

Knowledge and Perception of Health Professionals towards COVID-19

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ABSTRACT

Coronavirus disease is an emerging public health concern globally. Due to rapid spread and alarming incidences of COVID-19 cases, we intended to explore the knowledge and perception of health professionals. Objective of study to assess the knowledge and perception of health professionals through a web based study using voluntary sampling technique. Respondents were almost equal gender wise classified. Around 50% of participants had good knowledge about COVID-19 disease. The mean knowledge score was 18.49 ± 4.257 . In this study perception of health professional towards COVID-19; nearly half of them 49.2% had positive, followed by 35.3% had negative and 15.5% had neutral perception. The present study found significant association of knowledge with gender ($p=0.002$), occupation ($p=.001$), years of service ($p=.001$), Job ($p=.001$), heard about COVID-19 ($p=.001$) and source of information about COVID-19 ($p=.001$) at 5% p value. This study found insignificant association of perception with all demographic variables at 5% p value.

Key words: Coronavirus, COVID-19, Knowledge, Perception, Health professionals

INTRODUCTION

Novel Coronavirus (COVID-19) pandemic is an evolving highly infectious disease causing illness ranging from mild symptoms of common cold to very severe acute respiratory syndrome.¹ It is a zoonotic pathogen has ability to be transmitted from animal to human and human to human through micro droplets, direct and indirect contacts of COVID-19 infected people.

The recent outbreak of the novel Coronavirus (COVID-19) in Wuhan City, Hubei Province, China has emerged as a global outbreak and significant concern of public health during December 2019.²

The World Health Organization (WHO) declared COVID-19 as pandemic a Health emergency on January 30th, 2020.³ Till June 19th, 2020, the devastating number of confirmed cases were 8.24 million,

unfortunate deaths 4 lakh 46 thousand. In India number of active cases 381000, cured and discharged 2 lakh 50 thousand with total deaths of 12573 had been reported.⁴

Spread of COVID-19 prevailing in India but certain cities has become an epic centre of the disease. Till date no vaccine or specific treatment of COVID-19 is available, however hand hygiene, use of face mask and social distancing are key factors in preventing its spread.

Coronavirus is sprawling around the world but there is still no prophylactic management about this crucial attack. The virus proliferates and immense Indian population has been infected. Country wide lockdown was efficiently curtailed the spread in the worlds second populous land. The Government would allow lockdown to be lifted more safely in phased manner;

however the physical distancing needs to be followed. Researchers are working at breakneck speed around the globe, many of them conducting clinical trials. Indeed, a vaccine would normally take years sometimes decades to develop. In the current era researchers hope to achieve the same within a couple of months. Although four coronaviruses already circulate in human beings. They cause common cold symptoms and till date there are no vaccines for any of them.

Therefore, practicing preventive measures to control COVID-19 infection is one of the most important interventions. Health care workers (HCWs) are the fronts in caring patients and are an important exposure to be infected with cases and carriers of COVID-19 at hospitals; thus, health care workers are expected to be at very high risk of infection.

World Health Organization (WHO), Centers for Disease Control and Prevention (CDC) and Ministry of Health and Family Welfare (MoHFW) India had published recommendations for the prevention and control of COVID-19 for HCWs.^{5,6} The WHO, Indian Nursing Council (INC), AIIMS New Delhi and other Institutions/Hospitals initiated several online training sessions and materials on COVID-19 to strengthen preventive strategies including creating awareness and training for HCWs preparedness.⁷ In few instances misunderstanding among HCWs delayed applying preventive efforts. Led to the spread of infection in hospitals.^{8,9,10}

In this regard, the COVID-19 pandemic, a unique opportunity to investigate the knowledge and perception of HCWs during the global health crisis. In addition we have to aim to explore the role of different information sources adding to the knowledge of COVID-19 during this peak period.

MATERIALS AND METHODS

Due to countrywide lockdown at the time of data collection, we opted to use online access resources for quick and wider

reach. A cross-sectional, web-based study was conducted in the month of May 2020 among health professionals across India. Voluntary sampling technique was used. In this survey total 780 health professionals participated. The health professional's knowledge on COVID-19 was assessed using by self structured questionnaires. There were total 30 questions; each right answer awarded one mark and wrong answer zero mark. For further its categories level of knowledge as per score i.e. excellent (>75%), good (50-75%) and adequate (<50%). The self structured five point likert's scale about perception of COVID-19. It consists of 11 items. Minimum score was 11 and maximum score 55. Further its categories as per score i.e. positive (>50%), negative (<50%) and neutral (50) perception. Tool reliability calculated by cronbach alpha method i.e. Knowledge questionnaire $r=0.71$ and perception scale $r=0.74$. Data analysis was done with the use of statistical software SPSS version 17. Descriptive and inferential statistic techniques used for final data analysis.

