

Understanding the Motivations and Fears Towards COVID-19 Pandemic Duty among Undergraduate Medical Students of Largest City in Gujarat

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Abstract

Background: COVID-19, which began in Wuhan in December 2019 and became a global pandemic by March 2020, severely strained healthcare systems. In response, the Indian government deployed medical students as COVID-19 assistants to address the healthcare worker shortage. In Gujarat, 5,500 medical students were trained and assigned to public health facilities. This study investigates the motivations and fears of these students to guide future public health emergency protocols.

Methods: This descriptive cross-sectional study involved 1,660 medical students who participated in COVID-19 duties. Data on their fears and motivations were collected using a pretested questionnaire. Statistical analyses were conducted with IBM SPSS, utilizing descriptive statistics and independent t-tests, with significance set at $p < 0.05$.

Results: The top fears reported by medical students before pre-placement training were contracting COVID-19 (74.33%) and transmitting it to family members (62.99%). The main motivational factor for joining duty was the opportunity to become part of the healthcare workforce (mean 3.88 ± 0.86), followed by viewing volunteering as a learning opportunity (mean 3.82 ± 0.94) and feeling obliged as future doctors (mean 3.71 ± 0.97). There is a statistically significant difference in the motives related to fear of joining duty, including feeling obliged as future doctors, viewing it as a learning opportunity, wanting to be part of the healthcare workforce, responding to doctor shortages, the desire to participate in a historic event, family encouragement, and the decision to join only if forced ($p < 0.05$).

Conclusions: This study finds that while intrinsic motivations like professional integration and learning opportunities were strong, fears of personal and familial health risks also influenced participation. Despite

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these fears, students showed significant commitment, emphasizing the need for targeted support to balance psychological concerns with professional development during public health crises.

Keywords: COVID-19 pandemic, Fears, Motivations, Medical students

Introduction

Coronavirus disease 2019 (COVID-19) is an acute respiratory disease that emerged in Wuhan in December 2019 and rapidly spread to multiple continents within three months.¹ On March 10, 2020, there were over 118,000 COVID-19 cases and 4,291 deaths worldwide. Consequently, on March 11, 2020, the World Health Organization (WHO) declared it a pandemic². The rapid spread of the pandemic led to an acute shortage of healthcare personnel, medical facilities, and equipment in developed and developing countries. Following the Spanish flu (1918) and World War II (1939), the COVID-19 pandemic marked the third instance when governments turned to medical students for assistance in managing a crisis³.

During the COVID-19 pandemic in India, a shortage of healthcare workers prompted the Ministry of Health and Family Welfare and the National Medical Council to issue guidelines for medical students and interns to assist under faculty supervision after pre-placement training³. In Gujarat, during the first wave (July to November 2020) and second wave (March to June 2021) of the COVID-19 pandemic, 5,500 2nd and 3rd-year undergraduate medical students from all 30 government and private medical colleges were trained and deployed as COVID sahayaks (assistants) at primary/public health care facilities under the guidance of their college's community medicine department^{4,5,6}.

Although research on the psychological impact and professional challenges faced by medical students during the COVID-19 pandemic is increasing globally, studies focusing specifically on the motivations and fears of Indian medical students are limited. UK research revealed that medical students were driven by professional responsibility and altruism but struggled with anxiety over insufficient training and protective gear. European studies highlighted the role of government and institutional support in students' decisions to participate in COVID-19 duties.^{7,8,9} Global studies have examined intrinsic (personal satisfaction, professional growth) and extrinsic

(societal expectations, career prospects) motivations. Research from Western countries, including the US and Italy, revealed that medical students feared contracting COVID-19, spreading it to loved ones, and lacking adequate protection.^{10,11} Unlike in the US and Europe, where student autonomy is higher, Indian medical students may have faced family and societal pressure to join frontline duties, despite fear or unpreparedness^{12,13}. Studies from Germany and Spain have highlighted how government policies, institutional support, and mental health resources helped reduce fears and motivate students¹⁴. This study aims to understand students' motivations and fears regarding COVID-19 duty, providing an ethical framework for their involvement and helping to shape future crisis guidelines.

