ORIGINAL ARTICLE

Knowledge about COVID-19 and Perception of the Role of Media Among Non-Medical Students

Saadia Maqbool[*], Iram Manzoor, Bilal Humayun, Eidah Majeed, Fatima Aftab, Ayesha Ansar

ABSTRACT

Objective: The study aimed to determine the knowledge about disease and perception of the role of media regarding COVID-19 among non-medical students.

Study Design: Cross-sectional analytical study.

Place and Duration of Study: This study was conducted in educational institutions of Punjab including University of Lahore, National University of Science and Technology, COMSATS University, Forman Christian College University, University of Management and Technology, Punjab University, GC University Faisalabad, The University of Agriculture Faisalabad, University of Engineering & Technology, University of Central Punjab, Islamia University Bahawalpur and Lahore College of Women University from June 2021 to November 2021.

Materials and Methods: Using the convenience sampling technique, a sample of 400 non-medical students was included in the study. A self-constructed pre-tested questionnaire was used to collect data. Data was entered and analyzed in SPSS version 23. Independent t-test and ANOVA were applied to find the association between variables. A p-value of ≤ 0.05 was considered statistically significant.

Results: Mean age of participants was 21.45± 2.16 years. About 38.7% used three or more sources of information. The most reliable source of media (37.75%) was social media updates. About 77.5% of participants used mass media daily and an increase in social media usage was reported by 88% of participants. The mean score related to knowledge was 14.09±4.5 out of 20. A statistically significant difference was found in the knowledge score of groups based upon sources of information (p = <0.001), communication practices (p = <0.001), gender (p=0.01), reported an increase in social media usage (p=0.04) and habit of seeking medical advice from media influences (p =0.05). The majority of participants agreed that media is creating awareness but also increasing fear and anxiety.

Conclusion: Respondents had good knowledge about COVID-19. Gender, information sources, communication practices, increase in media usage and taking medical advice from media influenced the knowledge. Participants agreed that media is creating awareness but also increasing fear and anxiety.

Keywords: COVID-19, Media, Pandemic, Risk, Student.

Introduction

Pandemics are not new to human beings, and several catastrophic occurrences have occurred in the

Department of Community Medicine
Akhtar Saeed Medical and Dental College, Lahore, Pakistan

Correspondence:
Dr. Saadia Maqbool
Assistant Professor, Community Medicine
Akhtar Saeed Medical and Dental College, Lahore, Pakistan
E-mail: sara.mumtaz@numspak.edu.pk

history of mankind. Corona virus disease 2019 has become a major threat to public health all around the globe.[1]

In the current situation, media plays a significant role in connecting people globally, managing crises by rolling out updates, providing the latest information and imparting knowledge about the disease.[2] Mass media sources such as television and newspapers and the social media have shaped people's risk perception and self-efficacy.[3] Particularly during this crisis, the number of people using social media platforms to gather information, has enormously

increased.

Media sources also played a crucial role in maintaining communication and spreading valuable information about modes of spread, symptoms and preventive measures. A study conducted in Egypt, described that the mean knowledge score about COVID-19 was 16.39 out of 23, gained mainly through social media (66.9%) and the internet (58.3%). [4]

With more than three billion users globally, social media could be the best platform to increase people's awareness and compliance with the recommended preventive measures. Features such as banners and pop-ups in social media are useful to alert media users on the latest updates and to give reminders about preventive practices like social distancing and hand washing. Furthermore, the ability of social media to share authentic information helps combat infectious diseases. [5]

Previous studies have revealed that the use of social media platforms has a positive impact on health awareness and adopting preventive measures against COVID-19. [5]However, immense exposure to distressful news causes a negative impact on people physically as well as psychologically. [6] Additionally, social media can be a source of misinformation and false news, creating panic and havoc among mankind. [6] The WHO declared this misinformation spread as a "infodemic", that has affected mental health badly and leading to anxiety and depression. [7]Non-medical students do not have the relevant medical knowledge and thus cannot perceive the vulnerability of getting infection and complications of disease. It is essential to convey accurate knowledge and improve their risk perceptions. Media can play a major role by creating awareness, providing knowledge and shaping behaviours. [2]

Previous studies have thrown light on knowledge, use of different media sources for updates on preventive practices regarding Coronavirus disease among the general public. Youth constitutes the largest portion of the population in Pakistan. No study had been conducted so far to determine the level of knowledge about COVID 19 and the perceived role of media in creating awareness among Pakistani youth, particularly non-medical college students. This study aimed to determine the

knowledge about coronavirus disease and the perception of the role of media regarding COVID-19 among non-medical students. There is a dire need to know whether media is playing a positive role in shaping knowledge and creating awareness or is circulating false news among the student community leading to panic, stress and depression amongst non-medical students, which attain much information through the web and social media apps.