RESULTS

Table 1: Background information of Health Professionals. N=780

Sr.No	Information	f	%
1.	Gender		
	Male	378	48.5
	Female	402	51.5
2.	Age (years)		
	<25	090	11.5
	25-34	380	48.7
	35-45	190	24.4
	46-54	116	14.9
	>54	004	00.5
3.	Occupation		
	Nurse	628	80.5
	Doctor	072	09.2
	Paramedics	026	03.3
	Others	054	06.9
4.	Year of service		
	<5	346	44.4
	6-15	278	35.6
	16-24	112	14.4
	>25	044	05.6
5.	Job		
	Central Govt.	236	30.3
	Autonomous Body	318	40.8
	State Govt.	107	13.7
	Private	119	15.3
6.	Do you heard about COVID-19		
	Yes	744	95.4
	No	036	04.6

7.	Attended lectures or discussions about COVID-19		
	Yes	443	56.8
	No.	337	43.2
8	Source of information about COVID-19		
	Media (Social & News)	522	66.9
	Webinar	148	19.0
	Journals	088	11.3
	Friends and family	022	02.8

Table 1 reveals that ratio of males (48.5%) and females (51.5%) were almost equal, nearly half of participants between age group ranges 25-34 years (48.7%) one quarter of them (24.4%) belongs to 35-45 years of age. Majority of participants were nurses (80.5%) followed by doctors (9.2%) The most participants were in service <5 years (44.4%) and one-third are between 6-15 years of experience as health professionals. Around (40.8%) were

employee of Autonomous Institutions followed by central Government (40.8%). More than 95% of participants claimed that they heard about COVID-19. It was stated by two-third (66.9%) participant that the main source of information about COVID-19 was media, webinars (19%)

Table 2: Knowledge of health professional towards COVID-19. N=780

Sr. No.	Level of Knowledge	f	%	Mean SD
1.	Excellent	326	41.8	18.49±4.257
2.	Good	393	50.4	
3.	Adequate	061	07.8	

Table 2 depicts the knowledge of health professional about COVID-19. Around 50.4% had good, 41.8 excellent and 7.8% adequate knowledge. The mean knowledge score was 18.49±4.257.

Table 3: Perception of Health Professional regarding COVID-19. N=780

Sr. No.	Items	Strongly Agree 5	Agree 4	Not Sure 3	Disagree 2	Strongly Disagree 1	Mean SD
		Frequency (Percentage)					
1.	Need to worry about contracting flu-like illnesses	-	-	001 (00.1)	011 (01.4)	768 (98.5)	1.01±0.13
2.	COVID-19 is fatal	-	003 (00.4)	001 (00.1)	007 (00.9)	769 (98.6)	1.02±0.21
3.	Wearing a face mask can be helpful	345 (44.2)	372 (47.7)	063 (08.1)	-	-	3.63±0.62
4.	Hand hygiene can be helpful	140 (17.9)	245 (31.4)	187 (24.0)	182 (23.3)	26 (3.3)	3.89±1.11
5.	Eating well-cooked and safely handled meat is safe	-	356 (45.6)	296 (37.9)	128(16.4)	-	3.29±0.73
6.	Social distancing can be helpful	132 (16.9)	551 (70.6)	097 (12.4)	-	-	4.04±0.54
7.	Lockdown is good step by Govt.	062 (07.9)	323 (41.4)	250 (32.1)	145 (18.6)	-	3.38±0.87
8.	If getting COVID-19, you will accept isolation	372 (47.7)	394 (50.5)	010 (01.3)	004 (00.5)	-	4.45±0.55
9.	These patients should be kept in special COVID 19 hospital	426 (54.6)	325 (41.7)	026 (03.3)	003 (00.04)	-	4.50±0.58
10.	Strict infection control policy can be helpful at hospital	-	-	162 (20.8)	256 (32.8)	362 (46.4)	1.74±0.77
11.	Flu vaccination is sufficient for preventing this disease	-	-	001 (00.1)	011 (01.4)	768 (98.5)	1.01±0.13

Table 3 shows that perception of health professional regarding COVID-19, 98.5% health professional were are strongly disagree about to worry about contracting flu-like illnesses, 98.6 were strongly disagree that COVID-19 is fatal, Majority of the participants were agree 47.7 and strongly agree 44.2 to wearing a face mask. The 31.4% were agreed and 17.9 strongly agree reading hand hygiene. 70% were agree about social distancing, 32.1 were had neutral response about lockdown, 50.5% were agree and 47.3% strongly agree about isolation policy, 54% were strongly agree and 41.7% were agree that these patient

should be kept in special COVID-19 hospital, 48.6% were strongly disagree about strict infection control can be helpful and 98.5 % were strongly disagree about flu vaccination.

