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Knowledge, willingness to provide service and preparedness for monkeypox infection among medical practitioners working in Bangladesh: a multicentred cross-sectional study

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ABSTRACT

Background The resurfaced zoonotic disease, Monkeypox, has become a global public health concern recently. Therefore, the objective of this study was to assess the current knowledge, willingness to provide service during an outbreak and preparedness about human monkeypox among medical practitioners in Bangladesh.

Methods This cross-sectional study was conducted among registered physicians at the three medical college hospitals in Dhaka, Bangladesh. Knowledge about monkeypox was assessed by 20 questions, collected through a self-answered paper-based structured questionnaire. Good knowledge was defined by 70% of correct responses among the asked questions. Willingness and preparedness to treat during the monkeypox outbreak were also assessed. Multivariate logistic regression analysis was performed to assess the predictors of good knowledge of monkeypox infection. Statistical analysis was done with SPSS V.25.0.

Result Out of 385 physicians, two-thirds (63%) were male, and between 31 and 50 years of age (58%). A majority (91.4%) knew monkeypox is transmitted human-to-human, followed by sexual (55.1%) and vertical transmission (34.8%), but only 19.5% were aware of vaccine availability. Overall, about half of the respondents (57%) showed a good knowledge of monkeypox and the remainder (43%) had poor knowledge. Older age, higher education and having a higher job designation were found to be associated with good knowledge. However, only 30.1% expressed willingness to provide care, and just 22.3% believed their hospitals were prepared for a potential outbreak.

Conclusion The present study highlighted that physicians in Bangladesh possess a relatively good level of knowledge, with a lack of practical preparedness and willingness to serve in managing monkeypox cases during an outbreak.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Monkeypox virus was first identified in 1958 during an outbreak among Asian monkeys, particularly *Macaca fascicularis*, with the first human case reported in the Democratic Republic of the Congo in 1970. Though it remained endemic there, it became a global concern during the 2003 US outbreak. In 2022, the WHO noted a rise in monkeypox cases across seven African countries, with about 1400 cases reported, higher than in the previous two decades. Additionally, 18 844 cases were reported in 29 European countries that year. Since then, the outbreak has continued, with over 94 000 cases reported globally.

WHAT THIS STUDY ADDS

⇒ The sudden emergence of COVID-19 has already taught us the importance of knowledge and preparedness for any new or old resurfaced organism, it is significant for healthcare workers to be well-informed and prepared to manage monkeypox cases effectively.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The findings may help to show the gap in knowledge, preparedness and willingness to face an outbreak and to guide policy formulations and strategies in handling future outbreaks in Bangladesh.

INTRODUCTION

The emergence of the monkeypox virus (MPXV), a member of the Poxviridae family, has raised new global concerns as it spreads to several nations.[1] While it typically leads to minor outbreaks or endemic situations, there is growing apprehension that it could spark a major epidemic if there is a lack of preparedness among the public and healthcare

sectors.[2] This new outbreak is particularly concerning because it adds stress to healthcare systems that are already overwhelmed by COVID-19, complicating the global health situation even further and requiring more resources and attention.

Although the origin of the disease is unknown, African rodents and nonhuman primates (eg, monkeys) may host the virus and transmit it to humans.[3] MPXV was initially identified in 1958 amid an outbreak among Asian monkeys, particularly *Macaca fascicularis*,[4] with the first human case reported in the Democratic Republic of the Congo in 1970. Despite remaining endemic in the country, it escalated to a global health security concern during the 2003 outbreak in the USA.[5 6] In 2022, the WHO recorded an increase in monkeypox cases across seven African countries, with approximately 1400 cases (suspected 1392 and confirmed 44), a figure higher than the previous two decades.[7 8] Moreover, 18844 cases were reported across 29 European countries within the same year.[9] Since then, the outbreak has persisted, with reported cases exceeding 94 thousand worldwide.[10]

