ORIGINAL ARTICLE

Knowledge and Attitude of Healthcare Workers to Predict the Confidence Level to Combat Covid-19

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ABSTRACT

Objectives: To determine the knowledge and attitude of healthcare workers about COVID-19 pandemic to predict the confidence level to face the pandemic.

Study Design: Cross sectional study.

Place and Duration of Study: The study was conducted from 1st March 2020 to 30th March 2020 in Medical Teaching Institute, Qazi Hussain Ahmed Medical Complex Nowshera, and an affiliated teaching hospital of Nowshera Medical College.

Material and Methods: A total of 158 participants were selected via convenient sampling, irrespective of age and gender. A pre-validated questionnaire was administered to assess the knowledge and attitude of the respondents about COVID-19 pandemic. Relevant information's were collected and data was entered in SPSS version 25 for descriptive and regression analysis to assess the knowledge and attitude of healthcare providers towards COVID-19.

Results: Eighty one (51.3%) were males and 77(48.7%) females. The age was from 20 to 50 years. The distribution on basis of education was; 57(36.1%) medical students, 33(20.9%) General practitioners, 29 (18.6%) Bachelor degree holders and 35(22.2%) with post graduate qualification in medicine. We observed a significant difference in male gender (vs female gender*)* regarding; knowledge of outbreak *(p=0.002,OR: 7.2),* biology of 2019-nCoV*(p=0.07,OR: 3.37),* worries about the shortage of food in lock down situation*(p=0.005,OR: 4.1)* and confidence level *(p=0.07,OR: 4.2).* A significant difference was observed in population groups based on education levels regarding; treatment approach *(p=0.001),* denial of biological war *(p=0.001)* and government role in pandemic in provision of health care *(p=0.001).* A significant difference in opinion was noted in different age group regarding; food shortage in lockdown *(p=0.005, OR: 4.1)* and level of confidence *(p=0.07, OR: 4.2).*

Conclusion: Healthcare workers have sufficient knowledge about COVID-19 pandemic, its prevention, precautionary measures during the rapid rise period of outbreak. The approach towards treatment options and denial of misconception like biological war, is more positive in educated group having medical qualification.

Key Words: *COVID-19, Knowledge and Attitude, Pandemic, Regression Analysis.*

Introduction

According to the World Health Organization, the viral diseases continue to emerge and are representing serious health issues in time and future. In 2002-03 world experienced outbreak of Sever Acute Respiratory Distress Syndrome (SARS) and H1N1 (Homophiles Influenza) in 2009, Middle East Respiratory Syndrome (MERS) in Saudi Arabia in 2012 and Corona Virus disease (COVID) in 2019.[1] The outbreak in 2019 was totally different with presentation of pneumonia of unknown cause, later on the Chinese Centre for Disease Control and Prevention and local CDC attributed it to a novel virus belonging to corona family and was termed as 2019-nCoV.[2]

Corona Virus disease termed as COVID-19 is an emerging highly contagious respiratory disease that is caused by novel corona virus. It was first reported from Wuhan China in December 2019. Its main clinical symptoms are fever, dry cough, fatigue, myalgia and dyspnea.[3] Case fatality rate of 2.3% has

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Funding Source: NIL; Conflict of Interest: NIL
Received: April 21, 2020; Revised: November 20, 2020
Accepted: November 22, 2020

been reported from china that is lower than SARS (9.5%) , MERS (34.4%) and H7N9 (39%).[4] In Pakistan the literature so for covering the prevalence and incidence is deficient, however the so far reported data from government sources declares 4000 confirmed cases with 54 deaths. Punjab is the province with the highest number of corona cases reaching 2000.[5]

People adherence to preventive and precautionary measures is essential, which largely depends on the knowledge, attitude and practice of people toward COVID-19 in accordance with KAP theory.

Italy, the second most affected country, with 888 cases of SARS-CoV infection with history of travel to the epidemic area were initially reported in Lombardia and Veneto regions. They attributed these infections with poor compliance of the people towards precautionary measures during the early stages of current epidemic in the country.[6] The levels of understanding and the importance of isolation and social distancing are the key to contain this virus. That demands for the execution of a survey in our population to determine the preparedness of our population for the pandemic that has almost hit our country. Present study was therefore designed as to assess the knowledge and attitude of the regarding the pandemic to predict the confidence level to face the pandemic.

Material and Methods

A quantitative cross-sectional research design was utilized in March, 2020. This study was conducted in Medical Teaching Institute, Qazi Hussain Ahmed Medical Complex Nowshera, an affiliated teaching hospital of Nowshera Medical College. A sample size of 158 was calculated through Raosoft[7] an online sample size calculator, with confidence interval of 95%. Ethical approval was obtained from the institutional ethical review board of Nowshera Medical College via Notification No- 77/NMC/IRB dated 6th Feb 2020, before the execution of the survey. Prior informed consent was obtained from all the respondents and they were assured of confidentiality. The convenient sampling techniques was used for the present study. All the respondents irrespective of age and gender with minimum qualification of bachelor degree. Respondents with qualification less than bachelor degree were excluded from the study with an exception for 4th year medical students of Nowshera Medical College that were included in the study.

