

Public perception, knowledge and readiness for behaviour Modification in covid-19 pandemic in Pakistan

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Objective: To explore individuals' knowledge and perception of the COVID-19 virus pandemic, views on imposed governmental restrictions and engagement rates in mandatory behavioural restrictions in a cohort of Pakistan under or post-graduate students.

Methodology: A web-based cross-sectional survey was conducted and 358 participants completed the online questionnaire.

Results: Participants had a high awareness of several potential symptoms of COVID-19 with shortness of

breath (99%), a dry cough (96%), and fever (94%). A significant minority of participants stated that despite governmental restrictions, they planned to continue to engage with family members (not resident with them if asymptomatic (21.5%).

Conclusion: Clear dissemination of information from appropriate governmental sources is advised to support on-going engagement in effective preventative strategies for the COVID-19 pandemic in Pakistan.

Keywords: Covid-19, public perception, knowledge.

INTRODUCTION

The novel Coronavirus SarsCo-V2 (COVID-19) was discovered in Wuhan in December 2019.¹ It was declared a global pandemic by WHO on March 11th 2020,² with high mortality.³ Its transmission rate is high. Preventative measures including behavior modification have been widely adopted.⁴

The response to situations including behavioral measures can include excessive feelings of anxiety, dysfunctional stockpiling of goods, or a defensive strategy of 'optimism bias', which may result in individuals disregarding public health warnings.⁵ Communication strategies may play a central role in determining if large groups of individuals will comply with mandated requests.^{6,7} Communication to the public should be evidence-based, respond to misinformation in a responsible way, with the aim of inducing rational, adaptive and protective behaviours.⁸

The synchronization between actual epidemiological data and public perceptions is associated with increased engagement in protective and preventative behaviors.⁹ Uncertainty or inconsistency pertaining to factual data or recommendations, have been associated with a reduced likelihood of the public implementing recommended protective behaviors.¹⁰ In this study, we aimed to explore individuals' knowledge and perception of the COVID-19 virus pandemic, views on imposed governmental restrictions and engagement rates in mandatory behavioral restrictions.

METHODOLOGY

This study encompassed a web-based cross-sectional survey. Participants who had previously engaged in research in the psychology department at the International Islamic University of Islamabad were recruited through email communication, with social platforms (Facebook) in third level institutions also utilised. Participants provided informed consent and Ethical approval was attained from the bioethics committee, International Islamic University of Islamabad.

A standardized questionnaire developed by WHO Regional Office for Europe (Survey tool and guidance: behavioural insights on COVID-19, 2020) was adapted into Urdu.¹¹ After successful pilot testing (n=30, participants noted no concerns), the survey was distributed 23rd March to 14th April 2020 and took approximately 25 minutes to complete.

The questionnaire measured: 1) knowledge about COVID-19 symptoms (alpha reliability = .63); 2) awareness of cohorts at increased risk of severe illness if they contracted COVID-19 (alpha reliability = .67); 3) knowledge about effective preventive measures to reduce the risk of contracting COVID-19 (alpha reliability = .71) ; 4) actual engagement in effective preventive measures to reduce the risk of contracting COVID-19 (alpha reliability = .73); 5) information participants would like to attain from governmental sources (alpha reliability = .61); 6) perceived

vulnerability to contract COVID-19 (single item); 7) behavioural strategies adopted or planned to be adopted by participants due to COVID-19 (alpha reliability = .71); 8) religious practices (alpha reliability = .87).

Statistical Analysis: The statistical analysis was performed by using SPSS 24. We utilised the Chi Square (χ^2) test (or where there was a small sample size in any cell, the Fishers Exact Test) for non-parametric data.

RESULTS

Out of 358 participants, 60% were male, and mean age of all participants was 29.9 ± 9.0 (range 18 – 55) years (no difference between genders). Participant's sociodemographic and clinical characteristics are shown in Table 1. Knowledge about COVID-19 risks, symptoms and preventative measures is shown in Table 2.

Participants reported that all seven items in the questionnaire were necessary for the government to disseminate to the public with data pertaining to strategies to prevent spread of COVID-19 (91%), information related to travel ban (89%) and advice on how to protect children (87%) most highly valued (Table 3). Social or behavioural modifications due to COVID-19 are shown in Table 4.

