

IMPACT OF POST-TRAUMATIC STRESS OF COVID-19 ON MENTAL WELLBEING OF UNDERGRADUATE MEDICAL STUDENTS IN PAKISTAN

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ABSTRACT

Objective: To determine frequency of post-traumatic stress among undergraduate medical students in Pakistan due to COVID-19.

Study Design: Web based cross-sectional survey.

Place and Duration of Study: Sahiwal Medical College Sahiwal, from 1st May 2020 to 31st May 2020.

Methodology: Post-traumatic stress due to COVID-19 was assessed by using Impact of Event scale revised version (IES-R). Questionnaire was distributed with use of Whatsapp messenger to 450 students.

Results: Out of total, 410 responded so response rate of our study was 91.11%. Major percentage of our study population was female (74.9%). All are aged between 18-23. Majority belong to 4th year MBBS (153-37.3%). Third year was second on the list on the basis of percentage (98-23.9%). Severe cases of post-traumatic stress were 72 (17.60%) out of 410 study participants and moderate category included 150 (36.50%) participants. The frequency rate of severe cases of post-traumatic stress in female medical undergraduates was found to be higher (77.80%). Our study found statistically significant result when frequency rate of post-traumatic stress was associated with institution ($p=0.031$). The frequency rate of severe and moderate post-traumatic cases was higher in other institutions (59.73% and 51.34% respectively).

Conclusion: The severity of post-traumatic stress is quite evident in all the MBBS students generally while in female students specifically in our study.

Keywords: COVID-19, Impact of event scale-revised, MBBS students, Post-traumatic stress.

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INTRODUCTION

The year 2020 was not an ideal one for many of the humans around the world as pandemic of COVID-19 hit them with maximum of damage¹. The pandemic which began in Wuhan in Dec 2019 quickly enveloped the world with its disastrous implications. South-East Asia generally and Pakistan specifically were taken by storm of COVID-19². Till date Pakistan is drastically showing its peak in number of COVID positive cases (1,39,656 out of 1 million of population tested for it)³.

From the day its onset in Pakistan, COVID-19 affected masses of population both physically and mentally⁴. People belonging to different casts and occupations felt its wrath and it generally impacted their daily routine. Many became jobless

due to closure of offices because of lockdown in Pakistan. Mental health burden was one of the major concerns around the world as WHO alarmed the people about it on and off⁵. Students belonging to different institutions were also affected both mentally and physically so as medical students too. Medical students of MBBS are cream of the nation and most brilliant minds around the world generally and in Pakistan specifically⁶. So their mental health was of greater concern for the authorities as it can have direct impact on future of the medical profession in Pakistan⁷.

This study aimed at evaluating the mental health of Pakistani MBBS students by using IES-R scale. Impact of event scale is the recent and most modified method to assess the post-traumatic stress. The evaluation of post-traumatic stress of medical students of MBBS using IES-R was done to know the impact of COVID-19 on the mhence we used this method for assessment of mental health of MBBS students.

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METHODOLOGY

It was a cross-sectional questionnaire based survey conducted among students of different MBBS classes across different medical colleges of Pakistan. It was conducted at Sahiwal medical college Sahiwal for a period of 1 months from 1st May 2020 till 31st May 2020.

Sample Size Was Calculated By Using Following Formula

$$\text{Sample size} = \frac{Z_{1-\alpha/2}^2 p (1-p)}{d^2}$$

$Z_{1-\alpha/2}$ = is standard normal variate (at 5% type I error ($p < 0.05$) it is 1.96. As in majority of studies p -values are considered significant below 0.05 hence 1.96 is used in formula.

p = Expected proportion in population based on previous studies or pilot studies = 0.187.

d = Absolute error or precision = 0.03.

Sample size = 321.

