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Original Research Article

Survey on the awareness of COVID-19 virus infection among the health personnel of Sirajganj area, Bangladesh

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ABSTRACT

Background: The COVID-19 pandemic has posed significant challenges to healthcare systems worldwide, particularly in resource-limited settings. Understanding the awareness and practices of health personnel regarding COVID-19 is crucial for effective infection control and patient care. This study aims to assess the awareness of COVID-19 symptoms, complications, transmission methods, and preventive practices among health personnel in Sirajganj, Bangladesh.
Methods: This descriptive cross-sectional study involved 260 health personnel from Shaheed M. Monsur Ali Medical College and the 250 Beded Sheikh Fazilatunnesa Mujib General Hospital, Sirajganj. Data were collected through a semi-structured questionnaire, focusing on COVID-19 awareness and practices. The study employed purposive sampling and face-to-face interviews for data collection.
Results: The study found high awareness of COVID-19 symptoms, with 96.15% recognizing fever and 97.69% identifying loss of smell. Awareness of complications like respiratory failure (80.00%) and pneumonia (60.77%) was also notable. Preventive practices such as handwashing (98.08%) and mask-wearing (98.08%) were widely adhered to. However, 36.15% of participants reported being affected by COVID-19, indicating potential exposure risks.
Conclusions: The study reveals a high level of awareness and adherence to COVID-19 preventive measures among health personnel in Sirajganj. Despite this, the infection rate among participants highlights the need for enhanced protective measures and continuous education. These findings can inform strategies to strengthen healthcare responses to ongoing and future pandemics.

Keywords: Awareness, Bangladesh, COVID-19, Health Personnel, Prevention

INTRODUCTION

The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, has emerged as a global health crisis of unprecedented scale, affecting millions worldwide. Since its initial detection in Wuhan, China, in December 2019, COVID-19 has rapidly spread across continents, leading the World Health Organization (WHO) to declare it a pandemic in March 2020.[1] The global impact of this pandemic has been profound, with

significant implications for public health, economies, and societies. As of November 2021, the pandemic has resulted in over 27,934 deaths in Bangladesh alone, with a total of 1.57 million cases reported.[2] The presence of more transmissible variants, such as the Delta variant, has further complicated the situation.[3] In Bangladesh, the healthcare sector has faced immense challenges in managing the spread of the virus. The country's first COVID-19 case was confirmed on March 9, 2020, by the Institute of Epidemiology, Disease Control and Research (IEDCR).[4,5] Since then, the healthcare system has been under significant strain due to the rising number of cases. The pandemic has highlighted critical issues within the healthcare infrastructure, including resource limitations, exposure risks for health personnel, and the urgent need for accurate information and effective communication strategies.[6] The role of health personnel in managing and controlling the spread of COVID-19 cannot be overstated. Healthcare workers are at the forefront of the battle against the pandemic, providing essential services, often at great personal risk. Their awareness and understanding of the virus are crucial for effective infection control and patient care. Studies have shown that healthcare workers' knowledge, attitudes, and practices significantly impact the management of the pandemic.[7] In Bangladesh, the economic and health challenges posed by COVID-19 have been particularly severe, affecting the social, economic, and health sectors.[8] The government's response has focused on enhancing the recovery rate of COVID-19 patients and strengthening economic indicators.[9] However, the healthcare sector in Bangladesh has faced specific challenges, including the risk of exposure to the virus, inadequate resources, and the need for accurate and timely information. The outbreak of dengue amid the COVID-19 pandemic has further complicated the situation, creating a dual challenge for healthcare workers.[10] The co-infection of COVID-19 and dengue has left healthcare workers in a perplexing situation, with indistinguishable initial symptoms and an overflow of patients in hospitals.[11] This scenario underscores the importance of proper training and safety measures for healthcare workers, who are battling the coinfection without prior experience.[12] The pandemic has also had a significant impact on the mental health of healthcare workers, with increased stress and anxiety levels reported.[13] The need for mental health support and interventions has become increasingly evident, as healthcare workers continue to face the challenges of the pandemic. Additionally, the pandemic has highlighted the disparities in healthcare access and the importance of addressing these gaps to ensure equitable healthcare delivery.[14] In light of these challenges, there is a need to assess the awareness levels of health personnel regarding COVID-19 in Bangladesh. Studies have indicated gaps in the existing literature, particularly concerning the awareness levels among health personnel in the country.[7] Understanding these gaps is essential for developing targeted interventions and strategies to enhance the knowledge and preparedness of healthcare workers. This study aims to survey the awareness of COVID-19 virus infection among health personnel in the Sirajganj area of Bangladesh, focusing on their knowledge, attitudes, and practices related to the pandemic.