DISCUSSION

Participants correctly attributed more elderly individuals, and those with severe respiratory illnesses as high risk vulnerable groups. However, high rates of misattribution were evident in relation to children and pregnant women with approximately two-thirds of participants believing that these cohorts were at risk of severe illness, despite a lack of current evidence suggesting this.^{12,13} Children, including very young infants to date have predominantly experienced very mild clinical manifestations of COVID-19.^{14,15}

Data pertaining to pregnant women similarly demonstrates a relatively benign course; however varying media reports and a number of case reports have described pregnant women with more severe symptomatology.¹⁶ This varying data may be associated at least to some extent with the uncertainty regarding illness severity in these patient cohorts. Of note, compared to the SARS and MERS-CoV pandemics where very high mortality rates (18% and 25%) and use of mechanical ventilation (35% and 41%) were required in pregnant women, COVID-19 is predominantly associated with a more benign illness course in this patient cohort.¹⁷

Gastrointestinal symptoms occur with COVID-19 with

Table 1: Sociodemographic and clinical characteristics (N = 358).

Variable	f (%)
Gender	
Male	216 (60.3)
Female	142 (39.7)
Education	
Completed Second Level	46 (12.8)
Completed Undergraduate	150 (41.9)
Completed Post-Graduate	162 (45.3)
Province of Residence	
Punjab	127 (35.5)
Balochistan	111 (31.0)
KPK	107 (29.9)
Sindh	10 (2.79)
Gilgit – Baltistan	3 (0.8)
Chronic Health Disease	
Yes	33 (9.2)
No	325 (90.8)
Working in Healthcare	
Yes	25 (7.0)
No	333 (93.0)
	M (SD)
Age	29.9 (9.0)

frequencies of diarrhoea ranging from 2 – 10% and nausea and vomiting similarly ranging from 1 – 10%, with potentially higher rates noted in children who contract COVID-19.¹⁸ The tropism of COVID-19 to the gastrointestinal tract is important clinically however, as it is potentially associated with prolonged viral shedding from the gastrointestinal tract.¹⁹

In relation to most evidence based preventative measures for contracting COVID-19, participants demonstrated an excellent awareness about social distancing, hand-washing, cough etiquette.²⁰ This is probably not surprising given the pre-eminence of internet searches pertaining to COVID-19 compared to other topics globally at present.²¹ Illness awareness has previously been demonstrated to increase adherence to management strategies as demonstrated in this study.²² Whilst engagement in religious practice has been associated with both adherence and non-adherence to treatment strategies, it is probable, that non-adherence with treatment strategies that conflict with religious values, which is not the case with COVID-19.²³

Table 2: Knowledge about COVID-19 risks, symptoms and preventative measures.