Convenient Sampling Technique Was Used

Only undergraduate MBBS students were included in study. Graduate and post graduates were excluded. The survey was approved by Ethical review committee of Sahiwal Medical College Sahiwal via letter no 53/DME/SLMC/SWL. An informed consent was taken before filling of questionnaire forms. The questions related to post-traumatic stress were added by using Impact of Event Scale Revised (IES-R)⁸. Questionnaire was made through Google docs and distributed among students through WhatsApp messenger. It was done due to lockdown in Pakistan due to COVID-19 hence social distancing was made sure while conducting this study. Students of MBBS were included only in this study while students belonging to other medical fields like physiotherapy and pharmacy were not included.

Data were assessed by using SPSS version-20. Frequency distributions were calculated. We also calculated frequency rates of our study participants according to different demographic characteristics. Frequency rates of different cases of post-traumatic stress were also calculated

and p -value of ≤ 0.05 was taken as statistically significant and is calculated by chi-square test.

RESULTS

A total of 450 students were distributed the questionnaire out of which 410 students responded so forming the response rate of our study as 91.11%. Out of 410 participants of our study, 25.1% (103) were males and the rest were females (74.9%) hence making females a major percentage of our study population. As all the five MBBS classes were involved hence frequency distributions were also calculated for each class. Out of total individuals, the majority belong to the 4th year MBBS (153-37.3%). The third-year was second on the list based on the percentage (98-23.9%). The percentage participation of other classes was; final year (85-20.7%) and the first year and 2nd year were having equal participation (37-9%). As we distributed our questionnaire

Table-I: Frequency distribution of demographic characteristics among undergraduate medical students (n=410).

Demographic Characteristics	Groups - n (%)
Gender	Male - 103 (25.1)
	Female - 307 (74.9)
Class (MBBS)	First Year - 37 (9.0)
	Second Year - 37 (9.0)
	Third Year - 98 (23.9)
	Fourth Year - 153 (37.3)
	Final Year - 85 (20.7)
Institution	SLMC - 205 (50.0)
	Others - 205 (50.0)

Table-II: Frequency of post traumatic stress among undergraduate medical students (n=410).

Variable	Groups - n (%)
Post Traumatic Stress	Severe - 72 (17.60)
	Moderate - 150 (36.60)
	Mild - 188 (45.90)

among different medical institutions so according to frequency distributions SLMC and other institutions had equal participation in the study (205 each, 50%) table-I.

The frequency distributions of the post-traumatic stress were divided into three sub-groups. Severe cases of post-traumatic stress were 72

(17.60%) out of 410 study participants, moderate category included 150 (36.50%) participants while mild cases of post-traumatic stress comprised of 188 (45.90%) participants table-II.

We also calculated frequency rates of our study participants according to different demographic characteristics. Inferential characteristics were also calculated by using Chi-square tests.

According to gender distribution, the frequency rate of post-traumatic stress was found to be higher in female students than males. The

The frequency rate of severe and moderate post-traumatic cases was higher in other institutions (59.73% and 51.34% respectively). While mild cases were having higher frequency at Sahiwal medical college Sahiwal (54.78%) table-IV.

Finally the frequency rate of different cases of post-traumatic stress was calculated in association with different MBBS classes. Students of 4th year MBBS of different medical institutions were found to be highly affected by post-traumatic stress having frequency rates of 37.50%, 32.00% and 41.50% for severe, moderate and mild

Table-III: Frequency of Post-traumatic stress among undergraduate medical students stratified by Gender (n=410).

Variable	Males (n=103) n (%)	Females (n=307) n (%)	χ ²	p-value
Post Traumatic Stress				
Severe	16 (22.20)	56 (77.80)	0.514	0.774
Moderate	40 (26.70)	110 (73.30)		
Mild	25 (25.00)	141 (75.00)		

Table-IV: Frequency of Post-traumatic stress among undergraduate medical students stratified by Institution (n=410).

Variable	Sahiwal medical college Sahiwal (n=205) n (%)	Others (n=205) n (%)	χ ²	p-value
Post Traumatic Stress				
Severe	29 (40.27)	43 (59.73)	10.648	0.031
Moderate	73 (48.66)	77 (51.34)		
Mild	103 (54.78)	85 (45.22)		

Table-V: Frequency of Post-traumatic stress among undergraduate medical students stratified by Class (n=410).

