



Knowledge, Attitudes and Practices among Residents of Kashmir towards Covid-19 Pandemic

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Abstract

Background: The latest threat to global health is the ongoing COVID-19 pandemic and many control measures have been started. People’s adherence to these control measures is quintessential in controlling the spread of COVID-19, which is largely affected by their knowledge, attitudes, and practices towards this disease.

Methods: A cross-sectional online survey was conducted amongst the residents of Kashmir. A simple self-explanatory questionnaire was formulated and was distributed via various social media. Questions were asked with regards to knowledge, attitudes, and practices towards COVID-19.

Results: A total of 3106 participants were involved in the study. The mean age of the respondents was 29.86 ± 3.24 years. The mean COVID-19 knowledge score was 8.6 ± 0.48, suggesting an overall correct rate of 86% on this knowledge test. There was a significant difference in knowledge scores across age groups, genders, area of residence, marital status, level of education, and employment status (P < 0.0001). Majority of respondents [2997 (96.49%)] believed that

the outbreak of COVID-19 would be successfully controlled. Most of the respondents [3011 (96.94%)] said that they had not ventured out of their homes during this phase of lockdown and almost all [3052 (98.26%)] were agreeing to wear masks if they had to leave their homes.

Conclusion: Majority of the population in Kashmir region is well aware of the current pandemic, but it requires a detailed community based survey to further substantiate the facts.

Keywords: COVID-19; Knowledge; Attitude; Practice; KAP; Kashmir.

Introduction

After its origin in Wuhan in Hubei Province of China, the ongoing pandemic of COVID-19 has spread very quickly and as of 03rd April 2020, is affecting 204 countries and territories around the world and 2 international conveyances. The total number of cases involved is more than 1002000 and the deaths exceed 51400 [1]. The disease has shifted its epicenter from China to Europe and now is shifting its base, on the sheer number of cases, to USA [1]. Ever-since the first case of COVID-19 was diagnosed on January 29th in

India, a total of 2536 cases have been documented [2]. On the date of writing this paper, a total of 70 cases and 2 deaths of COVID-19 have been diagnosed in the union territory of Jammu & Kashmir, with majority of the cases reported from Kashmir Division [3].

Prime Minister Narendra Modi ordered a nationwide lockdown for 21 days, limiting movement of the entire 1.3 billion population of India to mitigate the spread of this pandemic [4]. In an effort to enforce social distancing and flattening the curve, it was made mandatory for people to adhere to a series of regulations including staying at home, closure of public spaces, and suspension of public transport systems. People’s adherence to these control measures is quintessential in winning this battle, which is largely affected by their knowledge, attitudes, and practices (KAP) towards COVID-19. Epidemics are usually associated with a certain degree of panic among the population, which complicate attempts to prevent the spread of the disease [5]. To facilitate the management of COVID-19, there is an urgent need to understand people’s awareness of COVID-19. In this study, we investigated the KAP towards COVID-19 of Kashmiri residents during the initial period of the COVID-19 outbreak in the area.

Materials and Methods

This cross-sectional study was conducted at the end of first week of nation-wide lockdown from 24th March to 31st March amongst the residents of Kashmir. The first and second authors carried out the present study in their individual capacity. As it was not possible to do a community based survey, owing to the restrictions of lockdown, we decided to collect the data online. A survey was created using “Google forms” and was distributed via social media including “WhatsApp”, “Facebook” and “Twitter”. This survey consisted of

voluntary nature of participation, declarations of anonymity and confidentiality, and the questionnaire. Persons who were residents of Kashmir, above 18 years of age and agreed to participate in the study after completion of the questionnaire were included in the study.

Demographic variables like age, gender, marital status; education, occupation, and place of current residence (rural versus urban) were noted. The questionnaire per se consisted of 10 questions on knowledge, one on attitudes and two on practices [Table 1]. Questions were asked with regards to clinical presentation, routes of transmission and methods of prevention and control. These questions were answered on a “true/false” basis with an additional “Don't know” option. A correct answer was assigned “1” point and an incorrect/unknown answer was assigned “0” points. Thus the score ranged from 0 to 10, with a higher score denoting a better knowledge of COVID-19. Before administering the questionnaire to the general public, its validity was established in a limited sample of 30 friends, not linked to healthcare via a personalized e-mail. The Cronbach’s alpha coefficient of the questionnaire was 0.82 in our sample, indicating good internal consistency. The answers to attitudes and practices were measured as “yes/no”.

Table 1: The Questionnaire of Knowledge, Attitudes & Practices towards COVID-19.

