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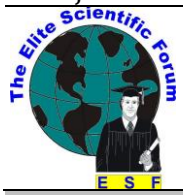

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RESEARCH ARTICLE

A Cross-Sectional Online Study in Context of Knowledge, Attitude and Practices of the General Public of Karachi, Pakistan on COVID-19 Pandemic

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ABSTRACT

The COVID-19 pandemic has badly affected the human health and exerted a negative impact on national and global economies. The understanding, observations and responses of the general public during COVID pandemic may help in discussion about healthiness risk and encourage acquiescence with standard guiding principles. Therefore, the study was aimed to measure the Knowledge, Attitude and Practice (KAP) of an individual regarding the COVID-19. However, the present learning was in the setting of a web based cross sectional study conducted to evaluate the KAP among the general public via the dissemination of online Performa. In this context, a questionnaire was designed that was comprised into various scoring divisions to calculate the KAP. The KAP response was achieved from 842 persons and of this strength, 344 were male and 498 responses were attained from females. The Percentages and the frequencies were reported and calculated for each of the response and the chi-square test was applied to find the association (considering p-value >0.05 as significant). The questionnaire was executed to the age of 22 years and above. On the basis of revealed knowledge (K1-7), the result of K3 and K7 were found highly significant (p-0.001), whilst the K4 response was significant (P≥0.05). The rest Ks were reported non-significant. Likewise, attitude (A1-5) was reported with high percentage in females and overall it was revealed highly significant (p-0.002) in A5 response. In general, attitudes among genders were found comparatively encouraging and meaningful. Moreover, practices (P1-4) regarding COVID-19 showed week response to the sub divisions of P1-4 but, P2 and P3 were showed highly significant i.e. p-0.00 in both cases. Hence, majority of the general public presented good response against KAP regarding the COVID-19 pandemic. Additionally, incorporation of good practices and knowledge in life can enhance and maintain the population health. In this respect, the policymakers of government organizations have performed well in pointing the grass root populations having no education and un-aware workers via health promotional activities.

INTRODUCTION

An extremely contagious infectious respiratory disease, generally known as Coronavirus disease becomes a worldwide public health concern because of its rapid spread globally and locally. On December 31, 2019, a bunch of patients of pneumonia with unknown cause has been firstly reported in Wuhan, the city of China (Huang et al., 2020; WHO, 2020). Upon investigation and analysis of the respiratory samples of cases the Wuhan Institute of Virology (WIV) acknowledged this deadly causative agent as novel Corona Virus - 2019 and Peoples Republic of China and Center for Disease Control and Prevention (CDC) declared it as novel coronavirus pneumonia (NCP) (Zhou et al., 2020; Wang et al., 2020). Later, the virus was specifically named as novel severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) by the International

Committee on Taxonomy of Virus (Wang et al., 2020) and World Health Organization (WHO) officially called it as COVID-19. Due to the emergency situation, WHO declared COVID-19 as the sixth Public Health Emergency of International Concern (WHO, 2020).

However, the province of Sindh, which covers a huge and well-populated city i.e. Karachi, has been severely affected, with more than 5000 cases and hundreds of deaths, respectively (Anonymous, 2020). To keep the virus transmission rate as low as possible and thereby lessen the burden on the healthcare system, full implementation of prevention measures such as social distancing, maintaining personal hygiene and adhering to stay-at-home orders were critical (Singhal, 2020). The public's willingness to follow these recommendations is determined by their understanding and perceptions of the problem (Zhong et al., 2020). It was not uncommon to witness misinformation and erroneous beliefs circulating through the public during pandemics or times of emergency, adding to people's concerns and leading them to make poor decisions. They are unable to comprehend the severity of the condition due to a lack of awareness, prompting them to seek help late (Liu et al., 2013). As a result, identifying misconceptions at the appropriate moment will aid in rectifying residents' perceptions and attitudes concerning the pandemic. All of these strategies have the potential to minimize the severity of the epidemic in the country. To fight against this deadly viral disease, with the available resources following measures were taken by the Government of Pakistan which includes the setup of the quarantine centers, isolation wards in the tertiary care hospitals, providing testing facility (rRT-PCR), treatment facility and awareness to the public all over across the country (Anonymous, 2020). Considering the abrupt increase of positive cases of SARS-CoV-2 disease in Pakistan, this study was conducted to assess and identify the current status of knowledge, attitude, practices (KAP) and the behavioral and life style adaptation of general public of Karachi, Pakistan.

