Public Adherence to Preventive Practices during the Third Wave of the COVID-19 in Afghanistan

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Research

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Abstract

Background

The COVID-19 pandemic emerged from Wuhan, China and has spread across the world and raised public health concerns. To curb the spread of the disease, the government has imposed prevention measures. The objective of this study was to examine the compliance of people with infection prevention practices during the third wave of the pandemic to provide an updated insight into the situation and help policy makers in designing effective measures.

Methods

This was an online survey of the general population in Afghanistan from April, 2021 to May, 2021. Non-probability convenience sampling technique was used to recruit the respondents. The target sample size was found to be around 1,094 respondents. Data collection was guided through self-administered questionnaire developed by the researchers according to the World Health Organization (WHO) guidelines.

Results

From 1,094 respondents, 78% were male. Majority of the respondents were aged ≤ 30 years and had an undergraduate education. Nearly, 1 in 3 participants were healthcare workers and 70% were living in households with 5 or more family members. Overall, 70% of the respondents reported good preventive practices. No significant association found between male and female participants with regard to preventive practices against the COVID-19. The frequency of good preventive practices was significantly higher in participants more than 30 years old ($p = 0.035$), people with a post-graduate education ($p = 0.025$), healthcare workers ($p = 0.002$), and households with less than five family members ($p = 0.002$).

Conclusion

Generally, the public in Afghanistan are following infection prevention rules. However, there are certain areas which require further improvement such as observing social distance and avoid shaking hands when meeting others. Negligence of these prevention practices can lead to the increase of infection transmission among people. Public awareness should be continued to keep the people supportive of the government policies. Social media, television advertisements, and similar platforms may be used for this purpose.

Introduction

The Corona Virus Disease-2019 (COVID-19) is a highly contagious respiratory disease caused by Severe Acute Respiratory Syndrome Corona Virus type-2 (SARS-COV-2). The disease has spread to more than 190 countries since its emergence from Wuhan China in 2019 [1]. To curb the disease, governments and health departments enforced nationwide lockdowns, social distancing, travel restrictions, precautionary measures and preventive guidelines[2]. Despite all these measures, the fight to flatten the curve of the COVID-19 is still taking a huge toll on governments and health systems particularly in low- and middle-income countries[3].

The World Health Organization (WHO) issued several infection prevention and control precautions to reduce the risk of exposure to COVID-19[4] such as wearing a face mask, hand sanitizing, social distancing, avoiding close contact with people specially in crowded areas, covering mouth and nose during coughing and sneezing, and use of personal protective equipment[5]. These protocols and recommendations are continuously updated by the WHO in the light of available evidence.

As of 13 June 2021, there have been 89,861 confirmed cases of COVID-19 in Afghanistan with 3,527 deaths, reported to WHO [6]. However, studies estimate that the actual number of infections might be much higher than what is reported [7]. Serious efforts including lockdown, gathering and travel restrictions, raising awareness through public health education and hygiene promotion programs have been implemented to control the outbreak effectively[8]. Nevertheless, inadequate facilities and insufficient healthcare workforce, lack of personal protective equipment, insecurity, and ongoing conflicts make it difficult to reach the aforementioned target[9].

It is agreed that safe and effective vaccines, together with taking precautionary measures, are essential to end the pandemic and its associated health, economic and social impacts[10]. Although the Afghan government administered a total of 641,295 doses of COVID-19 vaccine until 07 June 2021, [7] but due insufficient quantity of vaccines the process was stopped until arrival of next shipments. This concurred to the resurgence of the third wave of the COVID-19 in the country. During the time of writing this manuscript, the government of Afghanistan announced partial lockdown measures to help reduce infection rates [11].

Observing infection prevention protocols seem to be the most effective strategy to decrease the infection rates in such a resource limited setting. Therefore, this study aimed to investigate the compliance of people with infection prevention practices during the third wave of the pandemic to provide an updated insight into the situation and help policy makers in designing effective measures.