METHODS

This descriptive cross-sectional study was conducted at Shaheed M. Monsur Ali Medical College and the 250 Beded Sheikh Fazilatunnesa Mujib General Hospital, Sirajganj, Bangladesh. The study duration spanned from January 2023 to March 2023. A total of 260 health personnel were selected for the study using a purposive sampling technique. All personnel related to healthcare at the study place, as well as students interning at the hospital during the study period were included in the study. This approach was employed to ensure the inclusion of participants who were actively engaged in patient care during the COVID-19 pandemic, thereby providing relevant and insightful data. The sample size was determined based on the operational capacity of the research team and the expected availability of health personnel at the selected sites. The data collection instrument was a semi-structured questionnaire, comprising both open-ended and closed-ended questions. This mixed approach was designed to facilitate comprehensive data collection, allowing for both quantitative analysis and qualitative insights. The questionnaire covered a range of topics related to COVID-19, including knowledge of transmission routes, symptomatology, preventive measures, and the impact of the pandemic on healthcare practices and personal experiences. Data collection was conducted through face-to-face interviews. Students from Shaheed M. Monsur Ali Medical College were organized into several groups and assigned to the selected healthcare institutions. These groups conducted one-on-one interviews with the health personnel, ensuring a personalized approach and enhancing the reliability of the responses. The face-to-face method also allowed for immediate clarification of any ambiguities in the questionnaire responses. Ethical considerations were rigorously followed throughout the study. Informed consent was obtained from all participants, ensuring their voluntary participation and the confidentiality of their responses. The study adhered to the ethical guidelines and standards set forth by Shaheed M. Monsur Ali Medical College and the Sheikh Fazilatunnesa Mujib General Hospital. Additionally, all data collection procedures were conducted in compliance with the ethical norms and regulations governing research involving human subjects. SPSS V.22 was used for standard data analysis, and the findings were presented via tables and figures.

RESULTS

Table 1 presents the distribution of participants according to their sociodemographic characteristics. Out of the total 260 participants, 53.08% were male, while 46.92% were female. In terms of age distribution, the majority of

participants fell within the 18-25 age bracket, constituting 63.08% of the sample. The next largest age group was 26-35, representing 26.92% of the participants, followed by 36-45, which accounted for 10.00% of the sample. Regarding occupation, the participants comprised various healthcare roles. Doctors constituted 25.00% of the sample, while medical students made up the largest proportion at 36.92%. Nurses comprised 23.08% of the participants, whereas MATS (Medical Assistant Training School) students represented 10.00%. The remaining 5.00% consisted of other occupational categories within the healthcare sector.

Table 1: Distribution of participants by sociodemographic characteristics (n=260).

Variables	Frequency	Percentage
Gender		
Male	138	53.08
Female	122	46.92
Age		
18-25	164	63.08
26-35	70	26.92
36-45	26	10.00
Occupation		
Doctor	65	25.00
Medical student	96	36.92
Nurse	60	23.08
MATS student	26	10.00
Others	13	5.00

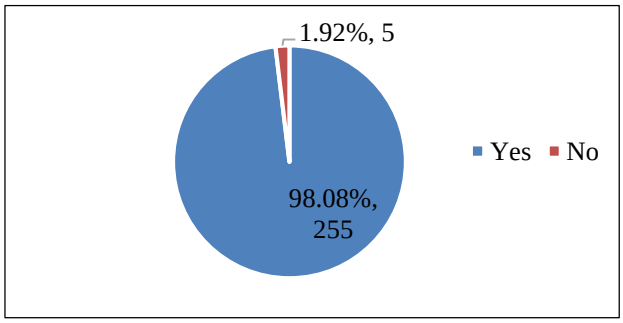

Figure 1: Distribution of respondents by practice of mask usage (n=260).

