Q 6	2.78	0.006
Educational status Vs Q 9	2.15	0.032
Educational status Vs Q 13	2.77	0.006
Educational status Vs Q 10	2.13	0.034
Educational status Vs Q 14	3.02	0.003
Economical status Vs Q 12	-2.37	0.018
Regular Exercise Vs Q 4	-2.28	0.023
Regular Social activities Vs Q 2	-2.31	0.021

DISCUSSION

Stress is a common problem affecting large population of students enrolled in professional education. This may lead to different psychological problems which affect their academic and personal life. The present study was conducted with the aim to determine the level of perceived stress and common sources of stress among pharmacy undergraduates. Study population focused on the junior and senior pharmacy undergraduates.

In this study it was evaluated that female are more susceptible to develop stress as compared to male students. The association of stress with gender was found statistically significant with $p < 0.0001$. Participants admitted; while responding to the questions, they feel *stressed* fairly often and unable to control things effectively in their academic and personal life. Similarly a study was conducted by Leisa *et al*, on pharmacy students,[6] in which it was evaluated that female students are more sensitive to develop stress than male.

Stressors which affect the professional and personal life are categorized as academic, environmental and factors related to life -style. These factors interfere with the professional growth, academic achievements and disturb

the interpersonal relations of the students. [7] It was observed that students of senior classes (belonging to age group more than 20 years) experience more stress as compared to junior students. Their high stress is associated with increased course work load, more assignment, frequent examination, and clinical rounds during academic session. This academic stress ultimately results in psychological problem i.e. anxiety. About three fourth senior students marked more than three stressors in their life. A clear difference of stress level among junior and senior students has observed by many researchers among students of different professions.[20, 21] Un- healthy life style also contributes to the stress development. It was determined that only 121 (28.7%) respondents exercise daily whereas 300 (71.3%) participate do not exercise (p value 0.023). No significant associations were observed between stress with regular meal intake, sleeping time and participation in social activities of respondents. Other stressors such as lack of sleep, interpersonal problems, and financial problems were less common stressors found among students.

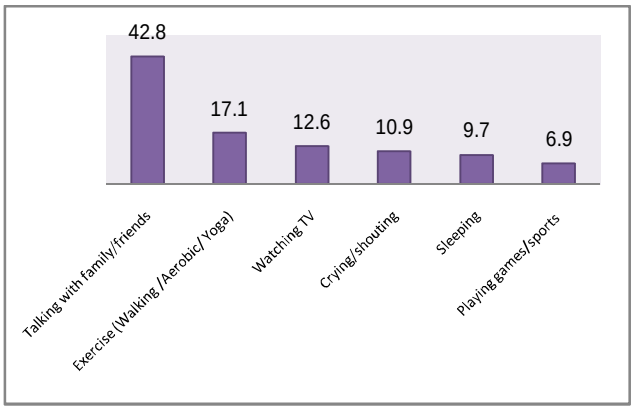

Figure 2: Stress Coping Strategies

Cut off for PSS score in this study was 31.11. High level of stress was present in 248(58.9%) respondents from the total population. 194 (62.9%) female and 54 (47.4%) male having PPS score higher than cut off. Whereas 114 (37%) female and 59 (52.2%) male respondents have PSS score less than cut off score. Responding to a question of negative characteristic, students (46.80%) accepted that they frequently feel things were getting out of their control. As a result of which 46.80% respondents admitted of being angered because of things out of their control. This shows their negative behavior and one of the causes which make them stressed. Conversely responding to the questions of positive characteristic, only 19.95% of the respondents were found that very often they an ability to control or manage their time. For observing the association of stress with demographic factors t-test was applied using p value less than 0.05 for significant responses.

In this study stress coping strategies were also involved and it was observed that students have different stressors and strategies for this purpose. Therefore their responses towards stress coping methods were different. According to respondents, most of the students feel comfortable and relaxed by discussing their problems with family members and friends. They consider it an easiest way to release their stress and find the solution of their problems. Most of the students do not exercise daily therefore they do not have a prominent trend of releasing their stress by such activities. Enjoying television programs was ranked as third strategy to cope their stress. A large number of girls reported that they release their tension by crying and eating too much which is an interesting sign. Sleeping and playing games were known as least applicable methods to release stress among students.

Different limitations are involved in every study. Similarly in this study a pre-tested questionnaire was used with proven reliability and validity with other populations, but still there were certain limitations regarding collection of participants' response. These limitations include lengthy self administered questionnaire, use of English language; therefore interpretation of the students' response should be done carefully. Furthermore impact of teaching style or faculty was not evaluated in this study which can directly affect the stress level. Suggestions to cope with stress should have been included in this study but lengthy questionnaire did not permit it. Therefore a study should be planned to include suggestion regarding effective coping strategies of stress hence improving personal and professional life of students.

CONCLUSION

Psychological problems such as stress, anxiety, depression have been reported all over the world among university students. From academic perspective, students of professional courses feel over burdened from their academic activities. The level of stress is higher among those students who are in senior classes and are going to start their career in near future. This high level of stress may associate with factors such as unsatisfactory economical conditions, lack of opportunities, lack of resources, fear of un-employment, poor dietary habits, limited social and recreational activities. There is a need to adopt some measure to relieve students from higher stress. For this purpose it is recommended that students should be given chances on regular basis to have healthy activities like sports events and sports activities. A mentoring system should be adapted in every professional institute to guide the students. Teacher-student relationship should be strengthen because a teacher can guide his student well about resolving day-to-day problems of life. With the help of this study an instructors can find out the reasons of stress among his students. A study is needed to cover the suggestions from faculty about, effective stress coping strategies among students. This knowledge can be utilized to counsel the students about providing guide lines to cope with stress. However to ensure a healthy and stress-free life it is necessary to acquire good habits, regular study and participation in extracurricular activities.

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