Methods

Study Design and Sampling

This was an online survey of the general population in Afghanistan. Non-probability convenience sampling technique was used to recruit the respondents. The inclusion criteria were being 18 years or

older and having access to the internet to fill out the online questionnaire. Respondents below 18 years and who did not consent to participate in the study were excluded.

Survey Instrument, Tool Administration and Data Collection

An Online, structured and self-administered questionnaire was developed by the researchers according to the WHO guidelines and preventive practices released in April 2021.[12] The survey tool comprised of 3 sections. The first section highlighted the general purpose of the study and asked the participants to provide an informed consent before answering questions. The second section included demographic characteristics of respondents, i.e. age, sex, education, residence, marital status, occupation and family size. The third section included 9 questions based on WHO preventive practices towards COVID-19 to evaluate compliance with preventive guidelines. The questionnaire was pilot-tested to examine legibility, reliability and face validity. The final questionnaire was distributed to respondents across social media platforms from April to May 2021.

Data Analysis

The data were analysed using Microsoft Excel 2019 and IBM Standard Package for Social Studies (SPSS) Statistics version 25.0. Microsoft Excel was used for editing, sorting, and coding. The excel file was then imported into SPSS software. Descriptive statistics (frequencies, percentages) and bi-variable (chi-square) analysis were done. A p value of < 0.05 considered statistically significant at 95% confidence interval. For preventive practices, scores of $< 60\%$ were classified as poor practices and $\geq 60\%$ were classified as good practices[13].

Results

Socio-demographic characteristics of the respondents

A total of 1,094 respondents were included in the final analysis, of which 78.7% were male. Majority of the respondents aged ≤ 30 years and had an undergraduate education (72.3% and 68.5% respectively). Almost half of them were single and 3 out of 4 participants lived in Kabul, the capital of Afghanistan. Nearly 1 in 3 participants were healthcare workers and 70% were living in households with 5 or more family members (Table 1).

Table 1
Sociodemographic characteristics of respondents
[N = 1,094]

Variables	N	(%)
Sex		
Male	861	78.7
Female	233	21.3
Age		
≤ 30 years	791	72.3
> 30 years	303	27.7
Education		
Undergraduate	749	68.5
Postgraduate	345	31.5
Residency		
Provinces	255	23.3
Kabul	839	76.7
Marital Status		
Single	554	50.6
Married	540	49.4
Occupation		
Health care workers	344	31.4
Non-health care workers (Others)	750	68.6
Family size per household		
Below five	323	29.5
Five and more	771	70.5

Preventive practices of respondents against COVID-19

Table 2 shows the frequency of preventive practices reported by the study population. Overall, 768 (70.2) respondents reported good preventive practices. Majority of the participants reported to cover their mouth and nose while coughing and sneezing; and clean their hands regularly and thoroughly with an alcohol-based disinfectant or soap and water (88% and 85.8% respectively).

Almost 80% of the participants wore a mask when going outside. Furthermore, 3 out of 4 respondents reported to clean and disinfect surfaces frequently especially those which are regularly touched; avoid the 3Cs, i.e. closed spaces, crowded places or close contact; and avoid touching their eyes, nose and mouth.

Slightly more than two-thirds of the study participants reported to maintain a distance of at least 1m with others; and only 60% of them avoided hand-shaking while meeting people.