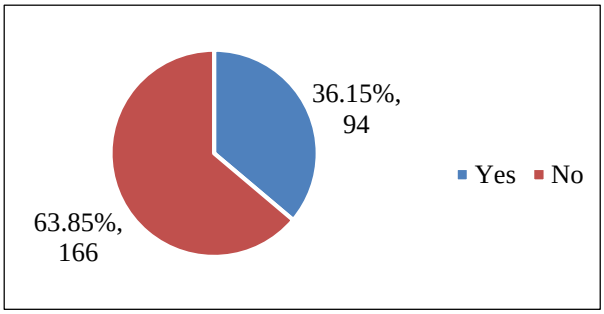

Figure 2: Distribution of respondents by record of COVID-19 infection (n=260).

Figure 1 illustrates the distribution of respondents based on their practice of mask usage. Among the 260 participants, 98.08% reported using masks, while only a small proportion, 1.92%, indicated not using masks.

In Figure 2, the distribution of respondents based on their record of COVID-19 infection is depicted. Out of the total 260 participants, 36.15% reported being affected by COVID-19, while the majority, accounting for 63.85%, reported no record of COVID-19 infection.

Table 2 presents the distribution of respondents' knowledge regarding COVID-19 symptoms. Among the 260 participants, a vast majority, specifically 96.15% of respondents identified fever as a symptom, while 97.69% recognized the loss of smell (anosmia) as indicative of the virus. Additionally, 92.69% of participants were aware of cough as a symptom, while 90.00% identified breathlessness as a sign of COVID-19. Sore throat was recognized by 82.69% of respondents as a symptom of the virus.

Table 2: Distribution of knowledge of COVID-19 symptoms among respondents (n=260).

Knowledge of symptoms	Frequency	Percentage
Fever	250	96.15
No smell	254	97.69
Cough	241	92.69
Breathlessness	234	90.00
Sore throat	215	82.69

Table 3 depicts the distribution of respondents' knowledge regarding COVID-19 complications. Among the 260 participants, respiratory failure was identified by 80.00% of respondents, indicating a high level of recognition among the surveyed health personnel. Body ache was recognized by 75.00% of participants as a potential complication of COVID-19, while pneumonia was acknowledged by 60.77% of respondents. Lung fibrosis was identified by 40.00% of participants as a potential complication, and blood coagulation issues were noted by 21.92% of respondents.

Table 3: Distribution of knowledge of COVID-19 complications among respondents (n=260).

Knowledge of complications	Frequency	Percentage
Respiratory Failure	208	80.00
Body ache	195	75.00
Pneumonia	158	60.77
Lung fibrosis	104	40.00
Blood coagulation	57	21.92

Table 4 presents the distribution of respondents' knowledge regarding COVID-19 transmission methods. Notably, 95.00% of respondents were aware that being

within 6 feet or closer to someone sneezing or coughing could transmit the virus. Similarly, 91.92% recognized person-to-person transmission as a mode of COVID-19 spread. Touching objects contaminated with the virus was acknowledged by 86.92% of participants as a transmission method. Furthermore, 75.00% of respondents were aware of airborne transmission, while 70.00% identified respiratory droplets as a means of COVID-19 transmission.

Table 4: Distribution of knowledge of COVID-19 transmission method among respondents (n=260).

Knowledge of Transmission media	Frequency	Percentage
6-feet or closer to someone sneezing or coughing	247	95.00
Person to person	239	91.92
Touching objects that have Covid virus on	226	86.92
Airborne transmission	195	75.00
Respiratory droplet	182	70.00

Table 5 displays the distribution of respondents' knowledge regarding COVID-19 transmission prevention practices. Notably, 98.08% of respondents were aware of the importance of handwashing as a preventive measure, with an equal proportion recognizing the significance of wearing masks. Covering one's mouth and nose with the elbow while sneezing, another key preventive practice, was acknowledged by 96.92% of participants. Social distancing, a crucial measure in reducing virus transmission, was recognized by 96.15% of respondents. Rubbing hands with alcohol-based sanitizer, while slightly less widely acknowledged, was still identified by a significant proportion, with 82.69% of participants demonstrating awareness of its importance in preventing COVID-19 transmission.

Table 5: Distribution of knowledge of COVID-19 transmission prevention practices among respondents (n=260).