Method

This descriptive cross-sectional study was conducted in five medical colleges in Ahmedabad – BJ Medical College, NHL, AMC MET, GCS, and GMERS Sola – to evaluate medical students' fear and motivation regarding COVID-19 emergency duty. Approval was obtained from the Institutional Ethics Committee at BJ Medical College (Ref. No. 252/2021). All students received pre-placement training in hand washing, PPE use, social distancing, wearing N-95 masks, patient communication, understanding assigned tasks, and using mobile software for patient data entry.

Sample size calculation

The sample size was determined based on the total number of eligible medical students available during the study period, rather than being pre-calculated through a power analysis. All 2nd and 3rd-year undergraduate medical students from five medical colleges who served in COVID-19 emergency healthcare duty from March to May 2021 were eligible. Out of 1942 students, 1660 who actively served as COVID sahayaks were included in the study. Those who did not serve due to comorbidities, or other reasons, or were absent during data collection were excluded.

This study used a census approach, including all eligible students, so power analysis was not applicable. This ensured the sample represented the entire cohort engaged in COVID-19 duty, maximizing data collection. While this method does not estimate effect size for hypothesis testing, it is suitable for the study's descriptive aims.

Data collection and analysis

A pretested, pre-designed proforma was used for data collection. Due to the lack of a validated questionnaire for this study's focus, a self-developed questionnaire was created based on relevant literature and expert consultations. The questionnaire addressed students' motivations and fears related to duty. A pilot study with a small group of representative medical students was conducted to ensure the questionnaire's clarity, relevance, and appropriateness. Feedback from this study led to revisions that improved its content and structure.

Content validity was ensured by obtaining feedback from medical education and public health experts who reviewed the questions for relevance, comprehensiveness, and clarity. Construct validity was assessed by correlating responses with expected trends based on existing studies of healthcare workers' pandemic experiences.

Gender, academic year, and place of residence were included in the proforma as independent variables. Fear before pre-placement training was assessed by asking about concerns such as contracting COVID-19, transmitting it to family members, detachment from academics, inadequate skills, and fear of death from the infection. A 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) measured motivations for joining duty. Motivation statements included feeling obliged as a future doctor, viewing it as a learning opportunity, wanting to join the healthcare workforce, being compelled to join, responding to doctor shortages, desiring to be part of a historic event, joining due to peers' involvement, encouragement from family, having a family member with COVID-19, and experiencing a family member's death from the virus.

The final version of the questionnaire was administered in hard copy during lectures, and the

responses were entered into Microsoft Excel 2019 for analysis. Data were analyzed using IBM SPSS software, calculating descriptive statistics such as frequency, mean, and standard deviation.

Likert scale analysis

The mean and standard deviation for each motivation statement were calculated to summarize response tendencies and variability among respondents. The mean represents the average response to each motivation statement, with a higher mean indicating stronger agreement and a lower mean indicating stronger disagreement. This approach helps assess how strongly students identified with each motivation for joining duty.

The standard deviation (SD) indicates response variability around the mean. A low SD suggests that responses are clustered closely around the mean, indicating consensus among students, while a high SD indicates a wider range of opinions or greater disagreement on that statement. This combination of mean and standard deviation offers insight into overall trends in students' motivations and the level of consensus or variability in their views.

An independent t-test was used for further comparisons, with statistical significance set at $p < 0.05$.

Results

Table 1: Demographic Characteristics of Medical Students(N=1660).

Characteristics	N (%)
Age in years (Mean \pm SD)	20.15 \pm 0.83
Gender	
Male	805 (48.49)
Female	855 (51.51)
Medical College	
BJMC	447 (26.93)
NHL	397 (23.92)
AMC MET	283 (17.04)
SOLA	306 (18.44)
GCS	227 (13.67)

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Academic year	
2 nd Year MBBS	896 (53.97)
3 rd Year MBBS	764 (46.03)
Place of residence	
Home	694 (41.81)
Hostel	966 (58.19)

Among 1,660 medical students, there is an almost equal gender distribution, with most residing in hostels during their duty (Table 1).