The fatality rate of monkeypox ranges from 0% to 11% across the general population, with a notably higher incidence among young children.[11] Monkeypox transmission occurs through three primary modes: from animals to humans, human to human and through contact with materials/substances containing the virus.[11–13] The virus can be transmitted from infected animals through skin abrasions, blood, bodily fluids or pox lesions.[11 13] Additionally, human to human transmission can occur through direct contact with lesions or via airborne droplets from coughs and sneezes.[11] Common symptoms of monkeypox include fever, headache, muscle and back pain, swollen lymph nodes, chills, fatigue and rash.[11] While recent outbreaks have predominantly presented with mild symptoms, the virus can cause severe illness in specific demographics such as young children, pregnant women and immunocompromised individuals.[11] Although there is no specific therapy for monkeypox, antiviral medications and smallpox vaccinations could be beneficial.[14] Isolating infected patients or animals, practicing hand hygiene after close contact with infected individuals, and avoiding contact with infected animals or contaminated materials are some of the recommended preventive measures by the Centre's for Disease Control and Prevention to curb the spread of monkeypox, particularly in unaffected areas.[14]

Although no case has been identified in Bangladesh, however, the country is surrounded by India, where multiple cases have been identified in recent times.[14] Ensuring that healthcare professionals are equipped with the necessary skills to recognise and manage cases of monkeypox effectively is essential for surveillance systems. Specifically, it is vital for doctors to have a comprehensive understanding of the clinical features of monkeypox to promptly identify, report and treat new cases. Several studies have highlighted a significant lack of understanding of monkeypox among healthcare professionals, which could hinder an effective response to potential outbreaks.[12 15 16] The sudden emergence of COVID-19 has already taught us the importance of knowledge and preparedness for any new or old resurfaced organism; it is significant for healthcare workers to be well-informed and prepared to manage monkeypox cases effectively. Consequently, this study aimed to evaluate the knowledge, willingness to provide services and preparedness of medical practitioners regarding monkeypox outbreaks at a tertiary care hospital in Bangladesh.

MATERIALS AND METHODS

The conceptual framework guiding this study is based on current knowledge on the topic (figure 1). This descriptive conceptual framework outlines the systematic assessment of knowledge, willingness to provide service during an outbreak and preparedness concerning human monkeypox among medical practitioners in Bangladesh. The theoretical framework is drawn to understand perceived knowledge, as well as to analyse intentions to serve. The variables include basic knowledge, training specifics related to monkeypox and outcomes such as knowledge levels, willingness and preparedness. The study seeks to uncover insights into practitioners' perspectives and practices regarding monkeypox management, thereby informing targeted interventions and enhancing overall outbreak response capabilities.

Study design and study place

This descriptive cross-sectional study was conducted at three tertiary care hospitals in Dhaka: Dhaka Medical College and Hospital, Sir Salimullah Medical College and Mitford Hospital, and Mugda Medical College Hospital. In Bangladesh, healthcare services are structured into three levels: primary, secondary and tertiary care. While primary and secondary care facilities provide general medical needs and basic treatments, tertiary care hospitals handle more complex and severe cases, hence, registered physicians are more available in tertiary care hospitals. Tertiary care hospitals were selected for this study because they represent the highest-level medical facilities in Bangladesh, providing specialised care and advanced diagnostic services while serving as referral centres for complex cases. These academic centres collectively accommodate over 4000 patients at a time and are staffed with registered physicians, including trainees and honorary medical officers, making them an ideal setting to assess the knowledge, willingness to provide services and preparedness for managing emerging infections like monkeypox. Dhaka, being the hub of the country's educational and healthcare systems, plays a critical role in disseminating medical knowledge. Physicians in Dhaka are often the first to receive information and training on new or emerging diseases, such as monkeypox, and their awareness typically reflects the overall readiness of healthcare professionals nationwide. As such, doctors working