Knowledge of transmission prevention method	Frequency	Percentage
Hand wash	255	98.08
Wear mask	255	98.08
Covering with elbow while sneezing	252	96.92
Social distancing	250	96.15
Rubbing hand with alcohol based sanitizer	215	82.69

Table 6 illustrates the distribution of respondents' practice of COVID-19 transmission prevention methods. 95.00% of respondents reported maintaining social distance as a preventive measure, indicating a high level of compliance among the surveyed health personnel. Additionally, 90.77% of participants reported using alcohol-based hand rub, while 80.00% stated that they washed their hands for at least 20 seconds, highlighting the importance of proper hand hygiene in preventing COVID-19 transmission. Routinely cleaning medical equipment, although slightly less widely practiced, was still reported by a considerable proportion of respondents, with 60.77% indicating compliance with this preventive measure.

Table 6: Distribution of practice of COVID-19 transmission prevention methods among respondents (n=260).

Variable	Frequency	Percentage
Maintaining social distance	247	95.00
Using alcohol based hand rub	236	90.77
Washing hand for 20 seconds	208	80.00
Routinely cleaning medical equipment	158	60.77

DISCUSSION

The current study's findings on the awareness of COVID-19 among health personnel in Sirajganj, Bangladesh, offer valuable insights when compared with existing literature. Our study's gender distribution, with a slight male predominance (53.08%), contrasts with Sobotka et al findings, where women diagnosed with COVID-19 outnumbered men among working-age people in Europe.[15] This discrepancy could be attributed to the specific demographics of the healthcare workforce in Bangladesh. The age distribution, predominantly within the 18-25 age bracket (63.08%), aligns with Afridi's study, highlighting the involvement of younger healthcare workers in frontline duties.[16] The diverse occupational distribution, including a significant proportion of medical students (36.92%), resonates with Nachtigall et al findings, emphasizing varied roles in

healthcare settings during the pandemic.[17] The COVID-19 infection rate among our respondents (36.15%) is notably higher than the 12.1% reported by Afridi et al suggesting increased exposure risks in the Sirajganj area.[2] The high awareness of fever (96.15%) and loss of smell (97.69%) in our study is consistent with Assefa and Gudeta's findings, where fever and cough were the most common symptoms reported.[18] The recognition of complications like respiratory failure (80.00%) and pneumonia (60.77%) aligns with Akram et al study, indicating preparedness among healthcare workers to identify severe COVID-19 cases.[19] Awareness of transmission through proximity to sneezing/coughing (95.00%) and person-to-person spread (91.92%) in our study was similar to the findings of other authors who reported low adherence to hand hygiene and personal protective equipment among health personnel.[20] The high practice of handwashing (98.08%) and mask-wearing (98.08%) aligns with Assefa et al emphasis on hand hygiene as a key preventive measure.[21] However, the lower adherence to using alcohol-based sanitizer (82.69%) compared to handwashing suggests a gap, as highlighted by Assefa and Gudeta.[18] The study by Al-Ghatam et al on electronic self-assessment of COVID-19 symptoms among hospital staff found sore throat as a frequently reported symptom, which is lower in our study (82.69%).[22] Bal et al assessment of clinical symptoms among healthcare workers with suspected COVID-19 reports similar findings to ours, with fever and cough being the most common symptoms.[23] Havervall et al examination of long-term symptoms among healthcare workers post-COVID-19 aligns with our study's findings on the awareness of complications like lung fibrosis (40.00%).[24] Chew et al study on the psychological outcomes and associated physical symptoms amongst healthcare workers during the COVID-19 outbreak provides an additional perspective, highlighting the physical and psychological impact of the pandemic on healthcare workers, which complements our findings on the high rate of COVID-19 infection among health personnel.[25]

This study has some limitations. The study was conducted in a single region with a small sample size. So, the results may not represent the whole community.

CONCLUSION

The study conducted among health personnel in Sirajganj, Bangladesh, has revealed a commendable level of awareness regarding COVID-19 symptoms, complications, transmission methods, and preventive practices. The findings indicate that 96.15% of participants were aware of fever as a symptom, and 97.69% recognized the loss of smell, aligning with global awareness trends. The high adherence to preventive measures, such as handwashing (98.08%) and mask-wearing (98.08%), reflects a strong commitment to infection control practices. However, the reported COVID-19 infection rate of 36.15% among participants suggests the need for ongoing vigilance and enhancement of protective measures. This study underscores the importance of continuous education and training for health personnel, emphasizing the need for robust health infrastructure and resources to effectively combat the pandemic. The insights gained from this research can inform future strategies to strengthen the healthcare system's response to COVID-19 and other emerging infectious diseases.

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