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COVID-19 KNOWLEDGE AND AWARENESS: A STEP FOR CONTROL PRIOR TO THE PANDEMIC INVASION IN MALAKAND REGION, PAKISTAN

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Abstract

Background: Prior to invasion of the pandemic it was necessary to aware the people about the hazardousness and prevention of the diseases.

Aims: Knowledge and awareness of the general masses towards the prevention of COVID- 2019 were evaluated before the invasion of the pandemic in the region.

Methodology: The respondents participated in urban and rural areas voluntarily. The responses of the respondents were calculated as frequencies and percentages in both areas. The association of the respondents was tested by the Chi-Square test. P value less than 0.05% at 95% CI was considered significant.

Results: A total of 330 (n=199 urban and 131=rural) participants were included. The results revealed that practices for control had a significant association with ensuring social distancing; washing hands regularly with soap or sanitizers; avoiding touching mouth, eyes, and nose by covering nose and mouth with tissue paper during coughing or sneezing; disposing of tissue paper after use it; avoid routine activities and quarantining when infected /or suspected (P< 0.0001). Sources of information were also significantly related (0.0023). The novel coronavirus pandemic 2019 has spread globally. The people, religious scholars, leaders, and government agencies should organize programs for prevention and control, hence, the chances of the spread of COVID-19 were increasing.

Conclusions: It was concluded that this study will help in mobilization of local people and motivating local leadership with the active involvement of governmental and non-governmental organizations for the control of CoVID-19 on time.

Keywords: COVID-2019; Control measurements; Community involvement; Global health importance; Preventive measurements.

INTRODUCTION

The outbreak of CoVID-19 was first identified in Wuhan, Hubei, China, in December 2019. Chen et al., 2020 nCOVID-19 assessed severe pneumonia, pulmonary oedema, ARDS, and multiple organ failure was recently recognized in humans.

Up to April 5, 2020, over 1.24 million cases of covid-19 have been identified in more than 200 countries, resulting in more than 67,900 deaths while 256,000 cases have been recovered (COV. World meter, 2020; COVID-19 global cases, April 4, 2020). On the same date, the number of confirmed cases in Pakistan was more than 3000 with 170 recoveries and 45 deaths. The case count was reported in an increasing pattern day by day.

The pandemic caused by covid 19 challenged the preparedness of public health systems worldwide (Chen et al., 2020). At that time COVID-19 cases have been reported throughout Pakistan and the number of cases was increasing. To avoid the spreading further in the country, a lockdown system was imposed by the government. Withdrawal of public events, ensuring social distancing, placement of army medical units, and the construction of emergency hospitals were the steps to control CoVID-19. A dangerous viral illness called COVID-19 initially surfaced in Wuhan, China, in December 2019, putting the entire world on high alert. The mortality rate in the top-ranking Asian nations has received particular attention, with regard to Pakistan (Khan et al., 2021).

Mass quarantining was the only way to prevent CoVID-19 as the people in Pakistan were having no satisfactory defense against the potential of a global pandemic caused by CoVID-19. The lacking of a specific treatment or a vaccine (at that time), the psychological pressure, and economic stresses were the factors that should not be underestimated. CoVID-19 was perhaps the first novel infection with pandemic nature and one of the largest-scale social media use. It is important for the authorities that monitor the negative and positive impacts of social media and manage outbreaks of disease in the population.

Quick determination of the cases, on-time identification and proper management, rapid follow-up, strategy to control and prevent CoID-19 cases in local health care units, implementation of health-related principles, and awareness and risk communication in the population were the baseline factors as to control or otherwise minimize the infectious diseases in a population. Other infectious diseases were have been investigated in the region such as Khan et al., 2016; Khan et al., 2017; Khan et al., 2018; Arshad et al., 2019; Iqbal et al., 2021;Garedaghi et al., 2021;Rahman et al., 2021; Ulhaq et al., 2021; Rahman et al., 2022; Subhan et al., 2023; Khan et al.. 2023a;b but studies on covid 19 are lacking. It is therefore current research was mapped to investigate the knowledge and awareness of the general population in Malakand region, Pakistan prior to the pandemic.