MATERIALS AND METHODS

Study design

The present study was conducted on web-based cross sectional study to evaluate the KAP among the general public of Karachi city via the dissemination of online performa. In this context, a structured questionnaire, contained multiple scoring section was distributed electronically among the general public to analyze the KAP. An online questionnaire was produced in English and Urdu language and designed by using the tool Google forms. The entire participation of an individual was kept confidential.

Collection and processing of data

In fact, the physical population based survey was not practicable due to nation-wide lockdown situation in Karachi and even globally. So, in this online survey, 842 participants i.e. general public were included. Out of total, 344 males and 498 female participated in this survey with the age of 22 years and above. The independent variables were the individual's and their sources of information on COVID-19 while, the dependent variables of the study were Knowledge, Attitude and Practices of the respondents towards COVID-19.

Questionnaire and scoring of KAP

The questionnaire was consisted of multiple closed ended questions having various options to select. The knowledge (K) consist of seven (07) questions related to COVID-19 cause, recovery, prevention, transmission of infection, protection and control etc. All questions have three (03) options to select according to the individual's knowledge. Similarly, the analysis of attitude among general public was performed by five (05) questions with five opted section. Each section against A1-5 was consisted on strongly agree, agree, neutral, disagree and strongly disagree. Furthermore, in context of assessing the practice, composed on four questions (P1-4) and each question carried three options such as Always, Never and Sometimes.

Statistical analysis

The obtained results were evaluated by using the SPSS version 21 software and it was also presented in the percentages and the frequencies for all the questions.

RESULTS

In this study, females showed more responses than males in filling the KAP survey performas on COVID-19. Overall survey was recorded with good knowledge, attitude and practices among the general public. The results and scoring of each response is as under.

Knowledge scoring on COVID-19

In this setting and related to K1 response on different sections revealed, most of the participants were well aware that the virus is the cause of COVID pandemic and this percentage among mix population was recorded 76.48% followed by the option *poor hygiene* and *I don't know* with percentage of 15.32% and 8% respectively. Nearly, 88.36% respondents against K2 have knowledge that the COVID affected person can be recovered; the sections of K2 were reported significant ($P \geq 0.05$), and whereas 92.51% and 93.82% participants know against K3 and K4 that the infection can be prevented to avoid the sitting in crowded places and isolation is the best way to reduce the spread of infection respectively. However, K3 and K4 were found highly significant ($P < 0.001$).

Table 1: Knowledge of participants related to COVID-19

Knowledge	Questions	Options		Number of person		Total Percentage	p-Value
				Male	Female		
K1	What are the causes of COVID-19?	a	Virus	257	387	*76.48%*	0.08
		b	Poor Hygiene	54	75	*15.32%*	
		c	I Don't Know	37	32	*8%*	
K2	Can a COVID affected person be cured?	a	Yes	297	447	*88.36%*	0.05
		b	No	17	19	*4.27%*	
		c	Don't know	34	28	*7.36%*	
K3	To prevent the infection by COVID-19, individuals should avoid going to crowded places	a	True	310	469	*92.51%*	0.001
		b	False	19	19	*4.51%*	
		c	Don't know	19	6	*2.96%*	
K4	Isolation and treatment of people who are infected with COVID-19 virus are effective ways to reduce the spread of the infection	a	True	314	476	*93.82%*	0.001
		b	False	19	8	*3.20%*	
		c	Don't know	15	10	*3%*	
K5	The COVID-19 infection spreads via respiratory droplets of infected individuals	a	True	271	407	*80.52%*	0.24
		b	False	19	19	*4.51%*	
		c	Don't know	58	68	*15%*	
K6	Wearing medical mask can prevent one from acquiring infection by the COVID-19.	a	True	294	419	*84.67%*	0.43
		b	False	30	50	*9.50%*	
		c	Don't know	24	25	*5.81%*	
K7	Persons with COVID-19 cannot transmit infection to others when a fever is not present	a	True	41	58	*11.75%*	0.83
		b	False	249	361	*72.44%*	
		c	Don't know	58	75	*15.79%*	