Table 2
Frequency distribution of participants' responses on the questions about preventive practices

Preventive practices against COVID-19	Yes	No
	N (%)	N (%)
Cover your mouth and nose with your bent elbow or tissue when you cough or sneeze.	963 (88)	131 (12)
Meet people outside.	969 (88.6)	125 (11.4)
Regularly and thoroughly clean your hands with an alcohol-based hand rub or wash them with soap and water.	939 (85.8)	155 (14.2)
Wearing a mask when around other people.	872 (79.7)	222 (20.3)
Clean and disinfect surfaces frequently especially those which are regularly touched.	839 (76.7)	255 (23.3)
Avoid the 3Cs: Closed spaces, crowded places or close contact.	825 (75.4)	269 (24.6)
Avoid touching your eyes, nose and mouth.	801 (73.2)	293 (26.8)
Maintain at least a 1-metre distance between yourself and others.	786 (71.8)	308 (28.2)
Avoid shaking hands.	659 (60.2)	435 (39.8)

Table 3 shows the results of bi-variable (Chi-square) analyses to find out significant associations of good preventive practices. No significant association found between male and female participants with regard to preventive practices against the COVID-19. The frequency of good preventive practices was significantly higher in participants more than 30 years old as compared to those aged 30 years or less (75% and 68.4% respectively; $p = 0.035$). People with a post-graduate education had higher level of preventive practices than those with an under-graduate education only (74.8% and 68.1% respectively; $p = 0.025$). Participants lived in the capital of Afghanistan, i.e. Kabul, had significantly higher level of preventive practices as compared to those lived in provinces (72.2% and 63.5% respectively; $p = 0.008$).

Furthermore, the frequency of preventive practices among healthcare workers was significantly higher as compared to non-healthcare workers (76.5% and 67.3% respectively; $p = 0.002$). Finally, households with less than five family members reported significantly higher percentage of preventive practices as compared to those with five or more family members (76.8% and 67.4% respectively; $p = 0.002$).

Table 3
Results of bi-variable (Chi-square) analyses of the sociodemographic variables with preventive practice (N = 1,094).

Characteristics	Preventive Practice		Chi-square
	Poor (N, %)	Good (N, %)	p-value
Total	326 (29.8)	768 (70.2)	
Sex			
Male	250 (29)	611 (71)	0.289
Female	76 (32.6)	157 (67.4)	
Age			
≤ 30 years	250 (31.6)	541 (68.4)	0.035
> 30 years	76 (25.10)	227 (74.9)	
Education Level			
Undergraduate	239 (31.9)	510 (68.1)	0.025
Postgraduate	87 (25.2)	258 (74.8)	
Residency			
Provinces	93 (36.5)	162 (63.5)	0.008
Kabul	233 (27.8)	606 (72.2)	
Marital Status			
Single	168 (30.3)	386 (69.7)	0.700
Married	158 (29.3)	382 (70.7)	
Occupation			
Health care workers	81 (23.5)	263 (76.5)	0.002
Non-health care workers (Others)	245 (32.7)	505 (67.3)	
Family size per household			
Below five	75 (23.2)	248 (76.8)	0.002
Five and above	251 (32.6)	520 (67.4)	

Discussion

The third wave of the COVID-19 began to spread in Afghanistan in June 2021[14]. Increasing numbers of hospitalized patients and shortage of oxygen supply placed the healthcare system in a critical situation[15]. Although the official reports announced that 94,919 positive cases and 3,761 deaths had occurred in the country,[16] but due to limited public health resources and testing capacity, as well as the absence of a national death register, it is thought that the actual figures might be higher than reported[14]. To control the consequences of the current wave, the public health officials warned people to strictly follow the preventive measures and protocols advised by the Ministry of Public Health Afghanistan. These included wearing masks, observing personal hygiene, and practicing social distance. Otherwise, the 3rd wave might be more dangerous than the previous waves[17]. This study conducted to investigate the level of compliance with preventive practices by the public during the 3rd wave of the COVID-19 in Afghanistan.

The study findings showed that 70% of the participants were committed and adhered to good preventive practices against COVID-19. Similarly, a study conducted in Cameroon with a closely challenged background showed that over 60.8% of the public shown willingness to adhere to COVID-19 precautionary measures [18].