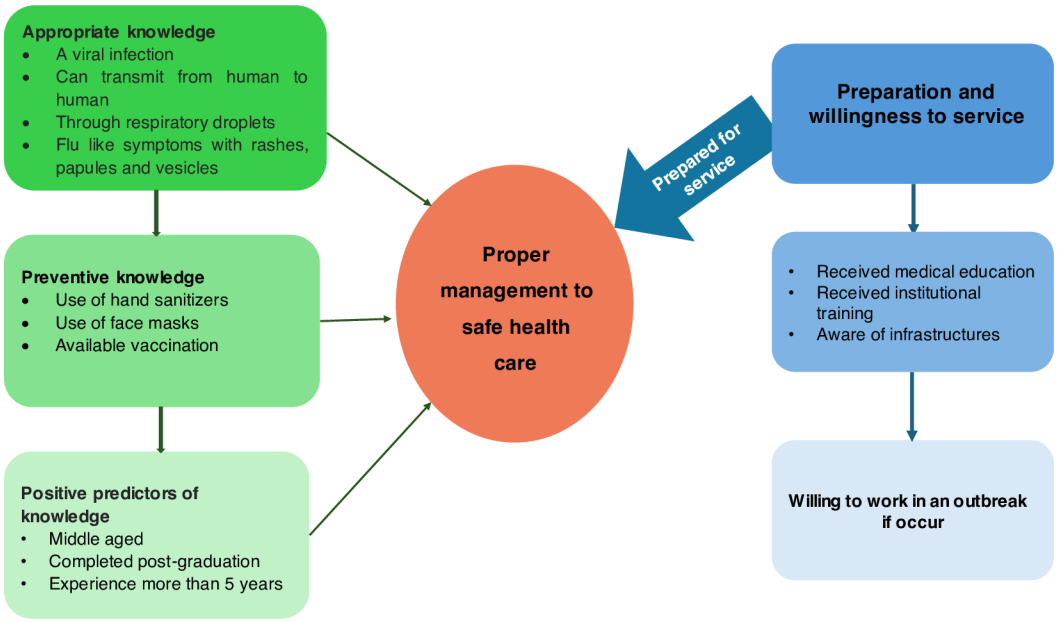

Figure 1 Conceptual framework of knowledge and preparedness among medical practitioners.

in tertiary care hospitals in Dhaka serve as representatives of the country's medical practitioners, providing valuable insights into the state of preparedness for monkeypox infection across Bangladesh.

Study sample and sampling technique

The study enrolled physicians from almost 31 hospital departments who had a minimum work tenure of 6 months, using a convenient sampling technique. The study encompassed intern doctors, honorary medical officers (postgraduate trainees), MD/MS resident students, consultants and medical/emergency-medical officers from both indoor and outpatient departments. However, physicians with less than 6 months of service, registered pharmacists, nurses and other healthcare professionals such as midwives, laboratory technicians, healthcare assistants and administrative staff were excluded from the study. Data collection took place between August 2022 and November 2022.

The appropriate sample size was calculated by using the formula: z^2pq/d^2. Based on the assumption that 50% of physicians had good knowledge regarding monkeypox with a 5% margin of error and a CI of 95%, the sample size was calculated. Finally, a total of 385 were included in this study after informed written consent.

Study procedure

Data were collected by face-to-face interview with the help of a structured questionnaire in English. At the beginning of the interview, the purpose and importance of the study was explained to each respondent. The questionnaire consisted of four sections: (1) demographic profile and professional background: focusing on age, gender, education, current role and experience; (2) knowledge of monkeypox: assessing physician's understanding of its epidemiology, clinical features and management; (3) preparedness for monkeypox: assessing the readiness to handle potential cases; and (4) willingness to serve as healthcare providers during an outbreak. For the assessment of knowledge regarding human monkeypox, 20 questions were constructed based on a thorough literature search and previously published articles.[15 17] Each affirmative/correct response was scored '1', and each negative response was scored '0'. Therefore, the maximum score was '20', and the minimum score '0', higher scores indicated better knowledge about monkeypox.

Prior to final data collection, the questionnaire underwent a pilot test involving 15 physicians, whose responses were excluded from the dataset. The majority (13 out of 15) reported no issues with question clarity, understanding or relevance. Data collection was conducted by trained medical professionals or clinical researchers, all of whom were trained prior to data collection.