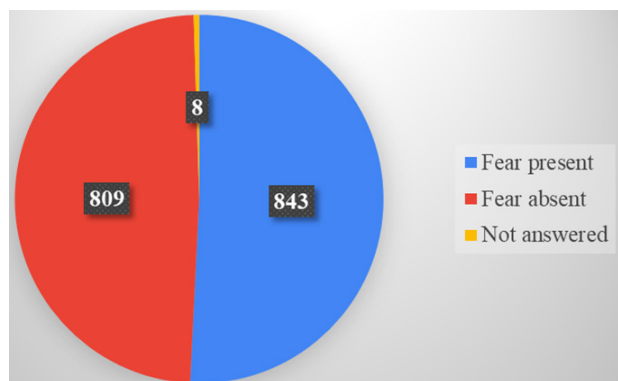


Figure 1: Fear for joining COVID-19 duty among medical students(N=1660).

Before pre-placement training, 50.78% of students reported fear of performing duty, 48.73% did not, and 0.49% gave no response (Figure 1).

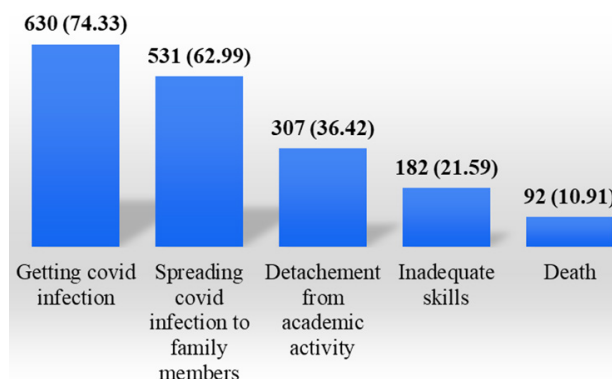


Figure 2: Nature of fear for joining COVID-19 duty among medical students(N=843).

Students who expressed fear before duty cited concerns about contracting the virus (74.33%) and transmitting it to family members (62.99%). Additionally, 10.91% feared death from the infection (Figure 2).

Table 2: Students' motivations for joining COVID-19 duty(N=1660).

Student's motivation	1	2	3	4	5	Mean ± SD
Obligated to perform duty as future doctor	63	84	463	715	335	3.71 ± 0.97
Learning opportunity as student	45	96	350	791	378	3.82 ± 0.94
Chance to become part of health care workforce / system	29	68	353	831	379	3.88 ± 0.86
Never had joined, if not forced	174	413	611	319	143	2.91 ± 1.09
Shortage of doctors so I should join	55	144	447	797	217	3.59 ± 0.94
Would like to be a part of historic event	66	133	440	728	293	3.63 ± 0.99
My colleague / friends are joining duty hence I have to join duty	247	587	511	246	69	2.58 ± 1.04
My family encourage me to join duty	151	322	579	461	147	3.08 ± 1.09
My family member(s) had covid infection hence I have to join duty	488	642	360	132	38	2.15 ± 1.01
My family member(s) died due to covid hence I have to join duty	778	512	260	81	29	1.84 ± 0.97

Students rated their motives for joining duty on a scale from 1 (strongly disagree) to 5 (strongly agree). The highest-rated reason was the opportunity to join the healthcare workforce (mean 3.88 ± 0.86), followed

by volunteering as a learning opportunity (mean 3.82 ± 0.94) and a sense of obligation as a future doctor (mean 3.71 ± 0.97) (Table 2).