Materials and Methods

This analytical cross-sectional study was conducted in educational institutions including University of Lahore, National University of Science & Technology, COMSATS University, Forman Christian College University, University of Management & Technology, Punjab University, GC University Faisalabad, The University of Agriculture Faisalabad, University of Engineering & Technology, University of Central Punjab, Islamia University Bahawalpur and Lahore College of Women University from June 2021 to November 2021. The sample size was calculated using Cochran's sample size formula. Keeping 5% precision and a 95% confidence level, a sample size of 385 was calculated. After rounding off, the final sample size came out to be 400 participants. Approval from the ethical review board of Akhtar Saeed Medical & Dental College was taken (IRB no M-19/056/-CM). A convenience sampling technique was used. Undergraduate students of all non-medical programmes of above-mentioned universities, more than 18 years of age, having access to social media and who were willing to participate were included. Students of allied health sciences programmes were excluded from the study.

A self-constructed, pretested questionnaire was used. A research questionnaire was designed after an extensive literature search, reviewed and revised by public health experts and a biostatistician before the conduction of research to establish the content validity. First part of the questionnaire included a demographic profile and media usage, the second part included a knowledge assessment about COVID-19, and the third part included the perceived role of media. The second part of the questionnaire was related to knowledge and consisted of 20 knowledge questions covering the mode of transmission, symptoms, vulnerability, actions to be taken after

being infected and disease prevention. The correct answer was scored as one point, and the wrong answer was given zero scores, with the maximum score being 20.

The 5-point Likert scale was used to measure the perceived role of the media (Strongly Disagree = 1, Disagree=2, Neutral = 3, Agree =4 and Strongly Agree = 5). The results were analyzed as follows: low score (1.00–2.33), medium score (2.34–3.67), and high score (3.68–5.00).

Data was entered and analyzed in SPSS version 23. Categorical variables were tabulated in frequency and percentage distribution. Mean and standard deviation were calculated for continuous variables like age and knowledge score. Independent t-test and ANOVA were applied to find an association between variables. A p-value of ≤ 0.05 was taken as statistically significant.

Results

The mean age of participants was 21.45± 2.16 years. Among total of 400 participants, females were dominant (n = 271, 67.8%). The majority of participants (n=267, 66.8%) were students of public sector universities and 133 (33.2%) were studying in private sector universities. Out of the total respondents, 269(67.4%) belonged to urban areas, while 131 (32.8%) were rural residents. Only 72 (18%) students were residing in hostels and 328 (82%) were day scholars.

About 155 (38.75%) were using three or more platforms as sources of information on COVID-19. Many respondents reported the use of media sources on a daily basis with frequency of 310 (77.5%). The most reliable form of media for the latest information regarding COVID-19 was social media updates, reported by 37.75% of participants. Two third respondents (65.75%) stated that they had received medical advice regarding COVID-19 from media influences which are not healthcare professional. Details are mentioned in table 1.

Adherence of non-medical students to COVID SOPs is shown in figure 1.

The mean score related to knowledge was 14.09±4.5 out of 20. One-way ANOVA was applied. There was a statistically significant difference in the mean knowledge score between 3 groups based on the source of information (p = <0.001) and in the mean knowledge score of 3 groups having different

Table 1: Use of media sources by participants		
Use of media	Frequency (n)	Percentage (%)
Media Source used		
Combination of 3 or more sources	155	38.75
Combination of 2 sources	46	11.5
Only one source used	199	49.75
Frequency of use of media		
Daily	310	77.5
Weekly	77	19.25
Monthly	13	3.25
Hours spent on media usage		
Less than one hour/day	46	11.5
1-3 hours/ day	147	36.75
4-6 hours/day	112	28
More than 6 hours/day	95	23.75
The type of media relied most on the latest information		
Google search	62	15.5
Social media updates	151	37.75
Radio/TV channels news updates	143	35.75
Online news updates	21	5.25
Others	22	5.5
Social media usage increased during a pandemic		
Yes	352	88
No	48	12
Ever visited the government website for updates and SOP guidelines		
Yes	231	57.75
No, never visited	169	42.25
Fact checking of articles regarding COVID-19 after reading online		
Always	249	62.25
Never	151	37.75
Received medical advice from media influences which are not health professionals		
Yes, frequently sought	263	65.75
No, only consulted doctor	137	34.25
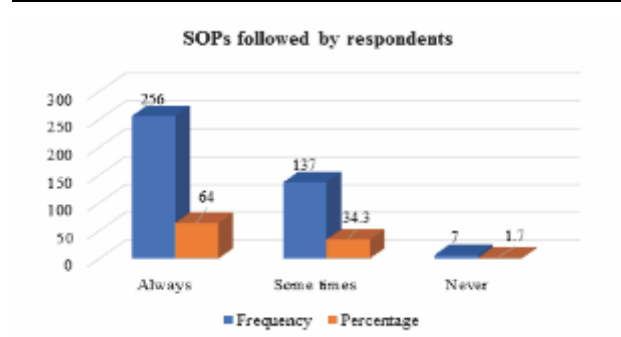
Fig 1: Adherence of participants to COVID SOPs

