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ORIGINAL ARTICLE

Prevalence and Associated Factors of Psychosocial Impact of COVID-19 Pandemic among different population groups in Lahore, Pakistan: a cross-sectional study

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ABSTRACT

Background: COVID-19 pandemic presents a consequential threat to individual's mental health in addition to obvious health-related impact.
Aim: To focus on prevalence as well as related factors of psychosocial impact of COVID-19 in Lahore, Pakistan.
Methods: Our study design was analytical cross-sectional, and study population comprised 382 participants including healthcare workers, teachers, students, and household members. We used non-probability convenience sampling method. We built a structured self-administered questionnaire for collection of data and psychological impact was measured with Impact of Event Scale-Revised (IES-R).
Results: Independent factors related to psychological impact were identified using bivariate logistic regression and all significant factors at p-value 0.25 were processed using multivariate model. AORs with 95% CIs were used to assess magnitudes of associations. Prevalence of psychological impact in Pakistan is 53.4%. Being female (β=1.517; AOR=4.561; 95%CI: 2.838-7.329)and covering mouth when coughing and sneezing (β=0.486; AOR=1.626; 95%CI: 1.012-2.612)are significantly associated with psychosocial impact after logistic regression. Prevalence of psychological impact in Pakistan is very high.
Conclusion: Henceforth, policy makers need to consider psychological issues while planning pandemic-related interventions.
Keywords: COVID-19, psychosocial impact, prevalence, convenience sampling

INTRODUCTION

Corona virus disease of 2019 (COVID-19) has become most critical juncture of the millennium and has been declared an international public health emergency on 30th January, 2020 by WHO. As of today4thApril 2022, diagnosed cases of COVID-19 have gone over 491, 930, 541 and 6,176, 811 deaths have been reported worldwide[1]. In Pakistan, the first COVID-19 case appeared on 26th February 2020, and then situation escalated quickly and in order to effectively contain COVID-19, a complete lockdown was imposed in the country on 23rd March 2020[2]. Pakistan so far has 1,525,620 cases and 30,361COVID-19 related reported deaths[1].

COVID-19 significantly affects mental health of people in addition to physical damage[2]. There have been reports on the psychological effects of pandemic on the general public, healthcare workers, teachers and students[3-6]. As most of the present research work focusses on the pathophysiology and management of COVID-19 pandemic, the mental well-being of the individuals affected by the outbreak is usually ignored and limited research data is available to recognize the psychological impact and changes in behavior in affectedpeople[7,8].

The present research was carried out to assess the prevalence and associated factors of psychosocial impact of COVID-19 pandemic among different population groups in Lahore, Pakistan which could substantially help policy makers in developing thorough strategies related to mental health services.

METHODS

The present analytical cross-sectional survey was carried out in Lahore, Pakistan. The calculated sample size was 382.A non-probability convenience sampling technique was used to select different population groups living in Lahore, Pakistan. The targeted sample size was achieved in 10 days from 30thApril, 2020 to 9th May, 2020. Data was collected via structured self-administered questionnaire. Verbal informed consent was taken from all participants. Questionnaire was adopted from previous studies related to COVID-19 associated psychological impact[3,10-13]. The structured questionnaire comprised several components such associo-demographic data, COVID-19 related characteristics, and psychological impact.

SPSS version 24.0 was used for analysis of data. Firstly, frequencies and percentages were determined for categorical data and mean (± standard deviation) was determined for continuous data. Secondly, prevalence of psychological impact was measured. Thirdly, chi-square test was applied to categorical data for determination of correlates of psychosocial impact. Fourthly, bivariate logistic regression was performed using the backward stepwise method to explore independent factors for COVID-19 related psychological impact. Adjusted odds ratio (AOR) and 95% confidence intervals (95% CIs) were calculated through logistic regression model. All significant factors at p-value 0.25 on bivariate analysis were processed using multivariate model. A p-value <0.05 was considered statistically significant (2-sided tests). Hosmer and Leme show test was applied to evaluate goodness of fit for final model[14].

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RESULTS

Three hundred and eighty two participants were included in this survey. Mean age of participants was 30.87±7.82 years. 162(42.4%) participants were males, whereas 220(57.4%) were females. 360(94.2%) participants were Muslims and remaining 22(5.8%) were Christians. With regard to employment status, 278(72.8%) participants were employed. Regarding occupation, 158(41.4%) participants were healthcare workers, 98(25.7%) were teachers, 71(18.6%) were students, and remaining 55(14.4%) were household members. The majority of respondents i.e., 148(38.7%) had a household size of 3-5 people. With respect to physical health status, 58(15.2%) respondents had persistent fever, 117(30.9%) had cough, 12(3.1%) had shortness of breath, and 62(16.2%) had any chronic illness present. 31(8.1%) respondents had history of recent hospitalization in past 14 days. There were 22(5.8%) participants who had recent testing for COVID-19 in past 14 days, whereas 89(23.3%) had recent history of quarantine in past 14 days. Overall 39(10.2%) respondents were

in contact with an individual with confirmed COVID-19, while 50 (13.1%) were in contact with an individual with suspected COVID-19. Regarding knowledge and concerns about COVID-19, the results show that television was the main source of health information about COVID-19 as reported by 241(63.1%) participants. Majority of the respondents i.e., 231(60.5%) were satisfied with amount of health information available about COVID-19.203(53.1%) respondents needed regular updates for latest information about COVID-19, whereas 240(62.8%) needed information about availability and effectiveness of medicines/ vaccines against COVID-19.