Table 2: Attitude of participants related to COVID-19

Attitude	Questions	Options		Number of persons		Total Percentage	p-Value
				Male	Female		
A1	Frequently washing my hands using soap and sanitizers can prevent me from getting COVID-19	a	Strongly agree	149	199	*41.33%*	0.58
		b	Agree	152	220	*44.18%*	
		c	Neutral	36	63	*11.75%*	
		d	Disagree	6	9	*1.78%*	
		e	Strongly disagree	5	3	*1%*	
A2	Wearing a face mask can protect me from getting COVID-19 infection.	a	Strongly agree	137	192	*39.07%*	0.18
		b	Agree	153	220	*44.29%*	
		c	Neutral	39	64	*12.23%*	
		d	Disagree	10	15	*2.96%*	
		e	Strongly disagree	9	3	*1%*	
A3	I will go into quarantine if I come into contact with a patient of COVID-19	a	Strongly agree	178	251	*51%*	0.26
		b	Agree	119	161	*33.25%*	
		c	Neutral	25	53	*9.26%*	
		d	Disagree	19	25	*5.22%*	
		e	Strongly disagree	7	4	*1.30%*	
A4	When call upon, I will willingly participate in the front line of COVID-19 pandemic response	a	Strongly agree	121	146	*31.71%*	0.3
		b	Agree	116	185	*35.74%*	
		c	Neutral	77	121	*23.51%*	
		d	Disagree	22	32	*6.41%*	
		e	Strongly disagree	12	10	*2.61%*	
A5	Pakistan is in a good position to contain Covid19 Pandemic?	a	Strongly agree	60	53	*13.42%*	0.002
		b	Agree	111	148	*30.76%*	
		c	Neutral	95	176	*32.18%*	
		d	Disagree	44	83	*15.08%*	
		e	Strongly disagree	38	34	*8.55%*	

The respondents 80.52% and 84.67% believed against the question K5 and K6, respectively which was found non-significant in both cases. The response against K7 was not found satisfactory, as the 72.44% respondents showed their response that the COVID-19 cannot be transmitted to others when fever is not present. The all responses with percentages and P-values are shown in Table 1.

Attitude scoring on COVID-19

Overall scoring was found with positive responses that showed, the respondents have awareness regarding the attitude (A1-5). The calculated survey against A5 was revealed highly significant (p-0.002). Whereas, a very few participants responded against disagree and strongly disagree against the different questions (A1 to A5). In short, all respondent responses were shown in Table 2.

Table 3: Practice of participants related to COVID-19

Practices	Questions	Options		Number of persons		Total Percentage	p-Value
				Male	Female		
P1	In recent days, I have maintained a social distance of 1 meter with anyone coughing or sneezing	a	Always	154	225	45%	0.88
		b	Never	28	36	7.60%	
		c	Sometimes	166	233	47.38%	
P2	In recent days, I have worn a mask when getting outside home	a	Always	231	437	79.33%	0
		b	Never	11	8	2.25%	
		c	Sometimes	106	49	18.40%	
P3	In the recent days, I have refrained from shaking hands	a	Always	122	238	42.75%	0
		b	Never	51	38	10.57	
		c	Sometimes	175	218	46.67%	
P4	In recent days, I have washed my hands before touching my face	a	Always	123	181	36.10%	0.29
		b	Never	45	47	11%	
		c	Sometimes	180	266	52.96%	

Practice scoring on COVID-19

On the basis of revealed results (P1-4), the overall percentages of positive responses were week among the population. Whereas, P2 and P3 were recorded highly significant (p-0.00). The whole responses against practice were recorded in Table 3.