Data analysis

Descriptive statistics were completed relating to respondent's characteristics which were expressed as frequencies and percentages for categorical variables and means and SD for continuous variables. Levels of knowledge were dichotomised into good and poor based on modified Bloom's cut-off points: 70% of the total score (ie, if a participant answered correctly 14 out of the total 20 questions).[18 19] Univariate and multivariate binary logistic regression analysis was employed to determine the factors associated with good knowledge score. To examine factors affecting medication adherence, a multivariate logistic regression analysis was on a univariate logistic regression analysis will be entered into a binary logistic regression model for multivariate analysis. Data was analysed using the SPSS V.25. All analyses were two-sided and a p value

<0.05 was considered statistically significant in the analysis.

RESULTS

Sociodemographic and professional characteristics

This study comprised 385 participants, of which two-thirds (63%) were male. The majority of the respondents (57.7%) were between 31 and 50 years of age. Approximately 69.9% of the respondents had more than 5 years of medical practice experience and more than half were postgraduate trainees (56.9%). Almost half of the respondents (60%) reported that their primary source of information about monkeypox was the internet (54.5%). Other relevant sources were medical education (31.4%), webinars/conferences (29.4%) and colleagues (25.5%). Medical journals (19.0%), printed media (12.2%) and television/radio (10.9%) were less frequently used, highlighting a preference for digital and professional sources over traditional media (table 1).

Table 1 Demographics and professional background of physicians (n=385)

Characteristics	Frequency f=385	Percentage (%)
Age groups		
20–30 years	161	41.8
31–50 years	224	58.2
Gender		
Male	243	63.1
Female	142	36.9
Education level		
MBBS	62	16.1
Post-graduation trainee	211	54.8
Post-graduation completed	66	17.1
Current job level		
Intern and junior doctors	90	(23.4)
Post-graduate trainee	219	56.9
Consultants and above	76	19.7
Medical practice experience (years)		
<5 years	116	30.1
≥5 years	269	69.9
Ever heard about monkeypox		
Yes	330	85.7
Never	55	14.3
Received information about human monkeypox during medical education		
Yes	235	61.0
No	149	38.7
Sources of knowledge regarding monkeypox		
Internet	210	54.5
Webinar/conference	113	29.4
Medical education	121	31.4
Colleagues	98	25.5
Medical journals	73	19.0
Printed media	47	12.2
Television and radio	42	10.9

Knowledge of monkeypox among physicians, preparedness and willingness to serve during the monkeypox outbreak

The assessment of knowledge score, preparedness and willingness to serve regarding monkeypox is summarised in table 2. The table highlights participants' knowledge, preparedness and willingness concerning monkeypox. Over half (57%) displayed good knowledge (score ≥14), with an average score of 13.05±2.89. In terms of preparedness, 95.8% adhered to hand-washing practices, and 92.7% had access to hand sanitisers. However, fewer participants reported adequate availability of surgical masks (80.5%), gloves (62.9%), operational gowns (33%), goggles (6.5%) or antivirals at their workplace (11.9%). Regarding training, 64.6% received medical education on monkeypox, but only 6.2% underwent institutional training. Furthermore, only 22.3% of hospitals had plans to manage an outbreak. The willingness to engage in outbreak response was moderate, with 30.1% willing to join a response team and 29.4% ready to work in isolation wards, indicating the need for improved readiness and motivation.

Furthermore, the majority (96.1%) of the participants knew that monkeypox is a viral infection. Regarding transmission methods, most of the physicians knew it can easily be transmitted from human to human (91.4%), animal to human (90.6%), from skin lesions of infected persons (90.4%) and by respiratory droplets (72.7%). However, only 34.8% and 55.1% of the physicians knew monkeypox cannot be transmitted by vertical and sexual transmission, respectively. Moreover, most of the physicians had some understanding of its symptoms and disease presentation. A total of 54.5% of the physicians knew lymphadenopathy is one clinical sign or symptom that could be used to differentiate monkeypox and smallpox cases and only 10.4% of them knew diarrhoea is not a sign or symptom of monkeypox. Regarding the knowledge of physicians concerning the management of monkeypox, the majority of them knew the option to use paracetamol on patients who are symptomatic (95.8%), and 67.8% and 23.9% knew that antibiotics and antiviral drugs are not required to treat monkeypox, respectively. Only 19.5% of the physicians knew about the availability of vaccines for monkeypox. The knowledge assessment components for monkeypox are outlined in online supplemental file 1.