METHODOLOGY

Study design

A cross-sectional study was conducted among the general population of the Malakand region, Pakistan between 1st to 30th March 2020 to aware people of covid-19. Participants comprised farmers, and education-related individuals and labor was voluntary and remained anonymous. The sample size was determined using a margin of error of 5%, and a confidence interval (CI) of 95%).

Sampling methods

Each of the participants who participated in the study was briefed about the study and signed verbal consent was obtained. Only those who fulfilled the inclusion and exclusion criteria and consented were included in this study.

Study population

Individuals from the general population were willing to participate actively in the study and to collaborate with the researchers from the University of Malakand and Saidu Group of Teaching Hospital, Swat. Individuals were related to farmers, education concerns, and the labor sector of the

population. Individuals related to each occupation group were contacted and informed about the study.

Measuring tool

A semi-structured questionnaire, which was written in English was used and translated into the local languages (Pashto/Urdu) during the operation. The first part includes six questions about personal data including age, sex, occupation, education, and zone live in. The second part is formed of seven questions to assess the knowledge on awareness of precautions for the disease. The third part comprised the sources of information-related questions. Semi-structured, face-to-face interviews were conducted individually with each of the participants. Each interview lasted up to 15 mins.

Ethical approval and informed consent

This research was approved as research thesis at master level during covid-19 pandemic through department of Zoology, University of Malakand, Pakistan, the data was finalized and submitted for publication. However, informed consent from participants was obtained and retained confidential and did not recognize the participants.

Data Analysis

Graph Pad version 5 was used for the statistical analysis presented by the Chi squire test. All the factors were presented categorically by using frequency and percentages. For the determination of the socio-demographic factors, preventive protocol, and sources of information descriptive statistic was used.

RESULTS

Participant's demographic characteristics

A total of 330 participants completed the questionnaire, a response rate was 82.5%. The age range of the participants was 18–65 years. Males, 58.4 %(n=193) were in majority than females 41.5%(n=137). The study group included 29.6% (n=98) farmers, 31.8 %(n=105) education-related, and 38.4% (n=127) labor. 64.8 %(n=214) can read and write while 35.2% (n=116) were cannot read and write. Of the respondents, 60.3 %(n=199) were from urban areas, and 37.8%(n=131) were from rural settings of the region (Table 1).

Table 1. Characteristics of the study respondents (n = 330).

Variables		Frequency	%
Age (Years)	18-40	210	63.6
	41-60	97	29.3
	61-& above	23	6.96
Sex	Male	193	58.4
	Female	137	42.8
Occupation	Farmers	98	29.6
	Education related	105	31.8
	Labor	127	38.4
Education	Can read and write	214	64.8
	Cannot read and write	116	35.2
Zone live in	Urban	199	60.3
	Rural	131	39.7

Table 2 demonstrates the responses of the local population regarding preventive measures before the infection occurred during the ongoing COVID-19 pandemic. In the response of "ensuring social distancing" 79% (n=261) believed yes. Regarding "regular washing of hands with any detergents"96.6 % (n=319) agreed. Avoiding the hands to touch the eyes, nose, and mouth (answer: yes) was voted by 94.2% (n=311). The rule covering the nose and mouth with a mask or tissue paper when coughing or sneezing (answer: yes) was favored by 95.7% (n=316). In response of throw the

tissue paper in the trash after using it (answer: yes) 93.6% (n=309) were accepted. Avoid routine activities such as going to school, travel, shopping, etc (answer: yes) was responded by 96% (n=317), and Quarantining (becoming isolated) when infected /or suspected (answer: yes) was agreed by 89.3% (n=295).