Variable	1st Year (n=37) n (%)	2nd Year (n=37) n (%)	3rd Year (n=98) n (%)	4th Year (n=153) n (%)	Final Year (n=85) n (%)	χ ²	p-value
Post Traumatic Stress							
Severe	4 (5.60)	11 (15.27)	18 (25.00)	27 (37.50)	16 (22.20)	7.833	0.645
Moderate	14 (9.30)	12 (8.00)	41 (27.30)	48 (32.00)	34 (22.70)		
Mild	19 (10.10)	14 (7.44)	39 (20.70)	78 (41.50)	35 (18.60)		

frequency rate of severe cases of post-traumatic stress in female medical undergraduates was found to be higher (77.80%) than males (22.20%). Moderate cases also had higher frequency rates in females (73.30%) than males (26.70%). While mild cases of post-traumatic stress were highly frequent among female students too (75.00%). But it was not found to be statistically significant (p=0.774) table-III.

Our study found statistically significant result when frequency rate of post-traumatic stress was associated with institution (p=0.031).

cases respectively. Undergraduate students of 3rd year MBBS were found to have 2nd highest frequency rates among severe, moderate and mild cases of post-traumatic stress with percentages of 25%, 27.30% and 20.70% respectively table-V.

DISCUSSION

The response rate of our study was overwhelming (91.11%) as majority of undergraduate medical students of Sahiwal medical college and other medical colleges responded quite efficiently hence making our study very reliable.

Female students (74.9%) participated more than the male students (25.1%) in our study because of the fact that in different medical colleges of Pakistan the number of female students is generally higher than the males⁹. 4th year MBBS medical students participated with higher numbers (37.3%) in our study. It can be attributed the fact that some of the 4th year MBBS students were also participating in conduction and data collection of this study hence their classmates participated more vigorously in the study. In a previous study done at different medical institutions in Karachi, final year students were having more participation in their study¹⁰. Institution participation was equal between Sahiwal medical college Sahiwal and other institutions.

Most of the study participants were found to be having moderate to severe post-traumatic stress (54.10%) which was in line with a previous study by Rajkumar *et al*, 2020 in which the stress rate was 53.20%¹¹. It showed that COVID-19 had great impact on the mental health of undergraduate medical students at different medical institutions of Pakistan. Such high levels of stress can be attributed to the lethal pathogenicity of COVID-19 and also due to the great fear spread in the whole world¹². Medical students of Pakistan specially can also be having these high post-traumatic stress rates because of alarming increase in number of cases in Pakistan during the period in which study was conducted¹³.

We also calculated frequency rates of all the cases of post-traumatic stress according to different demographic characteristics. Our result was highly statistically significant when association of post-traumatic stress cases was found with different medical institutions including Sahiwal medical college Sahiwal and others ($p=0.031$). It was in accordance with a previous study by Lanker *et al*, 2020 with $p=0.0414$. Our study also showed that female medical students were suffering more (77.80%) from post-traumatic stress due to COVID-19 than males. In a recent study by Wang *et al*, 2020, similar result was found in which 80.25% females were having post-traumatic stress¹⁵.

Students of 4th year and 3rd year MBBS were found to be affected more from moderate to severe post-traumatic stress due to COVID-19 in our study. It can be attributed to the uncertainties prevailing regarding closure of medical colleges due to lock down in this pandemic¹⁶ and also due to the fact that the future of the examinations is in doubt too^{17,18}. Other factors can be looked upon in further studies related to the students of 3rd year and 4th year particularly.

CONCLUSION

The wrath of COVID-19 is not only affecting general public but also the undergraduate MBBS students of Pakistan. The severity of post-traumatic stress is quite evident in all the MBBS students generally while in female students specifically. Counseling sessions must be arranged for such students so that it may not affect the mental health of our students as they are the future of medical community.

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CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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