Factors associated with good monkeypox knowledge score

The table highlights the relationship between respondents' characteristics and their knowledge regarding monkeypox infection (table 3). The effect

Table 2 Respondent's preparedness and willingness to serve during outbreak

Characteristics	Frequency (f)	Percentage (%)
Knowledge score among participants		
Good knowledge (≥14)	220	57
Poor knowledge (<14)	165	43
Mean knowledge score, mean±SD	13.05±2.89	
Participants prepared with the presence of all clinical measures at work	**Yes f (%)**	**No f (%)**
Hand washing practice	369 (95.8)	16 (4.2)
Availability of hand sanitiser	357 (92.7)	28 (7.3)
Adequate surgical masks	310 (80.5)	75 (19.5)
Adequate hand gloves	242 (62.9)	143 (37.1)
Adequate gown for operation	127 (33)	258 (67.0)
Adequate goggles	25 (6.5)	355 (92.2)
Available anti-viral at work	46 (11.9)	333 (86.5)
Received medical education on monkeypox	157 (64.6)	81 (57.0)
Received institutional training on monkeypox	24 (6.2) (7.0)	361 (93.8)
Hospital has plan to face the outbreak	86 (22.3)	299 (77.7)
Willingness to work as healthcare provider if an outbreak of monkeypox occurs		
Willing to work as a part of monkeypox response team	116 (30.1)	269 (69.9)
Willing to undertake duty in monkeypox isolation ward	113 (29.4)	272 (70.6)

size, indicated by Phi and Cramer's V values, evaluates the relationship between respondents' characteristics and having good knowledge. A moderate association is observed with age (p<0.001), where respondents aged 31–50 years demonstrated better knowledge compared with those aged 20–30 years. A small but statistically significant association exists with medical practice experience, suggesting that respondents with ≥5 years of experience are more likely to have good knowledge. However, there was no significant

Table 3 Association between having good knowledge and respondent's characteristics (n=385)

Respondent's characteristics	Having good knowledge		Phi and Cramer's V value	P value*
	Yes (n=220) f (%)	No (n=165) f (%)		
Age (in years)			0.268	<0.001
20–30	74 (33.6%)	100 (60.5%)		
31–50	146 (66.4%)	65 (39.4%)		
Gender			0.031	0.542
Male	136 (61.8%)	107 (64.8%)		
Female	84 (38.2%)	58 (35.2%)		
Education level			0.020	0.928
MBBS	37 (16.8%)	28 (17.0%)		
Post-graduation trainee	130 (59.1%)	100 (60.6%)		
Post-graduation completed	53 (24.1%)	37 (22.4%)		
Current position			0.020	0.928
Intern and junior doctors	37 (16.8%)	28 (17.0%)		
Post-graduate trainee	130 (59.1%)	100 (60.6%)		
Consultant and above	53 (24.1%)	37 (22.4%)		
Medical practice experience (years)			0.164	0.001
<5 years	53 (24.1%)	65 (39.4%)		
≥5 years	167 (75.9%)	100 (60.6%)		

*P value was determined by Phi and Cramer's V test.

Table 4 Univariate and multivariate logistic regression analysis showing predictors of knowledge about human monkeypox infection