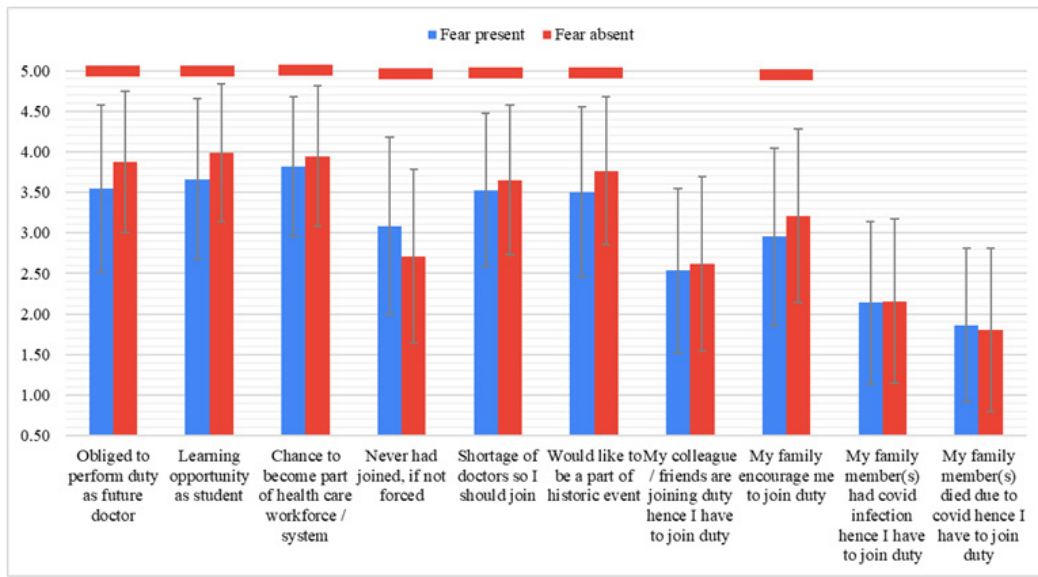


Figure 3: Medical students’ average rating of agreement about motives towards fear for joining COVID-19 duty(N=1660).

*Red brackets signify a statistically significant difference ($p < 0.05$) between those who experienced fear with those who did not.

Students give average ratings to 10 questions about motivation toward fear for duty. Likert scale with 1 representing strongly disagree and 5 representing strongly agree. Red brackets signify a statistically significant difference ($p < 0.05$) (Figure 3).

Discussion

This study was done in the largest city of Gujrat, Ahmedabad¹⁶. A total of 1,660 students from five medical colleges participated in the study, which aims to assess the motivational and fear factors influencing their participation in health teams during crises. No prior research has focused on these aspects among Indian medical students during COVID-19 duty.

The demographic analysis showed a balanced representation of age and gender, crucial for fostering diverse perspectives in medical education. Over half of the students resided in hostels during duties, suggesting that structured living arrangements offered stability and support during the pandemic. These findings highlight the role of demographic and environmental factors in shaping medical students’ experiences, especially during public health crises.

When informed of their COVID-19 duty, a slight majority of students reported fear, mainly about contracting the virus and transmitting it to their families, highlighting both personal and familial risks. One-tenth of students feared death from COVID-19, reflecting the serious emotional toll on healthcare trainees. These findings emphasize the need for institutional support to address such fears and ensure student well-being during public health emergencies.

The fear of contracting COVID-19 (74.33%) and transmitting it to family members (62.99%) among our respondents mirrors findings from a 2021 Jan Domaradzki and Dariusz Walkowiak study in Poland, where 65.5% of students were concerned for their loved ones. This shared anxiety highlights the universal impact of the pandemic on medical students, who are worried not only about their health but also their families’ safety¹⁷.

The analysis shows that students’ motivations for joining duty strongly align with professional and educational values. The top motivation was the opportunity to join the healthcare workforce (mean score: 3.88 ± 0.86), reflecting students’ strong desire to contribute during a critical time. A close second was viewing volunteering as a valuable learning experience (mean score: 3.82 ± 0.94), highlighting the educational benefits they saw in frontline work. The

perception of volunteering as a valuable learning opportunity (mean score: 3.82 ± 0.94) showed that students recognized the educational benefits of frontline work. Additionally, a strong sense of duty as future doctors (mean score: 3.71 ± 0.97) reflected their commitment to professional responsibility and ethics.

The motivations in our study align with Tiffany R. Bellomo's research on U.S. medical students during COVID-19. Our top motivation, joining the healthcare workforce (mean score: 3.88 ± 0.86), parallels Bellomo's finding that 67.6% of students volunteered in pandemic relief, although in non-patient-facing roles. Our findings that students valued learning opportunities (mean score: 3.82 ± 0.94) and felt a professional duty (mean score: 3.71 ± 0.97) align with Bellomo's observation that students, especially those interested in primary care, felt a strong obligation to serve during the pandemic. While our students were mainly driven by professional development and ethical duty, Bellomo's study found that concerns about risk to others, time commitment, and personal safety influenced those who chose not to volunteer. These differences highlight the need for tailored support and communication strategies that address medical trainees' motivations and concerns during public health crises¹⁸.

