ORIGINAL ARTICLE

COMPARISON OF KNOWLEDGE OF MEDICAL AND NON-MEDICAL STUDENTS REGARDING MPOX

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ABSTRACT

Background: The emergence of Mpox has raised concerns. It is important to assess how well-known and understood Mpox is, among the general public particularly students, including both medical non-medical students.

Objective: To compare the knowledge of medical and non-medical students regarding Mpox.

Methods: The was a cross-sectional study. The medical and non-medical students from various institutes across Punjab were enrolled by convenience sampling from July to December 2023. Participants were invited to complete an anonymous, online survey consisting of Likert-type questions. The collected data was entered in SPSS 26 and chi square test was used. P value of ≤0.05 was considered as significant for all analyses.

Results: Total 303 students were enrolled, among which 72.9% were medical students while 27.1% were non-medical students. Out of total, 178 (58.7%) came to know about Mpox through social media. Compared to non-medical students, knowledge of medical students about epidemiology, transmission, symptoms, and prevention was statistically better. (p value ≤0.05)

Conclusion: Compared to non-medical students, medical students had better knowledge about epidemiology, transmission, symptoms, and prevention of Mpox. More awareness and educational activities are need of time to improve Mpox-related knowledge among students. Medical curricula should be revised by including emerging infectious diseases.

Keywords: Knowledge, Medical, Non-medical, Students, Mpox

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INTRODUCTION

Mpox was declared as Public Health Emergency of International Concern (PHEIC) by World Health Organization in July 2023.[1] This zoonotic disease was initial discovered in 1958, when it was found during two outbreaks in monkeys used for research in Denmark, which led to its name "monkeypox." In humans, it was first recorded in 1970 in the Democratic Republic of Congo.[2] Mild localized skin infections to severe systemic diseases can be the presentation. A key distinguishing feature of Mpox is the occurrence of cervical lymphadenopathy, which is not seen in other orthopoxviral infections.[3] Nucleic acid amplification testing (NAAT), such as real-time or conventional PCR, is the recommended for suspected Mpox cases. Many individuals with Mpox experience mild, self-limiting symptoms without the need for specific treatment.

However, in severe cases, medical consultation is advisable for potential treatment options, which may include intravenous vaccinia immunoglobulin (VIGIV) and antiviral medications like Brin cidofovir or tecovirimat.[2]

The Emergence of Mpox has raised misperceptions among general public.[4] Medical students, as future healthcare provider, assume key role in creating awareness regarding Mpox. However, there have been concerns about knowledge of Mpox, among medical students and non-medical students. It is important to assess how well-known and understood Mpox is, among the general public particularly students, including both medical non-medical students. In order to create effective educational interventions to boost public health preparedness and response, this study aims to uncover any knowledge gaps that may exist. Therefore, this study was conducted with the objective to compare the knowledge of medical and non-medical students regarding Mpox.

METHODS

Institutional Review Board of Ameer-ud-Din Medical College, Lahore approved the study. This was cross-sectional study. Population was medical and non-medical students from various institutes across Punjab. Study was conducted from July to December 2023. An anonymous, optional, online survey consisting of Likert-type questions was distributed among participants. Participants were enrolled by convenience sampling. Prior to being enrolled in the study, informed consent was electronically signed by each participant. Their anonymity and privacy were rigorously upheld at all times during study. No financial incentive was offered to the participants. Data was collected through a structured questionnaire, which was administered electronically. The questionnaire included items related to demographic information, knowledge of Monkeypox virus about its epidemiology, transmission, symptoms, and prevention. The collected data was entered in SPSS 26 and chi square test was used for comparison. A p-value of ≤ 0.05 was considered as significant.

RESULTS

The study participants comprised of 303 students, among which 221 (72.9%) were medical students while 82 (27.1%) were non-medical students. Majority students were female (69%). Out of total, 178 (58.7%) came to know about Mpox through social media. (Table 1). The questionnaire included items related to knowledge of Monkeypox virus about its Epidemiology, transmission, symptoms, and prevention. Compared to non-medical students, knowledge of medical students about epidemiology, transmission, symptoms, and prevention was statistically better. (Table 2)

Table-1: Frequency distribution of demographic variables (n=303)

		n (%)
Gender	Female	209 (69.0)
	Male	94 (31.0)
Educational field	Medical	221 (72.9)
	Non-Medical	82 (27.1)
Source of information about Monkey pox Virus	Friends and Relatives	38 (12.5)
	Research	39 (12.9)
	Social media	178 (58.7)
	Television	48 (15.8)

DISCUSSION

This is the among initial studies from Pakistan to compare the knowledge of medical and non-medical students in Pakistan regarding Mpox. Knowledge of medical students was good. Results of our study are comparable with those from Masood et al.[5]