Majority of the participants reported to cover their mouth and nose while coughing and sneezing and clean their hands regularly and thoroughly with an alcohol-based disinfectant or soap and water. This is similar to a study conducted in Ethiopia in which all participants indicated high compliance to precautionary measures, i.e. 97.1% washed their hands, 87% avoid social events, 91% used hand sanitizers, and 56.5% wore face masks when going out of the home[19].

Almost 80% of the participants wore a mask when going outside; 3 out of 4 respondents reported to clean and disinfect surfaces frequently especially those which are regularly touched, avoid the 3Cs, i.e. closed spaces, crowded places or close contact and avoid touching their eyes, nose and mouth. In a similar study conducted in Bangladesh, and Ethiopia participants have shown good practices towards COVID-19, particularly in Bangladesh, almost 98.7% of the respondents wore a mask in the crowded places, and 93.8% washed their hands with soap and water[20].

Slightly more than two-thirds of the study participants reported to maintain a distance of at least 1 m with others, while almost one-third of them did not report to practice this. As the COVID-19 can spread to the environment up to 2 meters [21], therefore, not following physical distance by a significant portion of the participants may expose the public to the increased risk of disease transmission. Furthermore, about 40% of the respondents did not report to avoid hand-shaking when meeting others. This could also increase the risk of transmission among public.

We also investigated factors associated to good preventive practices among participants. Gender difference did not show any significant association with preventive practices. This might indicate that male and female participants were equally concerned and committed to preventive practices against the

COVID-19. However, other studies reported that female participants were more compliant to preventive practices [22–25].

Age was found to have significant association with observing preventive practices. Participants older than 30 years reported significantly higher levels of preventive practices. This may be attributed to the higher level of mental maturity and education of people older than 30 years. Other studies also reported that age was a significant predictor to compliance with preventive practices against COVID-19 [19, 26]. However, an international survey found no association between age and observing rules [23].

The study findings also indicated that participants with a post-graduate degree and those living in the capital of Afghanistan reported significantly higher levels of preventive practices. This could be explained by the higher levels of trust in science which is found to be associated with higher compliance with infection prevention and control practices against COVID-19 [27]. Post graduates hold a high proportion of knowledge, awareness and practice towards COVID-19. They could also play a role in awareness among the people. Moreover, people living in provinces might be affected by false information and less outreach to health facilities than those who are living in the capital province.

Furthermore, the frequency of preventive practices was significantly higher among healthcare workers compared to other employment categories. Studies conducted in Nigeria, Iran, and Bangladesh have revealed similar findings among healthcare workers. This could be explained by the high proportion of knowledge, attitudes, and practice among healthcare workers compared to public [28–30].

Household number also found to be significantly associated with preventive practices among the study group. Households with less than five family members reported significantly higher percentage of preventive practices as compared to larger households. Households with lesser members might have better opportunities to educate their members and provide necessary items required for disease prevention such as masks, disinfectants etc. It is generally understood that a more educated family will comply better with relevant preventive and treatment measures [31].

Conclusion

The study findings show that the people of Afghanistan are generally following infection prevention rules. The practice of wearing mask and washing hand with an alcohol-based disinfectant or soap and water was good. However, there are certain areas which require further improvement such as observing social distance and avoid shaking hands while meeting others. Negligence of these prevention practices can lead to the increase of infection rate among public. Public awareness should be continued to keep people supportive of the government policies. Social media, television advertisements, and similar platforms may be used for this purpose.

Limitations Of The Study

The findings of this study may not be generalized, as we used convenience sampling method to recruit the participants. Moreover, there is a risk of bias in including only those who have access to the internet. Furthermore, most participants were educated people whose inputs may not represent the views of illiterate people in Afghanistan. However, this study provides an updated report on the current situation of public adherence to preventive practices in Afghanistan which could be used to inform relevant stakeholders and policymakers about priority areas needed for conducting public awareness campaigns and designing preventive policies.