The motivations for joining duty reflected a strong desire to integrate into the healthcare workforce, gain valuable experience, and fulfill their obligation as future doctors, highlighting their commitment during the pandemic. These findings align with Patricia Tempski's study on Brazilian medical students, where a strong sense of duty, altruism, and the desire to enhance professional identity were key factors driving participation in COVID-19-related activities. Both studies emphasize the role of purpose and professional growth in motivating students to engage in pandemic relief efforts. While our study found these motivations were broadly shared, Tempski's research revealed gender differences, with males more likely to believe participation should be limited to interns or involve all students. This comparison highlights the universal yet nuanced motivations of medical students during the pandemic, shaped by cultural, educational, and individual factors⁷.

In our study, the main motivations for medical students to join duty were the opportunity to integrate into the healthcare workforce, gain valuable experience, and fulfill their duty as future doctors. These findings align with Marina Alves Martins Siqueira's study, which identified altruism (44%) and duty (37%) as key motivators for student participation in a COVID-19 Volunteering Program. However, Siqueira's research emphasized academic interests (19%) and the development of competencies like Scholar (36%), Collaborator (20%), and Professional (20%), highlighting a greater focus on acquiring specific professional skills. While both studies highlight altruism and duty as motivators, our study suggests a stronger emphasis on immediate integration into the healthcare system and learning opportunities, while Siqueira's study focuses on the long-term development of professional competencies in medical education. This comparison underscores the diverse yet complementary motivations driving medical student participation in pandemic-related activities across different contexts¹⁹.

Our study found that the main motivations for medical students to join COVID-19 duty were integrating into the healthcare workforce, gaining valuable experience, and a strong sense of duty as future doctors. These motivations align with Adebola Afolake Adejimi's study, where self-rated competence to work as a COVID-19 volunteer, good health, and the availability of PPE significantly increased the willingness to volunteer [OR: 6.5(95% CI: 3.61-11.54)]. While our study emphasizes intrinsic motivations like professional integration and learning, Adejimi's study highlights perceived competence and external factors like PPE availability. It also points to preferred volunteer roles, such as telemedicine (85.8%) and case management (21.7%), reflecting practical considerations. These findings suggest that while intrinsic motivations are key, the willingness to volunteer during a pandemic is also influenced by students' self-assessed preparedness and available resources²⁰.

Comparing motivations between medical students who experienced fear and those who didn't, the desire to join duty—due to obligation as future doctors, learning opportunities, and joining the healthcare workforce—was similarly strong in both

groups, with mean scores near 4.0. Interestingly, students who felt fear were slightly less motivated by joining a historic event or encouragement from others, suggesting that fear may temper some extrinsic motivations. The consistent motivation levels across both groups suggest that intrinsic professional and educational values strongly drove participation, regardless of fear. This highlights medical students' resilience and commitment to their roles, despite personal anxiety during the pandemic.

This study was limited to medical students from five colleges in Ahmedabad, which may not fully represent the broader student population in other regions. Therefore, the findings may not be generalizable.

Conclusion

The main motivators for students were a strong desire to integrate into the healthcare workforce, gain valuable learning experiences, and fulfill their professional duties. Despite notable fears about personal health risks and potentially transmitting COVID-19 to family, these intrinsic motivations remained strong, highlighting students' commitment to their roles. The study shows the significant impact of demographic and environmental factors on student experiences, indicating the need for targeted support to address psychological concerns and enhance professional development. These insights contribute to a deeper understanding of medical students' responses during public health crises.

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Ethical Clearance: This study was approved by the Institutional Ethics Committee at B.J Medical College & Civic Hospital, Ahmedabad (date: 22/11/2021; Ref No 252/2021)