Table 2: Responses about knowledge and awareness of participants against COVID-19 in the Malakand region, Pakistan (N=330)

Q. No.	Questions	Number	%
1.	Did ensure social distancing during the pandemic outbreak of COVID-19 necessary? (answer: agree and strongly agree)	261	79.0
2.	Regular hand washing with soap or sanitizers (answer: yes)	319	96.6
3.	Avoiding touching the eyes, nose, and mouth (answer: yes)	311	94.2
4.	Covering nose and mouth with a mask or tissue paper when coughing or sneezing (answer: yes)	316	95.7
5.	Throw the tissue paper in the trash after using it (answer: yes)	309	93.6
6.	Avoid routine activities such as going to school, traveling, shopping, etc (answer: yes)	317	96.0
7.	Quarantining (becoming isolated) when infected /or suspected (answer: yes)	295	89.3

Table 3 describes the scores of the correct and incorrect responses in terms of frequency/percentage in both urban and rural areas. A total of 199 individuals from urban and 131 from rural areas have been interviewed. The correct responses were considered for each of the rules as "ensuring social distancing" favoured mostly in rural areas at 92.3% than urban 70.3%. When asked about “washing hands regularly with soap or sanitizers was answered yes by 97.7% and 95.9% in rural and urban areas respectively.

Table 3. Responses to questions about knowledge and awareness regarding prevention of COVID-19 during the pandemic outbreak among the local population of Malakand region, Pakistan.

Q.1: Ensuring social distancing during the pandemic outbreak COVID-19 (answer: agree and strongly agree)					
	Urban		Rural		
	n	%	n	%	P
Correct	140	70.3	121	92.3	< 0.0001
incorrect	59	29.7	10	7.70	
Total	199		131		
Q.2: Washing hands regularly with soap or sanitizers (answer: agree and strongly agree)					
Correct	191	95.9	128	97.7	0.3917
incorrect	8	4.1	3	2.3	
Total	199		131		
Q.3: Avoiding touching the eyes, nose, and mouth (answer: agree and strongly agree)					
Correct	185	92.9	126	96.1	0.2194
incorrect	14	7.1	5	3.9	
Total	199		131		
Q.4: Covering nose and mouth with a mask or tissue paper when coughing or sneezing (answer: agree and strongly agree)					
Correct	188	94.4	128	97.7	0.1534
incorrect	11	5.6	3	2.3	
Total	199		131		
Q.5: Throw the tissue paper in the trash after using it (answer: agree and strongly agree)					
Correct	182	91.4	127	96.9	0.0456
incorrect	17	8.6	4	3.1	
Total	199		131		
Q.6: Avoid routine activities such as going to school, traveling, shopping, etc (answer: agree and strongly agree)					
Correct	191	95.9	126	96.1	0.9260
incorrect	8	4.1	5	3.9	
Total	199		131		
Q.7: Quarantining (become isolated) when infected /or suspected (answer: agree and strongly agree)					
Correct	169	84.9	126	96.1	0.0012
incorrect	30	15.1	5	3.9	
Total	199		131		

Table 4. Responses of the local population concerning sources of information regarding CoVID-2019 pandemic in the district of Swat, Pakistan

Sources of information	Urban (n=199)	Rural (n=131)	Chi-squire (P value)
TV	132(66.3)	105(80.1)	0.0023
Newspaper	13(6.53)	12(9.16)	
Internet	20(10)	8(6.10)	
Face book	34(17)	6(4.58)	

DISCUSSION

Direct contact and droplets of COVID-19 patients are the main factors in the spreading of the disease. The mean incubation period of this infection is 5.5 days and can reach till 14th day of infection (Salman et al., 2020). The day 11 to 12 are the symptoms showing the period of the disease? Temperature, fatigue, pain in muscles, sore throat, and dry cough often with diarrhea and vomiting are the most common symptoms to appear after ending the incubation period (Guo *et al.*, 2020). Pneumonia, acute respiratory distress syndrome (ARDS), and shock are the leading factors in the hospitalization of patients (Akalu *et al.*, 2020).

As of 1, May 2020 more than 3.25 million cases of COVID-19 were documented and more cases have already exceeded in the world. The first COVID-19 case was reported on 26 February 2020 in Karachi and this pattern of increase is remarkably high that within 2 months of duration, the prevalence reached 16,800 cases confirmed. As the number increases dramatically this rapidly increasing situation causes anxiety in the public.

