ORIGINAL ARTICLE

Willingness of Medical Students to Volunteer for Assisting Frontline Doctors During The COVID-19 Pandemic: A Cross-Sectional Study

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ABSTRACT

Objective: To assess the willingness of medical students to volunteer for assisting frontline doctors during the COVID-19 pandemic.

Study Design: Cross-sectional study.

Place and Duration of Study: This study was conducted from 12th June 2020 to 20th July 2020 on medical students of Rawalpindi Medical University.

Materials and Methods: An online survey was conducted among 282 undergraduate medical students selected via convenience sampling. SPSS version 25 was used for analysis.

Results: More than half of the participants (52.1%) were unwilling to volunteer during the COVID-19 pandemic. Most of those who wanted to volunteer preferred to do so by providing indirect healthcare via telemedicine. The most popular reason for preferring to volunteer was an ethical inclination to help the frontline workforce. The main barriers towards volunteering included the possibility of being vectors for viral transmission, consuming personal protective equipment that healthcare personnel needed, and contracting COVID-19. No significant association was found between gender (p=0.567), age group (p=0.793), year of study (p=0.911), or boarder/non-boarder status (p=0.243), and willingness to volunteer.

Conclusion: The majority of medical students were unwilling to volunteer for assisting frontline doctors during the COVID-19 pandemic.

Key Words: *COVID-19, Medical Education, Medical Students, Pandemics, Volunteerism.*

Introduction

In late December 2019, Wuhan, a metropolitan city in China, experienced an outbreak of atypical pneumonia which was later be identified as a novel viral disease COVID-19.[1] On March 11, 2020, World Health Organization officially declared COVID-19 to be a global pandemic.[2] Governments imposed lockdowns to curb the spread of COVID-19 which brought educational activities to a halt.[3] Many medical colleges suspended on-campus classes as well as clinical rotations. The American Association of Medical Colleges (AAMC) supported the suspension of direct patient-medical student interaction during this period. [4]On the other hand, some were of the view that the services of medical students should be utilized during such times of crisis, with some medical schools offering final year students the opportunity to graduate early and start working on the frontlines.[5]

In Pakistan, Student Taskforce against COVID-19 started by final year medical students at Agha Khan University Hospital recruited over 500 members.[6] In April 2021, the Punjab government called upon third to final year medical students to volunteer in hospitals and quarantine facilities.[7]However, these recruitment drives were conducted without surveys on medical student views towards volunteerism during the pandemic.

Medical students are prospective clinicians in training who can be called for assistance if healthcare systems are overwhelmed in dealing with this pandemic. Students may also have apprehensions regarding joining the workforce against a deadly pandemic at a premature stage of their medical career. Therefore, the objective of this study was to assess the willingness of medical students to volunteer for assisting frontline doctors during the COVID-19 pandemic.

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Materials and Methods

This cross-sectional study was conducted on the undergraduate medical students of Rawalpindi Medical University from 12th June 2020 to 20th July 2020. Ethical approval was granted by Institutional Research Forum (ERC number: 81RMU/2020/IREF). Participants were recruited via non-probability convenience sampling before online classes commenced for our study population. The sample size was calculated to be 282 for an estimated population of 1050 students. Students enrolled in clinical years (3rd, 4th, 5th year) were included in the study. Pre-clinical year students (1st and 2nd year) were excluded.

Data was collected using a pilot-tested, online, self-structured questionnaire designed using Google forms which had questions and statements collected from various online articles.[8-11] The content and construct of the questionnaire were validated by a senior faculty member. It was disseminated in all official class WhatsApp and Facebook groups. The response rate was 100%. Confidentiality of the participants was maintained and informed consent was taken. The first part of the survey asked about demographic details namely age, gender, year of study, boarder/non-boarder status and whether students wanted to volunteer or not. The second section explored why the students were willing or unwilling to volunteer. The third section assessed the responses of students to nine general statements regarding volunteerism during the COVID-19 pandemic via the options of "Agree", "Disagree" and "Undecided".

Statistical software program SPSS version 25.0 was used for data analysis. Frequencies and percentages were calculated for categorical variables. The associations between variables were assessed using the chi-square test and binomial logistic regression analysis. Adjusted odds ratios and 95% confidence intervals were calculated. A p-value of less than 0.05 was considered significant.

Results

The cross-tabulation between demographic characteristics of the sample and willingness to volunteer is displayed in Table I. The mean age was 21.9±1.26 years. Out of the 282 participants, the majority were females (205, 72.7%) and non-boarders (177,62.8%). More students (147, 52.1%) were unwilling to volunteer to assist frontline doctors during the COVID-19 pandemic compared to those who were willing to volunteer (135, 47.9%). No significant association was found between gender, age group, year of study or boarder/non-boarder status, and the willingness to volunteer.

