Perceived Stress among Students in Medical/Dental and Allied Health Universities in Pakistan due to COVID-19 Pandemic

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Abstract

Objective: Aim of the study was to explore the perceived stress in students at various medical and dental universities across Pakistan during the COVID 19 pandemic, using a validated scale.

Materials and Methods: The study took place at the Institute of Psychiatry (IOP) Rawalpindi Medical University (RMU).

Results: About 400 medical students participated countrywide. The final analysis was conducted on 333 participants who completed the survey form. Study participants comprised 69.1% female and 30.9% male students. About 74.5% of the participants represented Punjab province, 1.2% were from Sindh, another 1.2% belonged to Baluchistan, 2.4% were from KPK, and 1.5% were from AJK while 19.2% of them resided in Islamabad. The majority of participants were enrolled in MBBS (78.4%) while the rest were from BDS (3%), Allied Health Sciences (12.9%), Clinical Psychology (3.6%), and Pharm D (2.1%).

The mean perceived stress score was 21.34, SD=4.90 suggesting high perceived stress levels. Approximately 4.5% of students perceived low levels of stress, 80.2% perceived moderate stress, whereas 15.3% scored high on the perceived stress scale. Male students had statistically significant (p=0.38) lower stress levels (M=19.99, SD=5.91) as compared to females (M= 21.95, SD= 4.26).

Conclusions: Perceived stress level in medical students was alarmingly high and requires urgent intervention by the Medical and Dental Universities for immediate action and policy guidance for early identification and effective management. This can be achieved by delivering targeted e-workshops and evidence-based e-trainings for stress management like psychological first aid and mindfulness techniques.

Keywords: COVID-19, medical universities, stress.

Introduction

According to World Health Organization COVID-2019 situation report, confirmed cases suffering from this deadly virus were almost 70,000 in Pakistan in May 2020.[1] The pandemic has become synonymous not only with widespread physical morbidity and mortality but also with horrendous psychological and social suffering.[2] The ongoing and contagious nature of the disease, community-wide physical distancing measures, and unexpected suspensions of academic activities have started to affect the psychological well-being of students all over the globe.[3] Though evidence is swiftly emerging about the effect of a pandemic on the mental health of public[4] and healthcare professionals,[5] data are scarce regarding the effect on the medical student population especially in the Asian part of the world.

Since the level of stress and anxiety have been found to be high in healthcare professionals during COVID-19,[5] it is postulated that being a student, and especially related to medical and allied specialties, might render this population more vulnerable to stress in this challenging time. This study, hence, aims to find the perceived stress level of medical/dental and allied health sciences students in both public and private institutions both. Data on the stress faced by the students of medical/dental and allied health sciences institutions facing the COVID endemic has not been published as yet in Pakistan. This will help, not only in bridging the gap in the available data, but also, will help in making effective and targeted policies for initiating and implementing well-timed preventive measures for our treasured future healthcare force.

Materials and Methods

The study took place at the Institute of Psychiatry (IOP) Rawalpindi Medical University (RMU). After obtaining the ethical approval from RMU Institutional Research Forum and Ethical Committee, a webinar on mental health and psychosocial support was organized by IOP in May 2020 in collaboration with SYNCH (Solidarity among Young Nation for Change) a student organization with operating units in medical, dental and allied health sciences universities across Pakistan. The survey link used the "Perceived Stress Scale" and was shared with a description of the study with the participants, who were invited to participate after a formal consent. On completion of the sample size of 400, the survey link was deactivated and data was entered and was analyzed using SPSS 22.0. A p-value <0.05 was considered significant. Frequencies and descriptive analysis comprehended the demographic characteristics of the participants as well as the mean values of perceived stress. The t-test was conducted to explore the difference in levels of perceived stress between males and females while the f-test was conducted to find the rates of perceived stress across different age groups, students' field of study, the year of study as well as the residence of the participants.