communication practices (p = <0.001). Results are shown in table no 2.

Table 2: Difference in the knowledge scores related to COVID-19

Variable	Groups	Sum of squares	Mean square	F	P value
Source of information regarding COVID-19 Only one source Two sources Three or more sources	Between groups Within groups	1631.7 6552.7	815.8 16.5	42.4	<0.001
Frequency of use of media Daily Weakly Monthly	Between groups Within groups	50.8 8133.5	25.4 20.5	1.24	0.29
Most relied media source Social media Google searches Radio/TV news Online news websites Others	Between groups Within groups	63.9 8120.4	15.9 20.5	0.778	0.54
Communication practices during COVID Keep in touch by phone No longer in touch Regularly meet with others Meet others less frequently & with SOPs	Between groups Within groups	548.1 7636.3	182.7 19.3	9.47	<0.001

A statistically significant difference was found between mean knowledge score and gender, reported increased social media usage during the pandemic and the habit of taking medical advice regarding COVID-19 from media influences. Results are shown in table no 3.

Table 3: Difference in the knowledge scores related to COVID-19

Variable	Groups	Mean (SD)	P value
Gender	Male	13.24 (4.9)	0.009
	Female	14.5(4.3)	
Social media usage increased during a pandemic	Yes	14.27(4.46)	0.045
	No	12.39(4.85)	
Sought medical advice from media influences	Yes	13.64(4.66)	0.05
	No, only consult the doctor	14.96(4.13)	
Ever visited the government website for updates	Yes	14.04(4.68)	0.77
	No	14.17(4.31)	

The perceived role of media briefing on COVID-19 was also assessed on a 5-point Likert scale. Results are shown in Table no 4.

Table 4: Perceived role of media

The perceived role of media	Mean ± SD	Rank
All information regarding COVID -19 received from the media is correct.	3.5±0.92	Medium
Media is playing a role in educating people about the preventive measures for the control of disease.	4.05±0.73	High
Media is playing a significant role in creating awareness in the community	4.12±0.74	High
Media is playing an important role in educating people to protect others if they are infected/suspected of being infected.	4±0.79	High
Media is increasing fear, anxiety, depression and uncertainty among the public	3.60±0.98	Medium
Media is spreading false information and putting people at risk	3.04±0.99	Medium

Discussion

The findings of this study reflected that many respondents used multiple sources of information about COVID-19. About 38.7% of respondents mentioned using three or more sources of information, declaring radio or television news and social media updates as the main source of information. In another study conducted in India,

social media (81.4%) and television (75.3%) were reported as sources of receiving COVID-19-related information. While more than half of the respondents relied upon information communicated by friends and family members or shared on WhatsApp.[8]

About 77.5% of participants stated that they use mass media on a daily basis. Over one-third of participants (36.7%) spent 1-3 hours/ day using media platforms. These findings were slightly higher than the study carried out at Chitwan Nepal describing that 88.8% used mass media for obtaining information, where 67.3% used it daily.[9] Difference in access to media and availability of the internet may explain this variation.

In the present study the most reliable form of media for the latest information regarding COVID-19 was social media updates, reported by 37.7% of participants. Another study at Indonesia revealed that their community preferred social media (i.e., Facebook and Instagram), followed by television news as information sources.[10]

In this study, 88% of participants reported that their use of social media increased during the pandemic. A study conducted in Italy revealed that 70% of respondents reported that their use of social media to find medical information increased during the current pandemic. Although both studies are showing an increase in social media usage, the difference in percentages may be attributed to different study settings.[11]

During this pandemic, media platforms played an important role provision of medical advice through telemedicine. However, a huge amount of misinformation is spreading faster than the disease itself. The majority of respondents (65.75%) stated that they had received medical advice regarding COVID-19 from media influences which are not healthcare professional. Musoke P et al. reported in research conducted in Uganda that the influence of media in propagating non-professional recommendations regarding health care was high. More than 50% of participants reported using herbal remedies either to prevent or treat COVID-19-like symptoms. More than 80% of the participants accessed the information about herbal medication use.[12]

