Knowledge, Attitude, and Practice Trends Towards Covid-19 Pandemic: Comparison Between Individuals with Medical and Non-Medical Backgrounds

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ABSTRACT

Introduction: Coronavirus disease 2019 (COVID-19) is a highly infectious viral disease with high morbidity and mortality. Successful control of COVID-19 requires an approach of safety and cautious behavior of the general public as well as healthcare workers which can be attained by enhancing awareness based on scientific evidence. **Aims & Objectives:** To assess the knowledge, attitude, and practice (KAP) of Covid-19 safety precautions in people with a medical and allied health background and compare them with non-medical people from the local population. **Place and duration of study:** Study was conducted at Central Park Medical College from July 2020 to September 2020. **Material & Methods:** A total of 976 people participated in the study and were segregated into two groups; Group 1 (People having medical background; n=388) and Group 2 (People having non-medical background; n=588) to compare KAP scores between Group 1 and Group 2 by using validated scales on Google forms. Data were presented as percentages and frequencies. Independent sample t-test was used to analyze statistical differences. **Results:** Higher knowledge scores were observed for group 1 as compared to group 2 (9.92 $\pm$ 2.27 v/s 9.16 $\pm$2.53; p= 0.001). Better knowledge, good attitude and safe practice trends were observed in group 1 (medical background) as compared to group 2 (non-medical background). **Conclusion:** Individuals with a medical background are more knowledgeable and exhibit a cautious attitude and better safety practices regarding COVID-19 as compared to the general population. There is a need to educate the general population about safety measures for COVID-19 including social distancing, usage of masks, self-isolation, avoidance of gatherings and others.

Key words: Covid-19, knowledge, attitude, practice, medical, general population.

INTRODUCTION

Corona virus disease 2019 (COVID-19) is a highly infectious viral disease that was first discovered in Wuhan, China in December 2019[1]. A series of cases presented with pneumonia of unexplained cause along with other symptoms. It was later found to be caused by a novel strain of corona virus, called severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) that was contracted from wild animals. Since its discovery, the disease has rapidly turned into a global pandemic, affecting almost all countries around the world [2]. The primary clinical symptoms of COVID-19 include fever, dry cough, fatigue, myalgia, dyspnea, nausea, diarrhea, and vomiting as well as the loss of taste and smell, congestion, and runny nose [3]. In severe cases, it has proved to be fatal, worsening from acute respiratory distress syndrome, septic shock, metabolic acidosis, coagulation dysfunction and bleeding, to death. Higher mortality from COVID-19 has been seen in older adults, as well as in patients suffering from co-morbid conditions including diabetes, hypertension, chronic lung, heart, and kidney diseases [4-6].

SARS-CoV-2 virus which causes COVID-19 is highly contagious and even the most developed countries are having a difficult time controlling its spread. Therefore, not surprisingly, for Pakistan which is still a developing country, the pandemic has proven to be an enormous challenge. Pakistan has experienced surge in COVID-19 cases and deaths thrice since the beginning of the pandemic[7].

Although several vaccines are available now but so far, only an insignificant number of people in the society have been vaccinated. Therefore, there's still a great need of adopting safety and preventive practices. Millions of lives may be saved by stopping the viral transmission in time and preventative measures are of utmost importance. In that regard, strategies implemented by the Pakistani government include nationwide and smart regional or local lockdowns, closure of all educational institutions, enforcement of social distancing, quarantine arrangements for people at high risk, and travel bans. However, despite such measures, the number of cases and fatalities has kept on increasing [8]. Total number of confirmed cases in Pakistan has reached 705,517, with 15,124 deaths and 623,399 recoveries as of April 8, 2021.[8]

Successful control and minimization of morbidity and mortality due to COVID-19 require a significant change in the behavior of the general public as well as healthcare workers. Such a change can only be brought about by imparting correct knowledge and perceptions about the virus and disease. Thus, it is important to understand the knowledge, attitudes, and practices of measures that may change the pattern of their daily lives significantly, and this can be achieved through knowledge, attitude and practice (KAP) studies [9-11]. In order to understand how far the general public, medical specialists, and other high-risk groups such as patients of chronic illnesses, know about COVID-19, as well as to ascertain their attitudes and practices towards it, a knowledge, attitude and practice (KAP) survey must be conducted to evaluate current programs and identify effective plans for bringing change in the behavior and attitudes of the community. The objective of the present work is to evaluate the knowledge, attitude and practice of the medical and non-medical communities of Pakistan.