The main objective of the study was to find the mean perceived stress score of the study participants using a validated tool, the perceived stress scale.[6] It is a ten-item scale where each item is rated on a 5-point Likert scale ranging from never (0) to almost always (4) with higher scores signifying more perceived stress. Scores around 13 are considered average. Scores of 20 or higher are considered as high stress.

Results

About 400 medical students participated countrywide. A final analysis was conducted on 333 participants who consented and completed the survey form. Study participants comprised 69.1% female and 30.9% male students. This indicates that more females participated in this research as compared to males.

Table 1: Demographic characteristics of the study sample (N= 333)

Demographic Variable		Frequency	Percentage
Gender	Males	103	30.9
	Females	230	69.1
Age	20 years or less	141	42.3
	21 to 25 years	189	56.8
	26 to 30 years	3	0.9
Residence	Sindh	4	1.2
	Punjab	248	74.5
	Baluchistan	4	1.2
	KPK	8	2.4
	AJK	5	1.5
	Federal Capital	64	19.2
Field of study	MBBS	261	78.4
	BDS	10	3
	AHS	43	12.9
	Clinical	12	3.6

	Psych Pharm D	7	2.1
Year of study	1st year	81	24.3
	2nd year	71	21.3
	3rd year	75	22.5
	4th year	47	14.1
	Final year	57	17.1
	Graduated	2	0.6

Table 1 describes the age distribution of the study sample indicating that about 42.3% (141) participants were of 20 years of age and less, about 56.8% (189) were from 21 to 25 years whereas about 0.9% (3) of them were from 26 to 30 years of age. This indicates that most of the students were in the age group from 21 to 25 years of age.

The residential status of the sample shows that about 74.5% (248) of them belonged to Punjab 1.2% (4) of the participants belonged to Sindh and Baluchistan each about 2.4% (8) of them belonged to KPK, and around 1.5% (5) of them belonged to AJK while 19.2% (64) of them resided in Islamabad. This indicates that most of the sample was from the Punjab region.

Data regarding the students' field of study who participated in the research indicated that around 78.4% (261) of them were enrolled in MBBS, approximately 3% (10) of them were enrolled in BDS, nearly 12.9% (43) of them were enrolled in Allied Health Sciences, about 3.6% (12) of them were studying Clinical Psychology while 2.1% (7) of them were enrolled in Pharm D.

Results relating to the student's year of study in Medical College indicated that about 24.3% (81) of them were in 1st year, around 21.3% (71) in 2nd year,

approximately 22.5% (75) in 3rd year, nearly 14.1% (47) of them in 4th year, about 17.1% (57) of them were in the final year while 0.6% (2) of them had already graduated. This indicates that the majority of 1st year students participated in this research.

The mean perceived stress score in medical students was 21.34, SD=4.90 suggesting high-stress levels.

Figure 1 shows the rates of perceived stress among the study sample of 333 individuals (N=333). According to the results, approximately 4.5% (15) of the sample perceived low levels of stress, about 80.2% (267) of the sample perceived a moderate level of stress while 15.3% (51) of the sample perceived a high level of stress. This indicates that most of the students fall in the category of having a moderate stress level.
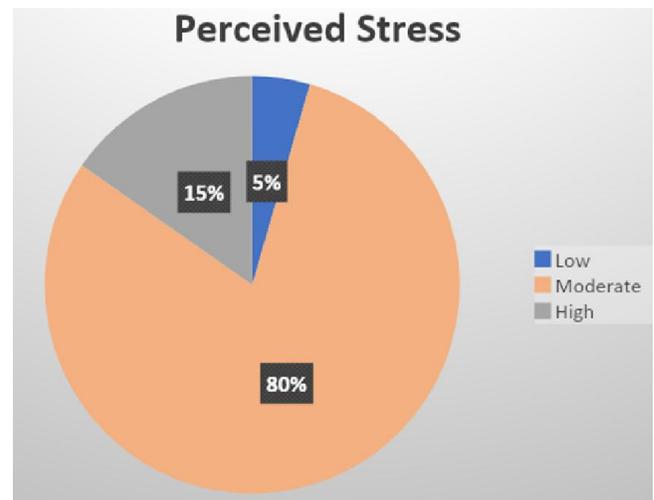