Which of the following groups are at risk of severe illness related to COVID-19?	At Risk n (%)	Not at Risk n (%)	Don't Know n (%)
1. People aged 60 years or older.	351(98.0)	3 (0.8)	4 (1.2)
2. Pregnant women.	224 (62.6)	18 (5.3)	115 (32.1)
3. Infants.	260 (72.6)	44 (12.3)	53 (14.8)
4. Small children aged 1 – 5 years.	278 (77.7)	45 (12.6)	34 (9.5)
5. People who have a serious chronic heart disease.	291 (81.3)	11 (3.1)	55 (15.4)
6. People who have a serious chronic diabetes.	281 (78.5)	14 (3.9)	63 (17.6)
7. People who have a serious lung disease.	341 (95.3)	2 (0.6)	15 (4.2)
8. People who have asthma.	322 (89.9)	3 (0.8)	15 (8.9)
Which of the following can be symptoms of COVID-19?	Yes n (%)	No n (%)	Don't Know n (%)
1. Fever.	336 (93.9)	15 (4.2)	5 (1.4)
2. Dry Cough.	342 (95.5)	13 (3.6)	3 (0.9)
3. Shortness of breath.	356 (99.4)	1 (0.3)	1 (0.3)
4. Sore Throat.	268 (74.9)	44 (12.3)	46 (12.9)
5. Runny nose (rhinorrhoea).	222 (62.0)	95 (26.5)	41 (11.5)
6. Muscular Pain.	261 (72.9)	36 (10.1)	61 (17.0)
7. Fatigue.	254 (70.9)	48 (13.4)	56 (15.6)
8. Diarrhoea.	92 (25.7)	109 (30.4)	157 (43.9)
Which of the following are effective measures to prevent the spread and infection of COVID-19?	Yes n (%)	No n (%)	Don't Know n (%)
1. Hand washing for 20 seconds.	351 (98.0)	4 (1.1)	3 (0.8)
2. Avoiding touching your eyes, nose, and mouth with unwashed hands.	352 (98.3)	6 (1.7)	0 (0.0)
3. Staying home when you are sick or when you have a cold	353 (98.6)	4 (1.1)	1 (0.3)
4. Not travelling abroad.	355 (99.2)	3 (0.8)	0 (0.0)
5. Use of disinfectants to clean hands when soap and water is not available for washing hands.	350 (97.8)	6 (1.7)	2 (0.6)
6. Using Herbal supplements.	113 (36.6)	115 (32.1)	112 (31.3)
7. Covering your mouth when you cough.	356 (99.4)	0 (0.0)	2 (0.6)
8. Avoiding Handshake.	351 (98.0)	5 (1.4)	2 (0.6)
9. Avoiding close contact with someone who is infected.	356 (99.4)	1 (0.3)	1 (0.3)
10. Avoiding eating meat.	130 (36.3)	147 (41.1)	81 (22.6)
11. Exercising regularly.	238 (65.6)	67 (18.7)	53 (14.8)
12. Wearing a face mask.	338 (94.4)	15 (4.2)	5 (1.4)
13. Avoiding places where many people gather.	354 (98.9)	2 (0.6)	2 (0.6)
14. Taking Green tea.	225 (62.8)	66 (18.4)	67 (18.7)
15. Using homeopathic remedies.	58 (16.2)	155 (43.3)	145 (40.5)
16. Social distancing.	356 (99.4)	2 (0.6)	0 (0.0)

Table 3: Information dissemination regarding COVID-19.

Which of the following are important for the government to disseminate to you?	Yes n (%)	No n (%)
1. Experiential stories of infected individuals.	264(73.7)	94 (26.3)
2. Scientific progress for vaccine.	297 (83.0)	61 (17.0)
3. Scientific progress for curative treatment.	302 (84.4)	56 (15.6)
4. Strategies to prevent spread of COVID-19.	324 (90.5)	34 (9.5)
5. How to look after infected individuals.	298 (83.2)	60 (16.8)
6. How to protect children from COVID-19.	311 (86.9)	47 (13.1)
7. Information related to ban on travel.	319 (89.1)	39 (10.9)

Table 4: Social or behavioural modifications due to COVID-19.

Have you implemented or plan to implement the following strategies	Undertaken n (%)	Planned n (%)	Not planned n (%)
1. Bought extra medicines.	22 (6.1)	23 (6.4)	313 (87.5)
2. Bought other supplies at the pharmacy.	11 (3.1)	43 (12.0)	304 (84.9)
3. Bought food supplies on a large scale.	32 (8.9)	80 (22.3)	246 (68.7)
4. Bought disinfectants on large scale.	38 (10.6)	83 (23.5)	236 (65.9)
5. Avoid people who come from countries where COVID-19 cases have occurred, such as China or Italy.	150 (41.9)	186 (52.0)	22 (6.1)
6. Stayed away from social events I had planned to attend.	194 (52.2)	121 (33.8)	43 (12.0)
7. Cancel holiday trips.	242 (67.6)	87 (24.3)	29 (8.1)
8. Cancelled business trips.	205 (57.3)	119 (33.2)	34 (9.5)
9. Avoid visiting family even if I do not have symptoms of disease.	148 (41.3)	133 (37.2)	77 (21.5)
10. Asked family members or friends not to visit me.	143 (39.9)	136 (38.0)	79 (22.1)
11. Decide that my child cannot meet with a friend.	187 (52.2)	137 (38.3)	34 (9.5)

CONCLUSION

Participants demonstrated a good understanding of the symptoms and had an awareness of some of common symptoms and preventative strategies required to reduce the risk of contracting COVID-19. However, there were also clear deficits in knowledge in relation to cohorts perceived to be at risk of severe illness if they contracted COVID-19 and some preventative strategies. Clear dissemination of information from appropriate governmental sources is advised to support ongoing engagement in effective preventative strategies for the COVID-19 pandemic in Pakistan.

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