Statements		Options		
S. N.	Knowledge	True	False	Don't Know
1.	Main clinical features of COVID-19 are dry cough, fever & myalgia			
2.	Stuffy & running nose with sneezing are less common in COVID-19			
3.	All patients of COVID-19			

	develop a serious course.			
4.	COVID-19 spreads through droplet infection			
5.	It spreads even when an infected person is asymptomatic			
6.	Wearing masks mitigates its spread			
7.	Washing hands with soap decreases its spread			
8.	Social distancing is important in decreasing its spread			
9.	Isolation of infected person is necessary			
10.	In case of contact with infected person, quarantine for 14 days is needed.			
S. No.	ATTITUDE	YES	NO	
1.	Will COVID-19 be controlled eventually?			
S. No.	PRACTICE	YES	NO	
1.	Have you ventured out of your home during lockdown?			
2.	Will you wear a mask if you venture out?			

The data thus collected was compiled and analyzed using SPSS version 21 for Mac (IBM Corporation, 2012). Frequencies of correct knowledge answers and various attitudes and practices were described. Knowledge scores and attitudes and practices of different persons according to demographic characteristics were compared by appropriate tests. For quantitative data, mean and standard deviation was calculated. The association between variables was calculated for 95% confidence intervals by using “Chi square test”. “Unpaired t – test” was used to compare the means. Multivariable linear regression analysis using all of the demographic variables as independent variables and knowledge score as the outcome variable was conducted to identify factors associated with knowledge. Similarly, binary logistic regression analyses were used to identify factors associated with

attitudes and practice. A P-value < 0.05 was taken as significant. As this study was done in an individual capacity, an approval from the Institutional Ethical Committee was not obtained, however, an e-consent was obtained from the participants.

Results

Out of a total of 3278 participants who responded to the survey, 172 were excluded (24 did not consent, 44 were less than 18 years of age and rest were not residents of Kashmir). Thus the final sample consisted of 3106 respondents. The mean age of the respondents was 29.86 ± 3.24 years. There were more males in our study as compared to females [1896 (61.04%)]. The other demographic parameters are shown in Table 2.

The correct answer rates of the 10 questions on the COVID-19 knowledge questionnaire were 68.36 - 97.65%. The mean COVID-19 knowledge score was 8.6 ± 0.48 , suggesting an overall correct rate of 86% on this knowledge test. There was a significant difference in knowledge scores across age groups, genders, area of residence, marital status, level of education, and employment status (P < 0.0001) [Table 2]. Multiple linear regression analysis revealed that female gender, age group “19 – 28” years, un-married, uneducated, unemployed and those living in rural areas had significantly lower knowledge scores (P < 0.0001) as compared to their other counterparts [Table 3].

Table 2: Demographic profile of the participants & its relation to Knowledge score of COVID-19.

Parameter		Number (N = 3106)	Mean Knowledge Score	P Value
Gender	Male	1896 (61.04%)	8.7 ± 0.39	< 0.001
	Female	1210 (38.96%)	8.1 ± 0.57	
Age (Years)	19 – 28	892 (28.72%)	7.7 ± 0.42	< 0.0001

	29 – 38	1134 (36.51%)	9.1 ± 0.21	
	> 39	1080 (34.77%)	8.5 ± 0.43	
Marital Status	Unmarried	801 (25.79%)	7.9 ± 0.12	< 0.0001
	Married	2305 (74.21%)	8.8 ± 0.28	
Education	Uneducated	324 (10.43%)	5.4 ± 0.91	< 0.0001
	Secondary School or Lower	912 (29.36%)	7.3 ± 0.35	
	Bachelor’s	982 (31.62%)	8.9 ± 0.17	
	Master’s	888 (28.59%)	9.2 ± 0.04	
Area of Residence	Rural	657 (21.15%)	7.1 ± 0.69	< 0.0001
	Urban	2449 (78.85%)	8.9 ± 0.11	
Employment Status	Unemployed	721 (23.21%)	6.8 ± 0.53	< 0.0001
	Employed	2385 (76.79%)	9.1 ± 0.06	

Majority of respondents [2997 (96.49%)] believed that the outbreak of COVID-19 would be successfully controlled. This attitude differed significantly across age groups, genders, level of education, area of residence and employment status. Multiple logistic regression analysis found that age group “19 – 28” years versus “29 – 38” years [Odds ratio (OR) 1.86, P < 0.001]; females versus males (OR 1.23, P < 0.001); uneducated versus “secondary-school and lower” level of education (OR 1.54, P < 0.0001); residing in rural areas as against urban areas (OR 1.61, P < 0.0001) and unemployed as compared to employed (OR 1.19, P < 0.001) were significantly associated with negative attitudes on the successful control of COVID-19.