MATERIAL AND METHODS

An online survey was conducted to assess the knowledge, attitude, and practice (KAP) trends between the medical community and the general population (non-medical population). The study was conducted at Central Park Medical College Lahore Pakistan and approved by the institutional review board (CPMC/ME/2020-984) and an ethical clearance letter (CPMC/IRB-Number/1742) was issued. Study information was shared with all participants and consent was obtained online before administration of the study questionnaire. The questionnaire was developed on the google forms platform [12] and the link was circulated online to potential participants via email and through advertisement on digital social media including Facebook and WhatsApp. This data collection strategy was employed to ensure safety and convenience of the participants as well as avoid the risk of spread of COVID-19 through interpersonal contact between the researchers and the participants. For this pilot exploratory study, non-random convenience sampling was employed. A total of 976 people participated in the study and were segregated into two groups; Group 1 (People having medical background; n=388) and Group 2 (People having non-medical background; n=588). The medical background was defined as undergraduate medical students as well as undergrad allied students while non-medical background was defined as students of other professional graduate programs including law, accounting and engineering. Study was conducted from July 2020 to September 2020 and all participants had good knowledge of computers and Google forms as this was considered a basic pre-requisite for enrolling in the study.

For the assessment of knowledge about Covid-19, the questionnaire given and validated by Zhong et al. [13] was used that comprised of 12 questions which were to be answered in true, false and I don't know and the correct answer was awarded 1 point while the incorrect response and the I don't know response were each awarded 0. Question number 6 and 9 were reversely scaled. The questionnaire's score ranged from 0 to 12 with a greater score indicating higher knowledge and a lower score reflecting lower knowledge of Covid-19. For the evaluation of attitude towards COVID-19, the 2-item questionnaire developed and validated by Goni et al.[13,14] was used. Practices were evaluated using five Likert-item questions developed jointly by the World Health Organization (WHO) and the Ministry of Health, Uganda and later endorsed by Ministry of Health, Pakistan as recommended practices for prevention of COVID-19 transmission i.e., hand washing, keeping a social distance (1 meter apart), avoiding crowded places, avoiding touching of the face, and avoiding handshakes. The responses for each item were; never, occasional and always, each weighing 1, 2, and 3 points respectively. Demographic data including age and gender as well as the history of Covid-19 were also recorded.

Statistical analysis:
Data was assessed for errors twice and entered into SPSS version 23 anonymously. Descriptive data were presented as percentages and frequencies. Knowledge scores were calculated as mean $\pm$ standard deviation and were compared between the

groups by employing an independent sample t-test. P-values less than 0.05 were interpreted as significant.

RESULTS

The mean ages for group 1 (medical background) and for group 2 (non-medical background) were 23.97 ± 8.85 and 22.35 ± 4.91 with age range of 18 to 60. Gender distribution, the ratio of COVID-19 positivity, and the trend of quarantine and self-isolation were observed as explained in Table-1. The percentage of COVID-19 positivity was greater in group 1 when compared to group 2 as explained in Table-1. Similarly, self-isolation was also more common in group 1 while the percentage of self-quarantine was greater in group 2 (non-medical background) as explained in Table-1.

Parameters	Group 1 (n=388)	Group 2 (n=588)
Gender Distribution	203 Males (53.32%), 185 Females (46.68%)	288 Males (48.98%), 200 Females (51.02%)
Covid positivity	8.25% (n=32)	6.80% (n=40)
Self-Quarantined	49.48% (n=192)	50.34% (n=296)
Self-Isolation	84.53% (n=328)	80.95% (n=476)

Table-1: Comparison of gender, COVID-19 positivity, self-quarantine & isolation between the groups.

There was a marked difference between the knowledge score for group 1 and group 2 with the mean difference and p-value of 0.760 and <0.001 respectively suggesting higher scores of knowledge about COVID-19 in group 1 (medical background) by using independent sample t-test. The percentage for true response of knowledge-based questions was assessed between two groups (Table 2). Knowledge-based questions ranging from K1 to K12 revealed a higher percentage of knowledge regarding all the knowledge-based situations with higher matching percentage when compared with group 2 (non-medical background). Similarly, a good attitude was observed in the medical community about beating the covid-19 war by Pakistan but uncertainty in the medical community for complete control of COVID-19 was also there as compared to group 2 as elaborated in table 2 in A1 and A2. Good practice trends as avoidance of crowded places and regular use of masks were much greater in group 1 (medical background) when compared to group 2 (non-medical background) in table 3 sections P1 and P2 as narrated in Table-2.