Almost 62% of participants agreed that they often

fact check articles regarding updates on COVID-19. Surprisingly, 90% of Palestine participants re-checked their information mainly from official sources, such as the World Health Organization and the Palestinian Ministry of Health.[13]

The current study showed that students possessed sufficient knowledge about COVID-19. The mean score related to knowledge was 14.09±4.5 out of 20, i.e 70.4%. Students studying non-health related subjects in the University of Sharjah, UAE achieved 69% score.[14] The average knowledge score of students of Jordan was 80.1%. The difference can be attributed to the fact that study conducted in Jordan included medical students as well.[15]

There was a statistically significant difference between the knowledge score and the use of different sources of information for getting updated information regarding COVID-19. Female gender was significantly associated with knowledge score in a study conducted in Indonesia.[16] In Ethiopian students, use of television for COVID-19 information was significantly associated with knowledge score.[17] The possible reason for this variation may be a difference in the educational background, study setting and perception towards the severity of the pandemic.

International agencies kept updating the guidelines and SOPs to control the pandemic. Social media platforms are effective in changing perceptions and behavior amid this lethal viral disease. In this study, 64% of participants reported compliance to SOPs regarding COVID-19 always while 34.3% followed SOPs sometimes. The situation is similar in Malaysia adherence to SOPs was found in 69.2% respondents.[18]

A moderate response was shown that students always trust the information regarding COVID-19, received from the media. Similarly, higher perceived reliability of media among respondents was indicated in the findings of a study conducted in Ethiopia.[19]

Most participants scored high in agreement that media is playing a role in educating people about preventive measures, creating awareness in the community and educating people to protect others if they are infected / suspected of being infected. In another study conducted by Karasneh R et al. assessments about the perceived role of media

among pharmacists were made. Majority of pharmacists expressed their agreement that the media is spreading awareness about the disease, educating the community regarding preventive measures and caring for diseased or suspected of being infected individuals. [20]

A significant number of participants were in favour that media increases fear, depression and anxiety among the public. Findings are in accordance of the study, which reported that social media has a significant impact on spreading fear and panic related to the COVID-19 outbreak in Iraqi Kurdistan, and adversely affects people's mental health and psychological well-being. [21]

Limitations of the study

Due to its cross-sectional design, this study can't establish a causal relationship. Secondly, this study was conducted in Pakistan. So, its results might not be generalizable to other countries owing to geographic, political, cultural, and other differences.

Conclusion

Many respondents used multiple sources of information about COVID. The social media was considered as the most reliable source. Overall, respondents had good knowledge about COVID-19. A significant difference was found in the knowledge score of groups based on sources of information, communication practices, gender, increase in social media usage and seeking medical advice from media influences. Participants agreed that media is playing a role in creating awareness, but some participants opined that media is increasing fear, anxiety and uncertainty.