The results of our study indicate that most future doctors are knowledgeable about the origins of Mpox. In contrast, findings from other studies from Pakistan and Saudi Arabia showed that a significant number of students were unaware of Mpox's origins.[6,7] A similar study in Malaysia also found gaps in knowledge about Mpox among medical and dental undergraduates,[8] reflecting concerns seen in other countries.[9,10] Most medical students in our research correctly identified how the Mpox virus is transmitted. A study from the United Arab Emirates found that a larger percentage of undergrads understood transmission routes of Mpox.[11] Our results are more favorable compared to an earlier study conducted in Jordan.[9] Additionally, the majority of students in our study demonstrated a good awareness of the signs and symptoms of Mpox, which aligns with findings from Saudi Arabia. Moreover, our study revealed that students had a solid understanding of preventive measures, echoing results from previous research.[5,12]

Selection bias due to the convenience sampling and online data collection procedure might be one limitation. Additionally, academic dishonesty may be a possibility since the students would have surf the internet to obtain the accurate information for the knowledge items.

Table-2: Comparison of Knowledge between Medical and Non-Medical students (n=303)

Questions	Educational field			Chi-square	p-value
		FALSE	TRUE		
The first time MPXV was discovered isolated was in 1958	Medical	51(65.4%)	170(75.6%)	3.036	0.081
	Non-Medical	27(34.6%)	55(24.4%)		
The first place MPXV was discovered isolated was in Africa	Medical	37(66.1%)	184(74.5%)	1.641	0.200
	Non-Medical	19(33.9%)	63(25.5%)		
Currently the most affected area by MPXV is Africa	Medical	40(53.3%)	181(79.4%)	19.406	<0.001
	Non-Medical	35(46.7%)	47(20.6%)		
Nowadays MPXV started to spread as an epidemic all over the world	Medical	79(73.8%)	142(72.4%)	0.067	0.796
	Non-Medical	28(26.2%)	54(27.6%)		
MPXV is a re-emerging type of disease	Medical	34(61.8%)	187(75.4%)	4.209	0.040
	Non-Medical	21(38.2%)	61(24.6%)		
The most common method of MPXV transmission is through contact	Medical	49(63.6%)	172(76.1%)	4.524	0.033
	Non-Medical	28(36.4%)	54(23.9%)		
MPXV can be transmitted vertically from mother to child	Medical	96(71.1%)	125(74.4%)	0.411	0.511
	Non-Medical	39(28.9%)	43(25.6%)		
Blood borne transmission of the MPXV is possible	Medical	67(66.3%)	154(76.2%)	3.344	0.067
	Non-Medical	34(33.7%)	48(23.8%)		
MPXV cannot be spread through food	Medical	88(73.9%)	133(72.3%)	0.102	0.750
	Non-Medical	31(26.1%)	51(27.7%)		
MPXV is a mild disease in general	Medical	100(71.9%)	121(73.8%)	0.129	0.720
	Non-Medical	39(28.1%)	43(26.2%)		
The most common symptoms of MPXV are fever, rash and swollen lymph nodes	Medical	22(50.0%)	199(76.8%)	13.720	<0.001
	Non-Medical	22(50.0%)	60(23.2%)		
The typical incubation period of MPXV is 5-21 days	Medical	29(58.0%)	192(75.9%)	6.769	0.009
	Non-Medical	21(42.0%)	61(24.1%)		
The most important method for preventing the spread of MPXV disease	Medical	27(60.0%)	194(75.2%)	4.481	0.034
	Non-Medical	18(40.0%)	64(24.8%)		
There was a licensed MPXV vaccine available at the time of this study	Medical	114(74.0%)	107(71.8%)	0.188	0.665
	Non-Medical	40(26.0%)	42(28.2%)		
The most common MPXV treatment is supportive therapy for example fluids	Medical	35(51.5%)	186(79.1%)	20.469	<0.001
	Non-Medical	33(48.5%)	49(20.9%)		
Pakistan is affected by a disease that resembles MPXV called the chickenpox	Medical	37(52.1%)	184(79.3%)	20.373	<0.001
	Non-Medical	34(47.9%)	48(20.7%)		
MPXV can be imported to Pakistan	Medical	27(51.9%)	194(77.3%)	14.044	<0.001
	Non-Medical	25(48.1%)	57(22.7%)		

CONCLUSION

Compared to non-medical students, medical students had better knowledge about epidemiology, transmission, symptoms, and prevention of Mpox. More awareness and educational activities are need of time to improve Mpox-related knowledge among students. Medical curricula should be revised by including emerging infectious diseases.

Ethical Approval: *Submitted*
Conflict of Interest: *Authors declare no conflict of interest.*

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AUTHOR'S CONTRIBUTIONS

MFA: Draft Manuscript preparation, Data analysis
ZA: Study concept, design
UM, AN: Data collection
JS: Manuscript preparation, critical review