Table 3: Multiple linear regression analysis of factors with regards to poor Knowledge score of COVID-19.

Parameter		Coefficient	Standard Error	P Value
Gender	Female Vs. Male	- 0.216	0.056	< 0.0001
	Age (Years)			
Age (Years)	19 – 28 Vs. 29 – 38	- 0.322	0.061	< 0.0001
	Vs. > 39	- 0.247	0.051	< 0.0001
Marital Status	Unmarried Vs. Married	- 0.623	0.119	< 0.0001
Education	Uneducated Vs. Secondary School or Lower	- 0.768	0.037	< 0.0001
	Vs. Bachelor’s	- 0.818	0.049	< 0.0001
	Vs. Master’s	- 0.935	0.062	< 0.0001
Area of Residence	Rural Vs. Urban	- 0.129	0.043	< 0.0001
Employment Status	Unemployed Vs. Employed	- 0.881	0.028	< 0.0001

Most of the respondents [3011 (96.94%)] said that they had not ventured out of their homes during this phase of lockdown and almost all [3052 (98.26%)] were agreeing to wear masks if they had to leave their homes. In the small number of people that had ventured out [95 (3.06%)], multiple logistic regression analysis found that age group “19 – 28” years versus “29 – 38” years (OR 2.01, P < 0.0001); males versus females (OR

1.83, $P < 0.0001$); unmarried versus married (OR 1.29, $P < 0.001$); residing in rural areas as against urban areas (OR 1.94, $P < 0.0001$) and unemployed as compared to employed (OR 2.32, $P < 0.0001$) were significantly associated with venturing out practice. Similarly, in the people who were not agreeing to wear masks once venturing out [54 (1.74%)]; multiple logistic regression analysis found that age group “19 – 28” years versus “29 – 38” years (OR 1.62, $P < 0.001$); males versus females (OR 1.37, $P < 0.001$); residing in rural areas as against urban areas (OR 1.26, $P < 0.001$) and unemployed as compared to employed (OR 1.38, $P < 0.001$) were significantly associated with this practice.

Discussion

The latest threat to global health is the ongoing outbreak of the respiratory disease that was recently given the name COVID-19. As in two preceding instances of emergence of coronavirus disease in the past 18 years, the Covid-19 outbreak has posed critical challenges for the public health and research [6-8]. In order to control this outbreak, it is imperative that the public at large adheres to the containment measures announced locally. This adherence depends on the level of knowledge of the disease among the general public [5,9], attitudes towards it and the resultant practices; hence the need to conduct KAP studies regarding this disease. To the best of our knowledge, this is the first KAP study conducted in this part of the world regarding COVID-19.

In our study, correct knowledge score of 86% was seen in our population. This was expected in view of fact that extensive media campaign (print as well as electronic) had been carried out by the local authorities since the first case of COVID-19 was reported in country. There was a significant difference in knowledge scores across genders, age groups, area of

residence, marital status, level of education, and employment status. As ours is a conservative community, the females usually feel shy on coming to the social networks, hence their lesser proportion in the respondents. This could be also the probable reason that they were lesser informed than their male counterparts as regards the knowledge of COVID-19.

Available evidence indicates that young people are prone to a number of socially impacting conditions due to personal choices, environmental influences and lifestyle changes [10]. This age group usually doesn't take life seriously and responsibly. This could be the reason why in the age group of “19 – 28”, the correct scores of knowledge were less as compared to other age groups. Also by nature, this age group is mutinous towards societal norms and derives pleasure in breaking rules, which could explain the significant difference in attitudes and practices as regards to COVID-19.

Level of education amply reflects in the behavior towards a disease [11]. It is thus expected to understand that higher levels of education were associated with higher knowledge scores, positive attitudes and better practices as regards to COVID-19. The level of education was lesser in the persons living in rural areas, and those that were unemployed. This was probably the reason why the knowledge scores were less and attitudes were negative and practices were not good in this subset of population.

Our study has some potential limitations. First, the sample size cannot truly represent the community as it only involved those people who had access to Internet and were educated enough to use it, but this was the only method available at present, as a face-to-face community interview was impossible considering the situation. Second, we cannot be sure that the participants were absolutely true in answering the

questionnaire, however, the high percentage of correct scores implies that it would be more than chance that would get these answers right. Third, this survey was done at the completion of the first week of lockdown and may change as the duration of lockdown increases.

Conclusion

In conclusion, we see that majority of the population in Kashmir region is well aware of the current pandemic, but it requires a detailed community based survey to further substantiate the facts.

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