Abbreviations

COVID-19 (Corona Virus Disease-2019); SARS-COV-2 (Severe Acute Respiratory Syndrome Corona Virus type-2); SPSS (Standard Package for Social Sciences); WHO (World Health Organization); 3Cs (closed spaces, crowded places or close contact).

Declarations

Ethics approval and consent to participate

The study was conducted in accordance with the Declaration of Helsinki. All participants agreed to participate before filling the questionnaire. The research project was approved by the Research and Ethics Committee of Microbiology Department, Kabul University of Medical Sciences (Approval code: KUMS/RECMD – 096).

Consent for Publication

Not applicable.

Availability of data and materials

The datasets used and/or analysed during the current study can be accessed from the corresponding author upon reasonable request.

Competing Interest

The authors declare that they have no competing interests.

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Author Contributions

A.N. developed the original idea, designed questionnaire, and wrote the manuscript draft; M.F.S and N.R assisted in questionnaire distribution, data entry and initial analysis; Y.A.M.E contributed in preparing the initial draft and analysis; M.Y.E contributed in data double check and discussion; A.A contributed in data analysis, results and discussion writing and manuscript proofreading. All authors have read and approved the final manuscript. A.A. is the corresponding author.

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References

1. Misbah, S., et al., *A systematic analysis of studies on corona virus disease 19 (COVID-19) from viral emergence to treatment*. Journal of the College of Physicians and Surgeons–Pakistan: JCPSP, 2020. **30**(6): p. 9-18.
2. Cash, R. and V. Patel, *Has COVID-19 subverted global health?* The Lancet, 2020. **395**(10238): p. 1687-1688.
3. Ling, G.H.T., et al., *Factors Influencing Asia-Pacific Countries' Success Level in Curbing COVID-19: A Review Using a Social–Ecological System (SES) Framework*. International journal of environmental research and public health, 2021. **18**(4): p. 1704.
4. Carvalho, B.R.d., *COVID-19 in Brazil: A Message to the World*. Revista Brasileira de Ginecologia e Obstetrícia, 2021. **43**: p. 238-239.
5. World Health Organization (WHO). *Updated WHO recommendations for international traffic in relation to COVID-19 outbreak*. 13 June 2021]; Available from: <https://www.who.int/news-room/articles-detail/updated-who-recommendations-for-international-traffic-in-relation-to-covid-19-outbreak>.
6. World Health Organization (WHO). *Afghanistan Situation*. 13 June 2021]; Available from: <https://covid19.who.int/region/emro/country/af>.
7. Ariana News. *Survey finds at least 10 million Afghans infected with COVID-19*. 29 May 2021]; Available from: <https://ariananews.af/survey-finds-at-least-10-million-afghans-infected-with-covid-19/>.
8. Lucero-Prisno III, D.E., et al., *Addressing COVID-19 in Afghanistan: What are the efforts and challenges?* Journal of Global Health, 2020. **10**(2).
9. Nemat, A., et al., *A survey of the healthcare workers in Afghanistan during the COVID-19 pandemic*. The American Journal of Tropical Medicine and Hygiene, 2020: p. tpmd201367.