Table I: Association Between Demographic Characteristics and Willingness to Volunteer (N=282)

Demographic characteristics	Willing to volunteer		Chi-square value (df)	p-value
	Yes	No		
Age Group				
18-20	20(14.8%)	19(12.9%)	0.464 (2)	0.793
21-23	103(76.3%)	112(76.2%)		
24-26	12(8.9%)	16(10.9%)		
Gender				
Male	39(28.9%)	38(25.9%)	0.327 (1)	0.567
Female	96(71.1%)	109(74.1%)		
Year of study				
3rd Year	51(37.8%)	52(35.4%)	0.187 (2)	0.911
4th Year	44(32.6%)	49(33.3%)		
Final Year	40(29.6%)	46(31.3%)		
Nonboarder/Boarder status				
Non-boarder	80(59.3%)	97(66.0%)	1.363 (1)	0.243
Boarder	55(40.7%)	50(30.4%)		

Table II shows the ways by which students preferred to volunteer to assist doctors. The majority of students wanted to contribute by providing indirect health care via telemedicine at the university campus. Assisting with direct care of COVID-19 patients was the least popular choice.

Table II: Means by Which Students Preferred to Volunteer

Mode of contribution	n (N=135)	Percentage (%)
Indirect healthcare via telemedicine at the university campus	88	65.2
Others (e.g., providing child care for health care providers, food deliveries, procuring PPE for health care workers, etc.)	65	48.1
Assisting clinicians in outpatient departments	60	44.4
COVID-19 related research	55	40.7
Assisting clinicians in inpatient departments that do not involve COVID-19 patients	49	36.3
Assisting clinicians with direct care of COVID-19 patients	29	21.5

Figure 1 and Figure 2 show the reasons given by students for opting or not to volunteer during this pandemic, respectively. The most common reason for preferring to volunteer was an ethical inclination to assist their seniors in the health care field. The most common reason for not preferring to volunteer was the concern that students may transmit the infection to others, especially their parents and other family members.

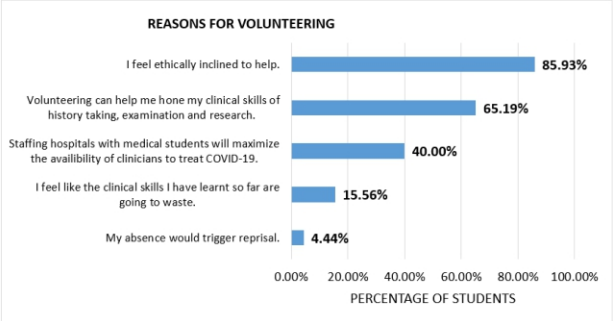

Fig. 1: Reasons Students Gave for Their Willingness to Volunteer

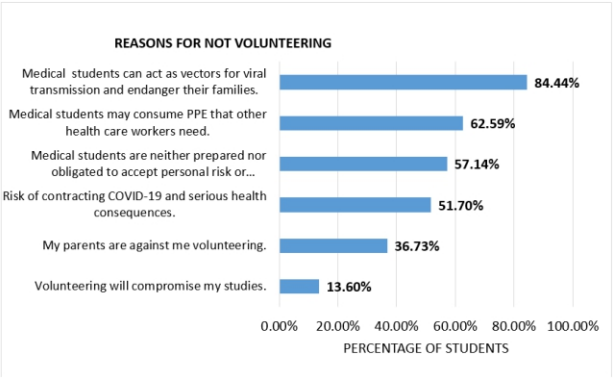

Fig. 2: Reasons Students Gave for Their Unwillingness to Volunteer

Most students were not in favour of giving final year medical students the option of graduating early to join the medical workforce (183, 60.9%, *p*=0.000). Among the 99 students who agreed, fewer students were from fourth year (25, 26.8%) and final year (27, 31.3 %) compared to third year (47,45.6%).

Table III shows the predicted probability, adjusted odds ratios and 95% confidence intervals from the binomial logistic regression analysis of the association between the response "agree" to the 9 general statements and "yes" response to the question assessing willingness to volunteer. Those who agreed with the statement "Students who volunteer should only be allowed to provide indirect care via telemedicine" were significantly less likely to say yes to volunteering (odds ratio=0.333, *p*=0.001, <0.05) compared to those who disagreed. Students who agreed with the statement "Volunteering for assistance in healthcare, whether online or in person, is a wise decision" were significantly more likely to say yes to volunteering compared to those who disagreed (odds ratio=3.295, *p*=0.000, <0.05). Most students (94.7%) agreed that pandemic management training should be incorporated into the syllabus irrespective of whether they wanted to volunteer or not (*p*=0.304,>0.05).