Characteristics	Good knowledge* n=220 f (%)	Univariate		Multivariate	
		Crude OR (95% CI)	P value	Adjusted OR (95% CI)	P value
Age groups					
20–30 years	74 (45.4)	Ref		Ref	
31–50 years	146 (65.8)	2.31 (1.53 to 3.50)	**<0.001**	0.329 (0.215 to 0.503)	**<0.001**
Gender					
Female	84 (59.1)	Ref			
Male	136 (55.9)	0.88 (0.58 to 1.34)	0.542		
Education level					
MBBS	37 (41.1)	Ref		–	
Post-graduation trainee	130 (59.4)	1.06 (0.591.89)	0.954	–	
Post-graduation completed	53 (69.7)	2.30 (1.07 to 4.95)	0.807	–	
Current job level					
Intern and junior doctors	37 (41.1)	Ref		Ref	
Post-graduate trainee	130 (59.4)	2.09 (1.27 to 3.45)	**<0.001**	1.75 (1.04 to 2.95)	**<0.001**
Consultants and above	53 (69.7)	3.30 (1.73 to 6.30)	**<0.001**	2.27 (1.11 to 4.62)	**<0.001**
Medical practice experience (years)					
<5 years	53 (45.7)	Ref		Ref	
≥5 years	167 (62.1)	1.95 (1.25 to 3.02)	**<0.001**	0.49 (0.31 to 0.77)	**0.002**

Significant p values (<0.05) are shown in bold.

associations between gender, or current position with knowledge of monkeypox. These findings emphasise that age and experience are significant predictors of good knowledge.

Out of 385 physicians, 220 (57.1%) of them had good monkeypox knowledge scores. Multivariate analysis showed that older age (adjusted OR 1.89, 95% CI 1.19 to 2.30), having a higher job designation (being a post-graduate trainee: adjusted OR 1.75, 95% CI 1.04 to 2.95; being a consultant and above: adjusted OR 2.27, 95% CI 1.11 to 4.62) were significant factors associated with good knowledge regarding monkeypox among physicians (p<0.05) (table 4).

DISCUSSION

This study of 385 participants revealed that a significant proportion of physicians had good knowledge about monkeypox, yet only about one-third expressed willingness to work during a future outbreak. The majority of physicians correctly identified monkeypox as a viral infection and were aware of its transmission methods, particularly human-to-human and animal-to-human transmission. Webinars and medical education were the primary sources of information for most participants. Notably, age and medical experience were significant predictors of good knowledge, with older physicians and those in higher job positions demonstrating a stronger understanding of monkeypox.

To control any epidemic in the early stages, the knowledge and preparedness of healthcare organisations play a crucial role. Healthcare workers must be prepared to identify any outbreak in its early stages, initiate preventive measures, and isolate and manage those affected by the infection. However, lapses in this early control mechanism may result in the spread of infection and thus result in an epidemic. Our study has shown that over half of the doctors (57.1%) had a good understanding of monkeypox. This is similar to a previous study in Bangladesh that looked at university students (63.6%)[14] and higher than another study in Bangladesh that surveyed doctors using an online platform (31%).[20] Previous studies done among general practitioners in Indonesia[15] and Saudi Arabia[21] found that knowledge about monkeypox was not sufficient. Similarly, a comparative study between pharmacists and general practitioners revealed that both groups had good and comparable levels of knowledge about monkeypox infection.[22] In contrast, a study among nurses in Nigeria showed that 57.97% of participants had good knowledge, and an overwhelming 93.12% exhibited a positive attitude toward monkeypox disease.[17] The devastating death toll from COVID-19 might have motivated doctors to learn more about similar contagious diseases like monkeypox. This increased awareness could be a way to protect themselves, their families, and their patients and could demonstrate a strong commitment to preventing its spread. A global

survey of 399 physicians revealed high knowledge (87%) but moderate adherence to preventative measures (54%), with many citing disorganised public health policies and increased stress.[23] Studies among family physicians and healthcare professionals showed good knowledge and positive attitudes, influenced by personality traits, life satisfaction and workplace factors, but not demographics like age or gender.[23 24] In Bangladesh, 69% of physicians were willing to work during COVID-19, though barriers included family safety concerns, inadequate PPE and fear of infection.[25] Across studies, improving training, safety measures and coordinated public-private efforts were recommended to enhance preparedness and willingness to respond to pandemics effectively.[4 26]

According to the univariate and multivariate regression analysis, education and gender was not found to be associated with good knowledge. However, older age and years of experience of medical practice were found to be significantly associated with good knowledge of the participants. This finding is parallel with a previous study[20] but contrary to other studies in Asia.[7 19]A study conducted in Ohio, USA, found no significant association between demographic factors and clinicians' knowledge, attitudes and practices regarding monkeypox.[27] This is because as one gets older, they can amass more experience, increase their depth of knowledge and increase positivity in their attitude. Physicians with higher job designation have shown a significant higher prevalence of good knowledge about monkeypox, similar to a study in Turkey[28] and contrary to a systematic review that indicated more years of experience in medical practice were associated with lower knowledge levels.[29] In this case, it can be said that, because of long-term clinical practice, medical professionals gain expertise in diagnosing and treating prevalent illnesses, but they become less aware of new diseases or infections.