10. Lucero-Prisno III, D.E., et al., *Who Will Pay for the COVID-19 Vaccines for Africa?* The American Journal of Tropical Medicine and Hygiene, 2021: p. tpmd201506.
11. Anadulo Agency, A.-P., LATEST ON CORONAVIRUS OUTBREAK,. *Afghanistan faces shortage of COVID-19 jabs, stops vaccination.* 13 June 2021]; Available from: <https://www.aa.com.tr/en/asia-pacific/afghanistan-faces-shortage-of-covid-19-jabs-stops-vaccination/2267110>.
12. World Health Organization (WHO). *Coronavirus disease (COVID-19) advice for the public.* 10 April 2021]; Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>.
13. Nemat, A., et al., *Knowledge, Attitudes, and Practices of Medical Students Regarding COVID-19 in Afghanistan: A Cross-Sectional Study.* Risk Management and Healthcare Policy, 2021. **14**: p. 1491.
14. OCHA, W.H.O. *Afghanistan.* 16 June 2021]; Available from: https://reliefweb.int/sites/reliefweb.int/files/resources/strategic_sitrep_covid-19_22_october_2020_final.pdf.
15. TOLONEWS. *Hospitals Struggle to Treat COVID Patients Amid Oxygen Shortage.* 15 June 2021]; Available from: tolonews.com/health-172842.
16. TOLONEWS. *1,647 New Cases of COVID-19, 78 Deaths Reported in Afghanistan.* 17 June 2021]; Available from: tolonews.com/health-172859.
17. TOLONEWS. *Afghanistan Reports 101 Deaths From COVID-19 in Last 24 Hours.* 17 June 2021]; Available from: <https://tolonews.com/health-172906>.
18. Adela, N., et al., *Knowledge, attitudes, practices of/towards COVID 19 preventive measures and symptoms: A cross-sectional study during the exponential rise of the outbreak in Cameroon.* PLoS neglected tropical diseases, 2020. **14**(9): p. e0008700.
19. Asnakew, Z., K. Asrese, and M. Andualem, *Community Risk Perception and Compliance with Preventive Measures for COVID-19 Pandemic in Ethiopia.* Risk Management and Healthcare Policy, 2020. **13**: p. 2887-2897.
20. Ferdous, M.Z., et al., *Knowledge, attitude, and practice regarding COVID-19 outbreak in Bangladesh: An online-based cross-sectional study.* PloS one, 2020. **15**(10): p. e0239254.
21. Setti, L., et al., *Airborne Transmission Route of COVID-19: Why 2 Meters/6 Feet of Inter-Personal Distance Could Not Be Enough.* International journal of environmental research and public health, 2020. **17**(8): p. 2932.
22. Lüdecke, D. and O. von dem Knesebeck, *Protective behavior in course of the COVID-19 outbreak—survey results from Germany.* Frontiers in public health, 2020. **8**: p. 567.

23. Clark, C., et al., *Predictors of COVID-19 voluntary compliance behaviors: An international investigation*. Global transitions, 2020. **2**: p. 76-82.
24. Ilesanmi, O. and A. Afolabi, *Perception and practices during the COVID-19 pandemic in an urban community in Nigeria: a cross-sectional study*. PeerJ, 2020. **8**: p. e10038.
25. Zhong, B.-L., et al., *Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey*. International journal of biological sciences, 2020. **16**(10): p. 1745.
26. Plohl, N. and B. Musil, *Modeling compliance with COVID-19 prevention guidelines: the critical role of trust in science*. Psychology, Health & Medicine, 2021. **26**(1): p. 1-12.
27. Yıldırım, M., E. Geçer, and Ö. Akgül, *The impacts of vulnerability, perceived risk, and fear on preventive behaviours against COVID-19*. Psychology, health & medicine, 2020: p. 1-9.
28. Ejeh, F.E., et al., *Knowledge, attitude, and practice among healthcare workers towards COVID-19 outbreak in Nigeria*. Heliyon, 2020. **6**(11): p. e05557.
29. Kamali Haghighi, F., et al., *Knowledge, Attitude, and Practice Toward COVID-19 Among Healthcare Workers in Shiraz, Iran*. Shiraz E-Med J, 2020. **21**(12): p. e108872.
30. Hossain, M.A., et al., *Healthcare Workers' Knowledge, Attitude, and Practice Regarding Personal Protective Equipment for the Prevention of COVID-19*. Journal of multidisciplinary healthcare, 2021. **14**: p. 229-238.
31. Hocking, A., C. Laurence, and M. Lorimer, *Patients' knowledge of their chronic disease: The influence of socio-demographic characteristics*. Australian family physician, 2013. **42**(6): p. 411.