The majority of the respondents voted to agree and strongly agree when asked the question "avoid normal activities" and “be quarantined”. Quarantine is a process through which people may be isolated during the catastrophic nature of an epidemic or outbreak of an infectious disease. This practice first began in the 14th century to protect coastal nations from the epidemic of plague (Tachfouti et al., 2012). Quarantine is a social distancing measure to limit the movement of people, animals, and goods that are the probable source of contagious disease epidemics. Usually, the quarantine period of an infectious disease is based on the incubation period of the causative agent. The incubation period of CoVID-19 has ranged from 2 to 14 days, it is therefore a wide quarantine has been imposed locking down more than 185 countries around the world and the list is still growing. The infectious rate appears to be alarming in, United States, Spain, Germany, the United Kingdom, and France as of date. This may be due to asymptomatic carriers from other parts of China where the travel ban was not imposed or due to escaped carriers before the implementation of quarantine measures. Even the epicenter of the outbreak Hubei, Province in China which contains 90% of the cases was suggesting the quarantining.

It is necessary to wash hands frequently with soap for at least 20 sec”. In our study, 89.9%, 3.05% agree, 6.03%, 94.6% strongly agree and 4.02%, 2.29% disagree. The same question was answered by 91.5% and 93.6% of respondents' pre and post-tested individuals (Moradzadeh et al., 2020). Similar research was conducted among health workers and reported that 82.2% of physicians, 83.3% of nurses, 89.2% of pharmacists, and 93.3% of technicians favored washing hands with soap for at least 30 seconds can help to prevent the MERS-CoV infection (Albarrak *et al.*, 2021). Washing your hands with hand sanitizers was agreed upon by 87.1% of the respondents (Cui, & Shi, 2019). Washing hands with soap and water for at least 30 secs can help in the prevention of transmission of the disease was favored by 94% of the respondents (Khan *et al.*, 2014). Using soap and water to wash my hands continuously 91.5% of the respondents voted (Nour *et al.*, 2015).

It was estimated that promoting the use of face masks and reduced traveling can reduce 10% the transmission rate of covid 19 infection (Jhang *et al.*, 2020). Based on the question” Avoid routine

activities such as going to school, travel, shopping when symptoms appear" 83.4%, 10.6% agree, 12.5%, 85.4% strongly agree and 4.02%, 3.81% disagree. In response to "Quarantining (become isolated) when infected /or suspected" 48.7%, 27.4% agree, 36.1%, 67.9% strongly agree and 15%, 3.81% disagree. All the factors were significantly P<0.005).

In the present study In response to "Avoiding touching the eyes, nose, and mouth" 70.8%,17.5% agree, 22.1%,78.6% strongly agree and 7.03%,3.81% disagreed in urban and rural areas. Answering the question "Covering nose and mouth with a mask tissue paper when coughing or sneezing" 86.9%, 6.10 agree, 7.53%, 91.6% strongly agree and 5.52%, 2.29% disagree were recorded. In response to "Throw the tissue paper in the trash after using it" 76.3%, 14.5% agree, 15%, 82.4% strongly agree and 8.54%, 3.05% disagree.

In response to "Avoiding touching the eyes, nose, and mouth" 70.8%, 17.5% agree, 22.1%,78.6% strongly agree and 7.03%,3.81% disagreed during pre and post-intervention. Similar results were noted by Zhong *et al*. 2020). Answering the question "Covering nose and mouth with a mask or tissue paper during coughing or sneezing" 86.9%,6.10 agree, 7.53%,91.6% strongly agree and 5.52%,2.29% disagree were recorded. In response to "Throw the tissue paper in the trash after using it" 76.3%,14.5% agree, 15%,82.4% strongly agree and 8.54%, 3.05% disagree. Gowns, gloves, and masks must be used when dealing with MERS patients 58.8% strongly agree, 37.3%agree and 0% disagree (Khan et al., 2014). The usage of a mask is necessary to prevent the spreading of infectious disease agents including COVID-19.

Conclusions

This study revealed that timely management of CoVID-19 required the active engagement of governmental and non-governmental groups, as well as the mobilisation of local residents and inspiring local leadership.It was proposed specially that the Islamic principles must be adopted during pandemic. Very little time before the emergence of COVID-19 the data was collected through direct contact and communication. This was the limitation that we could not reach the far-flung areas of the region. However, most of the targeted areas in the region were covered and the questionnaire was filled out. However informations on absolute origin and host/reservoirs of the covid-19 are lacking (Khan et al., 2023).

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Competing interest

No conflict of interest was found among the authors

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