A pre-validated questionnaire comprising 13 items, were administered. A total of 158 of the respondents were assessed for their knowledge and attitude regarding COVID-19. The questionnaire had three parts. There were pre-requisite demographic information of the respondents regarding their name, age, email, qualification and nature of employment.

Part 1. Information about the knowledge of the respondents about COVID-19 biology, transmission, precautions, treatment options and preventive measures.

Part 2. Information about the responders' contacts with Covid-19 infected patients, testing method and place, treatment, isolation and quarantine and other related issues.

Part 3. Information about the lockdown, necessities for lockdown, worries about the situation and handling is food shortage and health issues and confidence level in this situation.

The questionnaire was distributed though email and in hard copies and the responders were given option to submit it via email or by hand.

Data was entered in SPSS version 25 for descriptive analysis and correlation analysis. There were two types of categorical variables in the study, one ordinal variable like age and education level of the respondents. Second were nominal variables like gender and opinion of the respondents (Yes/No) for assessing their knowledge and attitude. Frequency and percentage were calculated for categorical variables. Binary logistic regression analysis was used to predict the relationship of knowledge and attitude of the respondents with different outcomes of the pandemic wave and further to predict the level of satisfaction based on their knowledge and attitude to combat COVID-19.

Results

A total of 158 respondents were included in the study. The categorization based on age, gender and qualification is shown in table I.

A significant difference was noted among gender groups using binary logistic regression analysis for different variables to predict the confidence level based on their knowledge and attitude as mentioned in Table II.

The male gender reported to be more confident with their religious believes, precautions and level of awareness and cleanliness would help them to pass thorough this crucial time successfully as compared to their counterparts*(p=0.07,OR: 4.2)* (Table II).

It was found that difference in age groups were significantly associated with difference in Knowledge about 2019nCoV Biology *(p=0.002, OR*: 7.3) and in treatment approaches (p=0.017). Likewise the level of confidence in present wartime was more in elderly age group as compared to the youngsters (p=0.008). (Table III).

Moreover a significant difference in treatment approach was noted in different groups based on education *(p=0.001).* Based on strategic and geopolitical conflicts, sometimes it is correlated that COVID-19 is not a disease rather a biological war that was denied by the group with postgraduate qualification in medicine *(p=0.001, OR: 23).* The Odds ratio of 23 documents a strong denial of COVID-19 being a biological war.

Table I. Demographic information of the respondents

Gender Distribution			
	Frequency	**Percent**	**Cumulative Percent**
Male	81	51.3	51.3
Female	77	48.7	100.0
Total	158	100.0	
Age Groups			
	Frequency	**Percent**	**Cumulative Percent**
20-30	82	51.9	51.9
31-40	68	43.0	94.9
41-50	8	5.1	100.0
Total	158	100.0	
Education Level of the Respondents			
	Frequency	**Percent**	**Cumulative Percent**
Undergraduate (4th year MBBS Students NMC)- The pioneer class of NMC	57	36.1	36.1
Bachelor degree	29	18.4	54.4
Master, M.Phil	24	15.2	69.6
FCPS/Fellowship	11	7.0	76.6
MBBS-Professional	33	20.9	97.5
Technicians/Nurses	4	2.5	100.0
Total	158	100.0	

Table II. Regression Analysis of Gender Group with Different Variables in Assessing KAP of the Respondents towards COVID-19

S.No		B	S.E.	Wald	df	Sig.	Exp(B)
1	Outbreak information	1.974	0.635	9.681	1	0.002	7.202
2	COVID-19 Biology	1.215	0.672	3.269	1	0.071	3.37
3	Treatment Information	0.008	0.614	0	1	0.989	1.008
4	Risk factors information	-22.987	232.424	0	1	0.999	0
5	Information on importance of isolation	-21.903	142.368	0	1	0.999	0
6	Is it Biological war?	-0.501	0.491	1.038	1	0.308	0.606
7	Government should provide food and health facility in lock down	0.472	0.514	0.844	1	0.358	1.604
8	Can you work from home?	0.354	0.438	0.651	1	0.42	1.424
9	Do you afraid of food shortage in lockdown?	1.414	0.508	7.748	1	0.005	4.111
10	Have alternate source of income in Lock down situation	0.148	0.649	0.052	1	0.82	1.159
11	Have any relief from Government in this situation	3.158	0.906	12.147	1	0	23.523
12	What keeps u confident	1.453	0.537	7.329	1	0.007	4.275
13	What is more important for you and your family in lockdown	1.584	1.005	2.486	1	0.115	4.874