With regard to precautionary measures acquired by participants, most frequent was washing hands after touching contaminated objects in 235(61.5%) participants. Wearing mask was observed in 219 (57.3%) participants, avoiding sharing of utensils in 204(53.4%) participants, and covering mouth when coughing and sneezing in 200(52.4%) participants.

In present study, overall prevalence of psychological impact was found to be 53.4%. The psychological impact was measured using the IES-R scale (M: 24.29; SD=4.587). No psychological impact (scores 0 -23) was observed in 178(46.6%) participants, mild psychological impact (scores 24-32) in 188(49.2%) participants, moderate psychological impact (scores 33-36) in 13(3.4%) participants, and severe psychological impact (scores>36) in 3(0.8%) participants.

We used bivariate logistic regression using Backward Stepwise method to see the independent variables associated with psychological impact, and all significant factors at p-value 0.25 were processed using multivariate model. Hosmer-Leme show Goodness of Fit test showed that our model fitted data well (χ^2= 0.479; p= 0.787).

Table I: Association between psychological impact and COVID-19 related characteristics among different population groups by chi-square test (n=382).

Variables	Psychological impact		χ^2-value	p-value
	Yes	No		
Healthcare workers				
Long duty hours				
Yes	20 (12.7)	72 (45.6)	4.091	0.043
No	24 (15.2)	42 (26.6)		
Teachers				
Stress related to academic arrangements				
Yes	15 (15.3)	50 (51.0)	3.932	0.047
No	14 (14.3)	19 (19.4)		
Feeling of worry and anxiety about professional support and training on distance and e-learning				
Yes	17 (17.3)	55 (56.1)	4.479	0.034
No	12 (12.2)	14 (14.3)		
Students				
Stress related to academic activities				
Yes	21 (29.6)	37 (52.1)	6.684	0.010
No	0 (0.0)	13 (18.3)		
Household members				
Stress related to living arrangements				
Yes	10 (18.2)	31 (56.4)	5.085	0.024
No	8 (14.5)	6 (10.9)		

Table II: Association between psychological impact and socio-demographic factors and COVID-19 related characteristics by logistic regression analysis (n=382).

Variables	β	AOR	95% CI for AOR		p-value	
			Lower	Upper	Category	Overall
Gender						
Female	1.517	**4.561**	**2.838**	**7.329**	0.000	0.000
Male		(reference)	(reference)	(reference)		
Religion						
Muslim	0.480	1.617	0.617	4.237	0.328	0.230
Christian		(reference)	(reference)	(reference)		
Difficulty in breathing						
Yes	1.221	3.392	0.409	28.137	0.258	0.101
No		(reference)	(reference)	(reference)		
Recent testing for COVID-19 in past 14 days						
Yes	-0.645	0.525	0.196	1.403	0.199	0.230
No		(reference)	(reference)	(reference)		
Need for information about availability and effectiveness of medicines/vaccines against COVID-19						
Yes	-0.251	0.778	0.472	1.282	0.324	0.246
No		(reference)	(reference)	(reference)		
Covering mouth when coughing and sneezing						
Yes	0.486	**1.626**	**1.012**	**2.612**	0.044	**0.019**
No		(reference)	(reference)	(reference)		
Washing hands after touching contaminated objects						
Yes	0.031	1.031	0.374	2.839	0.953	0.046
No		(reference)	(reference)	(reference)		

DISCUSSION

In this study, the overall prevalence of psychological impact was 53.4%.Mild psychological impact was seen in 188(49.2%) participants, moderate psychological impact in 13(3.4%) participants, and severe psychological impact in 3(0.8%) participants. These results are in accordance with another study carried out at China which reported that 53.8% of participants had psychological impact due to COVID-19 pandemic, while another study carried out at India reported that 33.2% of respondents had psychological impact (mild/ moderate/severe) due to COVID-19 pandemic[2,3].

With regard to precautionary measures, covering mouth when coughing and sneezing and washing hands after touching contaminated objects were significantly correlated with psychological impact in our study. Similar studies conducted at China have also assessed the effects of precautionary measures on psychological impact[3,16].

Among healthcare professionals, long duty hours was found to be significantly associated with psychological impact which is in line with other studies conducted at China. These studies also found that medical staff is more vulnerable to develop psychological impact[17,18].

With respect to teachers, feeling of worry and anxiety about professional support and training on distance and e-learning and stress related to academic arrangements were statistically significantly associated with psychological impact in this study. Similar studies conducted at China and India have also reported psychological stress in teachers[13].

Regarding household members, stress related to living arrangements was significantly associated with psychological impact in present study. Similar problems related to household

members have also been discussed in other studies conducted at China[12,13].

Lastly, significant psychological impact has also been observed in previous pandemics, such as SARS in 2003 and H1N1 influenza in 2009[19].

CONCLUSION

In summary, prevalence of psychological impact in Pakistanis very high i.e., 53.4%. Being female and covering mouth when coughing and sneezing are significantly associated with psychological impact after logistic regression. Among different population groups, long duty hours in healthcare workers, feeling of worry and anxiety about professional support and training on distance and e-learning and stress related to academic arrangements in teachers, stress related to academic activities in students, and stress related to living arrangements in household members are significantly correlated with psychological impact. Therefore, policy makers should consider issues related to mental health while designing strategies, and global cooperation and close collaboration of all countries is required to combat COVID-19 pandemic.

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