Question No.	Question Description	Percentage of Correct Response % (n)	
		Group 1 (n=388)	Group 2 (n=588)
K1	Main symptom of Covid includes cough, fatigue and fever.	93.81% (364)	88.43% (520)
K2	Stuffy nose is less common in Covid infection.	69.07% (268)	51.02% (300)
K3	There currently is no effective cure for Covid-2019, but early symptomatic and supportive treatment can help most patients recover from the infection.	92.78% (360)	91.15% (536)
K4	No proper Medicine for Covid at the time.	83.50% (324)	68.02% (400)
K5	Does every infected develops the disease.	53.60% (208)	36.05% (212)
K6	Contacting with pets is a cause of Covid.	78.35% (304)	65.30% (384)
K7	Virus spreads via respiratory droplets.	90.72% (352)	82.99% (488)
K8	Mask is the prevention to Covid.	86.59% (336)	81.63% (480)
K9	It is not important for youngs to take preventive measures.	86.59% (336)	76.87% (452)
K10	Crowd be avoided to avoid covid.	91.75% (356)	89.79% (528)
K11	Isolation of affected is effective way to reduce spread.	91.75% (356)	90.47% (532)
K12	People having contact with infected should have isolate themselves.	92.78% (360)	89.79% (528)
A1	Do you believe that COVID-19 will successfully be controlled?	59.79% (232)	65.30% (384)
A2	Do you believe that Pakistan can win the battle against the COVID?	73.19% (284)	13.60% (80)
P1	Are you visiting crowded places?	71.13% (276)	65.98% (388)
P2	Are you wearing masks regularly while leaving home?	95.87 (372)	89.79% (528)

Table-2: Comparison of knowledge, attitude & practice trends between the groups.

For a detailed analysis of practice trends of preventive measures 5 items questionnaire by WHO was employed as narrated in table 3. Higher trends of avoidance of public places (50.51% v/s 50.34%), use of masks (75.85% v/s 68.02%), refrainment of

handshakes (64.94% v/s 59.86%), washing of hands (83.50% v/s 77.55%), and avoidance of COVID-19 patients and suspected cases (67.01% v/s 72.8%) were present in both groups but marked higher incidence was there in Group 1 having medical background when compared with group 2 (non-medical background) as explained in Table-3.

Question No.	Question Description	Percentage of Correct Response [% (n)]		
		Group 1 (n=388)		
		Never	Occasional	Always
aP1	Visit to crowded place?	50.51% (196)	46.39% (180)	3.09% (12)
aP2	Use of mask while contacting with patients?	4.12% (16)	20.61% (80)	75.85% (292)
aP3	Refrainment from hand shake.	7.21% (28)	27.83% (108)	64.94% (252)
aP4	Washing of hand after contact with affected?	1.03% (4)	15.46% (60)	83.50% (324)
aP5	Avoidance of people having symptoms of Covid.	10.30% (40)	22.68% (88)	67.01% (260)
		Group 2 (n=588)		
aP1	Visit to crowded place?	50.34% (296)	45.57% (268)	4.08% (24)
aP2	Use of mask while contacting with patients?	17.00% (100)	14.96% (88)	68.02% (400)
aP3	Refrainment from hand shake.	9.86% (58)	30.61% (180)	59.86% (352)
aP4	Washing of hand after contact with affected?	10.20% (60)	12.24% (72)	77.55% (456)
aP5	Avoidance of people having symptoms of Covid.	13.60% (80)	13.60% (80)	72.8% (428)

Table-3: Analysis of practice trends of COVID-19 preventive measures between groups.