Discussion

Knowledge is a key to success, the more you know about a disease the more easily it can be managed to reduce morbidity and mortality. KAP strategy is an important tool to assess the preparedness level and to predict the confidence level of the community to combat COVID-19. In present study an acceptable amount of knowledge about the outbreak was noted in different gender groups *(p=0.002, OR: 7.2.* The male population dominated in knowledge about the biology of 2019nCoV *(p=0.07, OR: 3.37).* Female

Table III. Regression Analysis of Age Categories with Different Variables in Assessing KAP of the Respondents towards COVID-19

S.No		B	S.E.	Wald	df	Sig.	Exp(B)
1	Outbreak information	0.608	0.586	1.075	1	0.3	1.837
2	COVID-19 Biology Information	1.988	0.638	9.706	1	0.002	7.303
3	Treatment Information	-1.416	0.593	5.71	1	0.017	0.243
4	Risk factors information	20.303	232.423	0	1	0.999	0.886
5	Information on importance of isolation	16.858	142.358	0	1	0.999	0.415
6	Is it Biological war?	0.84	0.536	2.46	1	0.117	2.317
7	Government should provide food and health facility in lock down	0.042	0.514	0.007	1	0.936	1.042
8	Can you work from home?	0.571	0.451	1.602	1	0.206	1.769
9	Do you afraid of food shortage in lockdown?	-0.941	0.497	3.583	1	0.058	0.39
10	Have alternate source of income in Lock down situation?	-2.155	0.625	11.875	1	0.001	0.116
11	Have any relief from Government in this situation?	-1.436	0.765	3.523	1	0.061	0.238
12	What keeps u confident?	-1.31	0.565	5.371	1	0.02	0.27
13	What is more important for you and your family in lockdown?	-0.453	0.884	0.263	1	0.608	0.636

population and respondents of younger age group were more worried about the food and health issues in lock down situation during the pandemic. In the same way the level of education significantly differed in term of treatment approaches and precautionary measure *(p=0.001),* denial of biological warfare *(p=0.001)* and in the opinion that government should provide food and health facility in lock down to the incumbents. China has successfully achieved desired results by their impared knowledge, attitude and practices towards COVID-19.[8]

Zhong BL et alalso reported a significant difference in knowledge score regarding COVID-19 of male vs female gender (*OR: 0.81, P<0.001*) that matches our findings.[9] The China is expected to have won the battle due to their level of basic knowledge about the disease. They used KAP strategy in the SARS and COVID-19 epidemic where about 90% of the residents believed that they know the disease, how to prevent and what precautionary measures need to be taken [10, 11.]In our society male is earning live hood for family. High exposure risk of male population indirectly increases the chances of infection with COVID-19.[12]

Similarly the younger the age the more is stigma/fear of food shortage and healthcare issues during the lockdown *(p=0.005, OR: 4.1).* It has been observed that younger age people especially the students, are at a higher risk to SARS-Cov-2 infection because of their frequent exposure to crowded places for study and other activities of their choice.[13] So, the students have a strong fear of consequences of lockdown as compared to the elderly population.

The confidence level of male population to fight the pandemic was more than female gender *in present study.* Zhong BL et al[9] have also observed that the majority (90.8%) of the participants in their study were optimistic to get succeeded in winning the war against corona virus, that strongly correlates our findings. Studies from China have reported that education level of clients increases the confidence 3- 5 times more to win the battle against COVID-19, *(OR: 3.13-5.04, P<0.001)* that matches our findings [9,14].

Studies from China have reported that there is no evidence of bio-warfare associated with COVID-19 pandemic. It has been clarified in the research papers published, that the outbreak in the city of Wuhan was a natural epidemic and not part of any warfare, that supports our findings regarding the denial of biological war.[3,15]

The findings of our KAP are similar in outcome and statistics of the Zhong BL et al[9.] Saudi Arabia also succeeded to the maximum to combat the pandemic and to safeguard their citizens and the pilgrim by ensuring public adherence to preventive measures that was influenced by their knowledge and attitude toward COVID-19 which is closely in concordance with our findings.[16] In china the residents' attitudes and practices towards COVID-19 proved fruitful in

winning the battle against COVID-19. But like our findings the attitude towards confidence of winning significantly differed across categories of gender, age and education ($P<0.05$)[9] that matches our findings. The limitation of this study was limited number of the respondents that make us cautious in generalizing these findings to the populations of the district as it was selected in one setting/Hospital/ institution. Future studies should focus on the subject matter with large population with representation of all sectors to have a better outcome to predict/suggest the findings for decision making by the higher authorities to prevent disastrous pandemic. It is further suggested that healthcare workers should understand the basics of 2019nCoV, its clinical presentation and precautionary measures to contain virus and to avoid its spread in general community.

Conclusion

Healthcare workers have sufficient knowledge about COVID-19 pandemic, its prevention, precautionary measures during the early outbreak across the country. Female gender is more worried about the shortage of food in case of lockdown.

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