Figure 1: Percentages of Perceived Stress among study sample (N= 333)

Table 2: Difference in rates of Perceived Stress between males (n= 103) and females (n= 230)

GENDER										
	Males	**n=103**	**Females**	**n=230**				**95% CI**		
Scales	M	SD	M	SD	t	df	p	LL	UL	Cohen's d
Perceived stress	19.99	5.91	21.95	4.26	3.41	331	0.01	-3.0	-.83	0.38

Table 2 explains the results of the t-test for comparing gender-based mean differences on Perceived Stress. Gender differences are significant (p=0.38) for the study variable. Thus, indicating that males (M=19.99, SD=5.91) are lower on perceived stress level as compared to females (M=21.95, SD=4.26).

Furthermore, the rates of perceived stress are not significantly different across different age groups, students' field of study, the year of study as well as the residence of the participants. The results indicate that the participants of age 20 or less, from age 21 to 25 as well as from 26 to 30 have approximately equal levels

of perceived stress. Similarly, the participants of different fields of study, different years of education, and different provinces have equal rates of perceived stress.

Discussion

COVID-19 pandemic is a global health emergency and it has adversely affected the psychological well-being of people from all races, religions, walks, and sects of life.[7] The current study, particularly aimed at

exploring perceived stress levels of medical/dental and allied health specialties' students, in the challenging times of Covid-19 through an online survey. Female students outweighed their counterparts in response rate and this finding in itself is consistent with a few previous surveys.[8] Though some researchers cited the reason for female overrepresentation to be unclear,[9] this could be due to an increased relative interest in the study topic.

The mean perceived stress score was 21.34, SD=4.90 which implies that the study participants perceived a high level of stress. This finding is in accordance with the upcoming international researches showing high rates of anxiety in students during this pandemic.[3] This could be an underplay of various factors, ranging from general ones like decreased social interaction, economic constraints[10], and restriction on mobility[11] to more specific ones, like worry about academic delays and future employment uncertainties.[3] In the study participants, being a health-related specialty student could intensify this worry due to an inevitable risk of exposure and contraction of the disease, as well as watching and hearing about people affected by the disease along with a shortage of masks and disinfectants.[12]

The only statistically significant difference in mean stress level was found based on gender in the study. Previous studies have shown mixed findings in this regard. A study conducted on Chinese students reflected no significant difference in presence of stress and anxiety in terms of gender[3] yet, another study by Moreno et al reported significantly higher rates in females, in similarity with findings in the current study.[13] This can be explained by the presence of a relatively higher incidence of stress-related disorders in females in the general population as well. Though unclear, postulated mechanisms involved could partially be an enhanced stress sensitivity and different coping styles in response to stress in females.[14]

These findings are alarming as high-stress levels have been associated not only with cardiovascular and physical comorbidity[15] but also with the development of serious mental, behavioral and psychiatric disorders[16] and can lead to poor quality of life and overall dissatisfaction in life[17] Another important consideration should be the possible development of risk of self-harm and suicide.[18] Risk of suicide is already high in healthcare professionals owing to easy means of access to drugs.[19] This will place these students in a highly vulnerable group and warrants

prompt action by the Government and health care policymakers.

Limitations

Study limitations include a small sample size and a survey-type study design which restricts the generalizability of the results.

Conclusion

Students, especially health-related specialty ones, are under moderate levels of stress which might render them to be at a greater risk of developing psychological and psychiatric sequelae in response to this public health emergency. There is a dire need to make focused policies and take effective measures like providing online education and brief interventions, to intervene early and prevent possible breakdowns of our potential future healthcare force. Advanced research on the national level is needed to identify associated precipitating and preventing factors as well as to clarify the specific role of potential interventions.

Acknowledgements

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