Table III: Binary Logistic Regression Analysis for The Association Between Response "Agree" and Response "Yes" To Volunteering

Statement	Willing to volunteer		*p-value*	Odds ratio	Confidence intervals
	Yes/ N(%)	No/ N(%)			
1. No compulsion in volunteerism			0.403	1.488	0.586-3.779
Agree	121(89.6)	134(91.2)			
Disagree	14(10.4)	13(8.8)			
2. No compulsion in tele-volunteerism			0.538	1.290	0.574-2.898
Agree	119(88.1)	128(87.1)			
Disagree	16(11.9)	19(12.9)			
3. Early graduation of final year			0.840	0.945	0.542-1.645
Agree	48(35.6)	51(34.7)			
Disagree	87(64.4)	96(65.3)			
4. Allow only telemedicine volunteerism			0.001	0.333	0.178-0.622
Agree	82(60.7)	122(83.0)			
Disagree	53(39.3)	25(17.0)			
5. Students are not workers			0.118	0.658	0.390-1.113
Agree	54(40.0)	84(57.1)			
Disagree	81(60.0)	63(42.9)			
6. Connect students with clinical work			0.168	1.544	0.832-2.866
Agree	106(78.5)	88(59.9)			
Disagree	29(21.5)	59(40.1)			
7. Volunteering is a wise decision			0.000	3.295	1.841-5.897
Agree	102(75.6)	63(42.9)			
Disagree	33(24.4)	84(57.1)			
8. Academic incentives for volunteers			0.725	1.109	0.624-1.970
Agree	90(66.7)	88(59.9)			
Disagree	45(33.3)	59(40.1)			
9. Pandemic management studies			0.304	0.549	0.175-1.722
Agree	128(94.8)	139(94.6)			
Disagree	7(5.2)	8(5.4)			

Discussion

Our study showed that more students were unwilling to volunteer during the pandemic (52.1%) and fewer were willing to volunteer (47.9%). Similar to our results, an Indonesian study reported that around 48.8% of the students were willing to volunteer.[12] In contrast to our results, many studies such as surveys from Uganda (80%), China (86%) and Germany (70%) reported that more students were willing to volunteer. [13,14,15] The varying government pandemic response and the severity of the pandemic at the time of data collection could be responsible for the global differences in the willingness to volunteer.

Among the students interested in volunteering, the majority wanted to assist with telemedicine services and only 21.5% of participants were interested in providing direct care to COVID-19 patients. This is similar to results from China and Nigeria where medical activities such as administrative work and telemedicine were more popular among students than direct care of patients.[14,16] The most common reason given by students for willingness to volunteer was an ethical inclination to help the frontline workforce during this pandemic. Similar surveys from Indonesia, China, and Brazil reported this sense of duty to be a major driving force behind the willingness to volunteer.[12,14,17]

Students did not wish to volunteer for three main reasons: the fear of being viral transmission vectors to their families, depleting personal protective equipment (PPE) that more experienced staff needed, and contracting COVID-19 themselves. This is in accordance with results from Indonesia and Poland where the fear of transmission of COVID-19 to relatives and contraction of the disease were major barriers towards considering volunteerism.[12,19] Their fears are justified as even graduate doctors faced severe PPE shortages during the pandemic.[20] Nearly 95% of the students agreed that pandemic management training should be incorporated into the syllabus which is the same percentage reported in a similar Nigerian study.[16]Since medical students are future clinicians, early incorporation of pandemic management in their curriculum is imperative to create a workforce that is well prepared for the current and potential future pandemic emergencies.[21]

The limitations of our study were the possible selection bias that occurred while sampling and that it only included participants from a single public-sector medical university. Studies that include both public and private sector medical institutes throughout the country should be conducted to obtain a more representative sample of medical students. Further studies should investigate the effect of important variables such as family income, reliance on information sources, previous volunteering activities, and knowledge about the infection and infection control measures on willingness to volunteer.

Conclusion

The majority of medical students were unwilling to volunteer to assist the frontline doctors during the COVID-19 pandemic.

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CONFLICT OF INTEREST

Authors declared no conflicts of Interest.

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DATA SHARING STATMENT

The data that support the findings of this study are available from the corresponding author upon request.