Conflict of Interest: None

References

1. Coronavirus disease 2019 (COVID-19) Situation Report-94. Available at [http:// https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200423-sitrep-94-covid-19.pdf](http://https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200423-sitrep-94-covid-19.pdf) Accessed 27 August 2024.
2. WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020. Available at <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020> Accessed 27 August 2024.
3. MoHFW. Available at <https://mohfw.gov.in/> Accessed 27 August 2024.
4. COVID-19 Tracker | Gujarat. Available at <https://gujcovid19.gujarat.gov.in/> Accessed 13 November, 2021.
5. NMC planning to increase UG medical seats from 82,500 to 1 lakh | Ahmedabad News - Times of India. Available at <https://timesofindia.indiatimes.com/city/ahmedabad/nmc-planning-to-increase-ug-medical-seats-from-82k-to-1l/> Accessed 27 August 2024.
6. Category:Medical colleges in Gujarat - Wikipedia. Available at [https://en.wikipedia.org/wiki/Category: Medical_colleges_in_Gujarat](https://en.wikipedia.org/wiki/Category:Medical_colleges_in_Gujarat) Accessed 27 August 2024.
7. Tempski P, Arantes-Costa FM, Kobayasi R, Siqueira MAM, Torsani MB, Amaro BQRC, et al. Medical students' perceptions and motivations during the COVID-19 pandemic. Vaingankar JA, editor. PLOS ONE. 2021 Mar 17;16(3):e0248627.
8. Tawse J, Demou E. Qualitative study to explore UK medical students' and junior doctors' experiences of occupational stress and mental health during the COVID-19 pandemic. *BMJ Open*. 2022 Dec;12(12):e065639.
9. Srivastava A, Srivastava S, Upadhyay R, Gupta R, Jakhar K, Pandey R. Stressor Combat Strategies and Motivating Factors Among Health Care Service Providers During COVID-19 Pandemic. *Cureus*. 2021 Apr 27;
10. Wheeler DR, Chibbaro S, Karoutis I, Safa A, Tinterri B, Calgaro G, et al. A study investigating the knowledge and responses of Italian medical students to the COVID-19 pandemic. *Pathogens and Global Health*. 2021 Jan 31;115(4):250-7.
11. Sarzyńska K, Czwojdzinski E, Kuźniarski A, Rayad S, Piwowar A, Jankowska-Polańska B. Medical students' knowledge about COVID-19 and evaluation of the effectiveness of the applied preventive strategies. *Archives of Public Health*. 2022 Apr 14;80(1).
12. Stachteas P, Vlachopoulos N, Smyrnakis E. Deploying Medical Students During the COVID-19 Pandemic. *Medical Science Educator*. 2021 Aug 26;
13. Lima Ribeiro D, Pompei Sacardo D, Jaarsma D, de Carvalho-Filho MA. "Every day that I stay at

- home, it's another day blaming myself for not being at #Frontline"-Understanding medical students' sacrifices during COVID-19 Pandemic. *Advances in Health Sciences Education*. 2022 Dec 12;
14. Allen R, Kannangara C, Vyas M, Carson J. European university students' mental health during Covid-19: Exploring attitudes towards Covid-19 and governmental response. *Current Psychology*. 2022 Feb 11;
 15. Sullivan GM, Artino AR. Analyzing and Interpreting Data from Likert-Type Scales. *Journal of Graduate Medical Education* [Internet]. 2013 Dec 5;5(4):541-2.
 16. History, Ahmedabad district, Government of Gujarat, India. Available at <https://ahmedabad.nic.in/history/> Accessed 27 August 2024.
 17. Domaradzki J, Walkowiak D. Medical Students' Voluntary Service During the COVID-19 Pandemic in Poland. *Frontiers in Public Health*. 2021 Apr 13;9.
 18. Bellomo TR, Prasad S, Bhaumik D, Cartwright J, Zhang Y, Azzouz L, et al. Understanding motivations behind medical student involvement in COVID-19 pandemic relief efforts. *BMC Medical Education*. 2022 Dec 5;22(1).
 19. Siqueira MAM, Torsani MB, Gameiro GR, Chinelatto LA, Mikahil BC, Tempski PZ, et al. Medical students' participation in the Volunteering Program during the COVID-19 pandemic: a qualitative study about motivation and the development of new competencies. *BMC Medical Education*. 2022 Feb 19;22(1).
 20. Adejimi AA, Okunade KS, Odukoya OO, Roberts AA, Odugbemi BA, Osibogun A. Willingness and motivations towards volunteering during the COVID-19 pandemic: A cross-sectional survey among final year medical students in Lagos, Nigeria. *Dialogues in Health*. 2022 Dec;1:100038.