Acknowledgements

REFERENCES

1. Al-Dmour H, Salman A, Abuhashesh M, Al-Dmour R. Influence of social media platforms on public health protection against the COVID-19 pandemic via the mediating effects of public health awareness and behavioral changes: integrated model. Journal of medical Internet research. 2020; 22: e19996. doi: 10.2196/19996
2. Sobeih Y, Samir R. The Role of Digital Media in Public Awareness During the Coronavirus (COVID-19) Pandemic. RAIS. 2020; 6: 27-31.
3. Hassan MS, Al Halbusi H, Najem A, Razali A, Fattah FA, Williams KA. Risk perception, self-efficacy, trust in government, and the moderating role of perceived social media content during the COVID-19 pandemic. Changing Societies & Personalities. 2021; 5: 9-35. doi: 10.15826/csp.2021.5.1.120
4. Abdelhafiz AS, Mohammed Z, Ibrahim ME, Ziady HH, Alorabi M, Ayyad M, et al. Knowledge, perceptions, and attitude of Egyptians towards the novel coronavirus disease (COVID-19). Journal of Community Health. 2020; 45: 881-90. doi: 10.1007/s10900-020-00827-7
5. Mat Dawi N, Namazi H, Hwang HJ, Ismail S, Maresova P, Krejcar O. Attitude Toward Protective Behavior Engagement During COVID-19 Pandemic in Malaysia: The Role of E-government and Social Media. Frontiers in public health. 2021; 9: 609716. doi: 10.3389/fpubh.2021.609716
6. Garfin DR, Silver RC, Holman EA. The novel coronavirus (COVID-2019) outbreak: Amplification of public health consequences by media exposure. Health Psychology. 2020; 39: 355-7. doi: 10.1037/hea0000875
7. Kanozia R, Kaur S, Arya R. Infodemic during the COVID-19 lockdown in India. Media Asia. 2021; 48: 58-66. doi: 10.1080/01296612.2021.1881286
8. Prasad Singh J, Sewda A, Shiv DG. Assessing the knowledge, attitude and practices of students regarding the COVID-19 pandemic. Journal of Health Management. 2020; 22: 281-90. doi: 10.1177/0972063420935669
9. Shrestha S, Sapkota S, Sapkota S. Roles of Mass Media in Shaping Knowledge and Perception Related to Covid-19. International Journal of Social Sciences and Management. 2022; 9: 75-82. doi: 10.3126/ijssm.v9i2.42995
10. Sulistyawati S, Rokhmayanti R, Aji B, Wijayanti SP, Hastuti SK, Sukesi TW, et al. Knowledge, attitudes, practices and information needs during the COVID-19 pandemic in Indonesia. Risk Management and Healthcare Policy. 2021; 14: 163-175. doi: 10.2147/RMHP.S288579
11. Murri R, Segala FV, Del Vecchio P, Cingolani A, Taddei E, Micheli G, et al. Social media as a tool for scientific updating at the time of COVID pandemic: Results from a national survey in Italy. Plos one. 2020; 15: e0238414. doi: 10.1371/journal.pone.0238414
12. Musoke P, Nantaayi B, Ndawula RK, Wannyana B, Ssewante N, Wekha G, et al. Fear of COVID-19 and the media influence on herbal medication use in Uganda: a cross-sectional study. Risk Management and Healthcare Policy. 2021; 14: 3965-75. doi: 10.2147/RMHP.S332325
13. Baker I, Marzouqa N, Yaghi BN, Adawi SO, Yousef S, Sabooh TN, et al. The Impact of Information Sources on COVID-19-Related Knowledge, Attitudes, and Practices (KAP) among University Students: A Nationwide Cross-Sectional Study. International Journal of Environmental Research and Public Health. 2021; 18: 12462. doi: 10.3390/ijerph182312462
14. Hasan H, Raigangar V, Osaili T, Neinavaei NE, Olaimat AN, Aolymat I. A cross-sectional study on university students' knowledge, attitudes, and practices toward COVID-19 in the United Arab Emirates. The American journal of tropical medicine and hygiene. 2021; 104: 75-84. doi: 10.4269/ajtmh.20-0857
15. Olaimat AN, Aolymat I, Shahbaz HM, Holley RA. Knowledge and information sources about COVID-19 among university students in Jordan: a cross-sectional study. Frontiers in public health. 2020; 8: 254. doi: 10.3389/fpubh.

2020.00254

16. Adli I, Widyahening IS, Lazarus G, Phowira J, Baihaqi LA, Ariffandi B, et al. Knowledge, attitude, and practice related to the COVID-19 pandemic among undergraduate medical students in Indonesia: A nationwide cross-sectional study. PloS one. 2022; 17: e0262827. doi: 10.1371/journal. pone.0262827

17. Berihun G, Walle Z, Teshome D, Berhanu L, Abebe M, Ademas A, et al. Knowledge, attitude, and preventive practices towards COVID-19 among students of Ethiopian higher education institutions. Journal of Multidisciplinary Healthcare. 2021; 14: 2123-36. doi: 10.2147/JMDH. S322495

18. Maung TM, Oo WM, May GX, Huey Yi C, Pathmanafan J, Pai V. Attitude and Adherence to COVID-19 Standard Operating Procedures (SOPs) among Malaysians. Asian Journal of Medicine and Health. 2022; 20: 1-9. doi: 10.9734/ajmah/ 2022/v20i630465

19. Asnakew Z, Asrese K, Andualem M. Community risk perception and compliance with preventive measures for COVID-19 pandemic in Ethiopia. Risk Management and Healthcare Policy. 2020; 13: 2887-97.

20. Karasneh R, Al-Azzam S, Muflih S, Soudah O, Hawamdeh S, Khader Y. Media's effect on shaping knowledge, awareness risk perceptions and communication practices of pandemic COVID-19 among pharmacists. Research in Social and Administrative Pharmacy. 2021; 17: 1897-902. doi: 10.1016/j.sapharm.2020.04.027

21. Ahmad AR, Murad HR. The impact of social media on panic during the COVID-19 pandemic in Iraqi Kurdistan: online questionnaire study. Journal of medical Internet research. 2020; 22: e19556. doi: 10.2196/19556

………………………………………………………………………………………….