DISCUSSION

The outbreak of coronavirus rapidly affected the public health throughout the world. Pakistan is a developing country whose backbone is Karachi in terms of financial and industrial center and revenue generation for the whole country. Public health education is very important in the prevention and control of COVID-19 and preparedness of public against the emergency or any critical situation. So, the present study was designed to assess the perspectives and KAP of the general population of the Karachi about the COVID-19. The findings of this survey proposed that during the pandemic, the awareness sessions were well promoted, preventive measures and SOPs were enforcedly implemented in the country related to COVID-19.

Our results showed that the main source of information against the Coronavirus disease were from the social and mass media. These results coincide with the previous studies, conducted in China by Yue et al. (2020). Thereby, in the scope of the knowledge related questions to COVID 19, the Kakemam et al. (2020) studies showed very high accuracy rate of this question. Findings of this study coincide with those of the previous studies stating that mostly study populations knew that the main clinical symptoms of coronavirus disease were fever, dry cough and fatigue (Kakemam et al., 2020; Zhong et al., 2020). In this study, 80.52% respondents reported respiratory droplets of the infected persons as a major route of transmission of coronavirus disease while previous studies of Al-Hanawi et al. (2020), Zhong et al. (2020), Gao et al. (2020) and Peng et al. (2020) showed more accurate response rate about this question. In the present study, the participants showed a positive response rate in prevention and spread of COVID 19 through the use of masks and maintaining social distancing by avoiding the crowded places and public gatherings. Prior published studies also showed parallel response with the findings of our study (Al-Hanawi et al., 2020; Azlan et al., 2020; Zhong et al., 2020).

Concerning the attitude of the participants our results showed mixed response about the question, Is Pakistan in a good position to contain the pandemic? The study of Chinese population and Kingdom of Saudi Arabia showed good response in the findings (Al-Hanawi et al., 2020). Compared to previous studies that showed proactive attitude (Gao et al., 2020; Peng et al., 2020) while our survey showed mixed rate of response to actively participate and work in the health centers in the Pandemic crisis.

The majority of study population showed that they wore masks before leaving home to go outside. Morgul et al. (2020) also showed similar results to our findings, while the study conducted in Malaysia showed mixed response and a study conducted in China revealed highly positive response regarding the use of face masks (Li et al., 2020). Moreover, according to the results of Li et al. (2020), Morgul et al. (2020) and Azlan et al. (2020), the respondents presented extremely good practice in frequent washing of hands, while in our study, population always washed their hands. The results of a study from Ethiopia showed that almost half of the respondents practicing social distancing in contrast to the study of Turkey which reported social distancing as an extremely positive response (Morgul et al., 2020).

Although, the findings of our study showed that the respondents have high rate of knowledge against the COVID-19. But results suggested that still respondents are not maintaining social distancing of 1 meter and frequent hand washing. Participants should adopt good and safe practices to fight against the Coronavirus disease. Although scientists have developed the vaccines against the Coronavirus but the respondents

should be more cautious in stopping the spread and exponential transmission of the virus, by following the protective and preventive measures like they should refrained themselves from the crowded places, social events, hand shaking, frequent hand washing and wearing of masks throughout the COVID-19 outbreak. Hopefully, with the collective efforts of Pakistan's government and the population, The Islamic Republic of Pakistan will certainly encounter the COVID-19 in the upcoming time period by attaining the vaccine doses against COVID-19.

Authors' Contributions

SAA initiated the project, search the literature and wrote the manuscript. SSZ statistically evaluate the data and connected with persons to help out regarding the filling of questionnaire. LA did literature search and data interpreted. SHS did data collection, data interpretation and manuscript reading. FD and RA developed the questionnaire and SKF conceived idea, reviewed manuscript and made necessary correction in it.

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