Moreover, our study revealed a low percentage of physicians were aware of their hospital's capacity to handle monkeypox cases, and even fewer had received institutional training on managing monkeypox cases. Furthermore, only 30.1% of doctors expressed willingness to serve as healthcare providers during a potential outbreak. This lack of preparedness is partially understandable. The pandemic of COVID-19 has shown the physicians the real scenario of our health system. This situation has affected their willingness towards involvement in a pandemic state again. Lack of proper supplies, unplanned management and lack of incentives for their work have hugely affected their outlook regarding any infectious outbreak, due to the COVID-19 situation. Also, monkeypox is a re-emerging disease, and Bangladesh has no documented history of outbreaks. Moreover, the curriculum for medical students in Bangladesh might prioritise common illnesses due to time constraints, leaving them less equipped to handle less frequent but potentially serious diseases like monkeypox.[18 19]

In addition, our findings have significant implications for clinical and public health practices. The identified gaps in physicians' knowledge and preparedness for monkeypox, coupled with the low willingness to serve during future outbreaks, highlight the urgent need for targeted interventions. Incorporating monkeypox-specific modules into medical education, organising practical workshops and providing institutional training can enhance healthcare professionals' readiness. Furthermore, addressing systemic challenges such as resource availability and incentive structures, which were exposed during the COVID-19 pandemic, can improve physicians' willingness to engage during outbreaks. These measures will strengthen outbreak response capabilities and ensure better preparedness for emerging infectious diseases. As far as monkeypox preparedness, readiness and prevention are concerned, there is a need for intentional efforts by the Ministry of Health to educate its health workers on all emergency-related diseases.

Our study does have some limitations. The cross-sectional approach makes it difficult to establish cause-and-effect relationships. Additionally, the reliance on self-reported data introduces potential bias, as participants might overestimate or underestimate their knowledge and preparedness. However, our study has some benefits also. Since this study was one of the less studied topics in Bangladesh, the findings provide baseline evidence and contribute to the literature. Policymakers can use the findings to develop potential steps for improving the preparedness against monkeypox as an initial preventive measure. One crucial step is equipping healthcare professionals with the necessary knowledge and skills. This can be achieved through the development and implementation of practical workshops and hands-on courses specifically focused on monkeypox diagnosis and management. Furthermore, the Bangladeshi Ministry of Health should prioritise widespread dissemination of up-to-date monkeypox information. Using a multi-pronged approach, this can include traditional media outlets like newspapers, along with official websites and social media platforms to reach both healthcare professionals and the general public.

CONCLUSION

Our study showed approximately one-third of the resident physicians had good knowledge about monkeypox. The study revealed significant associations between the participants' current job level with their knowledge and preparedness towards the disease. However, the participants' willingness to serve during a human monkeypox outbreak was unsatisfactory, with older age physicians exhibiting better knowledge about monkeypox. Hence, developing and implementing practical knowledge-sharing sessions to enhance the capacity of doctors regarding human monkeypox could be an effective strategy towards improving the current condition and preparing for any future outbreak. Based on the results and subsequent discussion with other relevant literature,

it can be concluded that the findings of the present study may be a useful basis for future research.

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Patient consent for publication Not applicable.

Ethics approval This study involves human participants and the study protocol underwent review by the ethics review committee (ERC) of the Dhaka Medical College review board (ERC-DMC/ECC/2022/257). Participants provided informed written consent after receiving explanations about the study's purpose, objectives, benefits and assurances regarding the confidentiality of their information. The study adhered to ethical principles outlined in the Declaration of Helsinki.

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