DISCUSSION

COVID-19 has proven to be a serious threat to communities all over the world and has been a test of the capabilities of their governments as well as their healthcare systems. While it may have been brought under control in some countries over this period, in others it is still rampant and it is vital to have an understanding of the disease and its transmission and how it can be prevented and to study how the general population is dealing with it in order to implement better strategies for control. This study was done to assess the KAP of the Pakistani population, of people with medical background and without. It was found that the group with the medical background was naturally more knowledgeable and aware, with a better attitude and with better practices regarding Covid-19. Poorer knowledge of disease will lead to poorer practices. This is consistent with a study based in Ethiopia, by Akalu et al., and also another done in China by Zong et al.[15, 16] It was also not surprising to find that there was more positive cases of COVID-19 infection among healthcare workers (group 1 participants) as they are more exposed to patients and have to work in hospitals and healthcare facilities compared to the general population (group 2) due to patient exposure,[17] carrier exposure of carriers[18] and lack of preventive measures in hospitals as poor sanitation and management of hospital waste and also the inadequate use and availability of Personal Protective Equipment (PPE).[18, 19]

People in group 2 were less aware of symptoms of COVID-19 (51.02%) than those with medical background (69.07%) and group 1 participants also seemed less knowledgeable about symptoms than could be expected. The reason for this could be because of lower literacy rates[20] in Pakistan, lack of proper health education, lower interest, and lack of social media awareness at mass level. For group 1, it may be that there are not enough programs or courses being set up to educate the medical community and spread awareness of COVID-19 symptoms. However, people in group 2 were also not lacking in knowledge completely as due to television and media coverage, as well as due to social media usage during the period of lockdown, the people who have access to these have gained adequate knowledge and awareness about the disease[21] and its transmission and how to protect themselves. Even so, the imposition of lockdown as well as other measures by the government has proven to be necessary and an important factor in preventing worse disease rates in the country. At the time, there is proper vaccine[22] in the market but not everyone has got vaccinated [20, 21], and the danger is still there. Despite the efforts being made, it may be some time before an effective distribution of vaccine is made[22,23] And when it is, there is a possibility of the provided immunity being short-lived.[24, 25]

It seems that a moderate number of individuals from both groups have occasionally been to crowded places (group 1= 46.39%, group 2= 45.57%) which may have been unavoidable for certain situations as healthcare workers and doctors as well as medical students after the opening of some colleges and

universities, and for others who have necessary business with the outside world, but this percentage could also indicate a lack of awareness about contracting the disease from being in close proximity or a lack of appropriate caution.[26,27] However, in both groups, a majority percentage of people have avoided public places, used masks, refrained from shaking hands, washed hands after contact, and avoided patients of Covid-19 or individuals suspected to have it.

It was found that people in group 2 had very little confidence in Pakistan winning the battle against COVID-19, possibly due to lack of trust in healthcare system. Pakistan is still a developing country, and it has been difficult to predict the affect the virus can have on different populations and the impact on COVID-19 after implementation of standard operating procedures (SOPs), enforcement of necessary protocols by the government, and the facilities set up for treatment and care.[24,25,28] Besides that, since people can be infected and not have any symptoms, that is, being asymptomatic carriers,[29,30] it is imperative that SOPs are followed.

There are a few limitations to this survey that must be acknowledged, such as the reach of this questionnaire being to groups who have access to Google forms and knew how to fill them, possibly leading to selection bias. Participants with low technical aptitudes, and with decreased proficiency in the English language may have had trouble with filling the google forms and choosing the proper responses. Another limitation may be that this survey is based on self-report, and in its answers lacks the certainty of focused personal and detailed interviews and discussion, and other multi-dimensional methods. The respondents might have given socially acceptable answers which would make the responses unreliable. The use of a small sample size is one more limitation of the study.

It is recommended that there be strict adherence to health regulations of the country, the government must strengthen its health systems and improve surveillance to combat non-compliance. Proper tracing of contacts should be done, as well as proper isolation of infected patients. Prevention measures should be followed, from personal levels, such as improving and maintaining personal hygiene and avoiding crowded places, to larger organizational levels, such as closure of markets and educational institutions, and suspension of large gatherings and meetings. Lastly, the government and relevant health authorities should work together with the media to dispel any myths or misconceptions regarding the disease, or vaccination and treatments, and provide accurate and timely information to the masses.

CONCLUSION

Despite the knowledge levels of both groups, and the positive streak of awareness, caution, and good practices achieved over this period, there is still a need for promotion of social distancing as the virus has not yet been completely subdued, and there is always a risk of the number of cases rising further especially with the lifting of lockdown and activities being cautiously resumed all over the country.

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