Table 4: Perception of health professionals toward COVID-19. N=780

Sr. No	Perception	f	%	Mean SD
1.	Positive	384	49.2	28.40 ± 2.29
2.	Negative	275	35.3	
3.	Neutral	121	15.5	

Table 4 shows that perception of health professional towards COVID-19; nearly half of them 49.2% had positive, followed by 35.3% had negative and 15.5% had neutral perception.

Table 5: Association between level of knowledge regarding COVID-19 with variables of health professionals. N=780

Sr. No.	Socio-demographic Variables	Level of knowledge			χ^2 value	Df	p-value
		Excellent	Good	Adequate			
1.	Gender						
	Male	182	170	26	12.178	2	.002**
	Female	144	223	35			
2.	Age (years)						
	<25 Year	042	044	04			
	25-34	150	189	41			
	35-45	088	090	12	13.679	8	.091
	46-54	044	068	04			
	>54	002	002	00			
3.	Occupation						
	Nurse	274	300	54			
	Doctor	034	036	02			
	Paramedics	010	016	00	23.979	6	.001**
	Others	008	041	05			
4.	Years of service						
	<5	152	166	28			
	6-15	097	154	27	30.222	6	.001**
	16-24d	067	042	03			
	>25	010	031	03			
5.	Job						
	Central Govt.	105	106	25			
	Autonomous Body	140	157	21	22.910	6	.001**
	State Govt.	026	075	06			
	Private	055	055	09			
6.	Do you heard about COVID-19						
	Yes	324	364	56	20.455	2	.001**
	No	002	029	05			
7.	Attended lectures or discussions about COVID-19						
	Yes	189	222	32	.668	2	.716
	No	137	171	29			
8.	Source of information about COVID-19						
	Media (Social & News)	235	259	28			
	Webinar	050	077	21	24.569	6	.001**
	Journals	035	041	12			
	Friends and family	006	016	00			

NB: χ^2 = Chi-square, df= degree of freedom, ** Significant, NS= Non-significant at p-value 5%

Table 5 Reveals that association of knowledge about COVID-19 with selected variables i.e. gender (p=0.002), occupation (p=.001), years of service (p=.001), Job (p=.001), heard about COVID-19 (p=.001) and source of information about COVID-19 (p=.001) found significant at (p<0.05).

Table 6: Association between perception about COVID-19 with variables of health professionals. N=780

Sr. No.	Variables	Perception			χ^2 value	df	p-value
		Positive	Negative	Neutral			
1.	Gender						
	Male	191	130	056	.689	2	.709 ^{NS}
	Female	192	145	065			
2.	Age (years)						
	<25 Year	048	026	016			
	25-34	197	133	050			
	35-45	083	077	030	11.505	8	.175 ^{NS}
	46-54	052	038	026			
	>54	003	001	000			
3.	Occupation						
	Nurse	319	213	096			
	Doctor	033	028	011	8.842	6	.183 ^{NS}
	Paramedics	006	013	007			
	Others	025	021	008			
4.	Years of service						
	<5	185	117	044			
	6-15	131	103	044	8.686	6	.192 ^{NS}
	16-24d	051	039	022			
	>25	017	016	011			

5.	Job						
	Central Govt.	123	078	036			
	Autonomous Body	152	119	046	2.500	6	.868 ^{NS}
	State Govt.	049	038	020			
	Private	060	040	019			
6.	Do you heard about COVID-19						
	Yes	369	262	113	2.996	2	.224 ^{NS}
	No	014	013	009			
7.	Attended lectures or discussions about COVID-19						
	Yes	224	151	068	.734	2	.693 ^{NS}
	No	160	124	053			
8.	Source of information about COVID-19						
	Media (Social & News)	253	192	077			
	Webinar	079	043	026	3.930	6	.686 ^{NS}
	Journals	040	033	015			
	Friends and family	012	007	003			

NB: χ^2 = Chi-square, df= degree of freedom, NS= Non-significant at p-value 5%

Table 6 depicts that association of perception about COVID-19 with variables i.e. gender, age, occupation, years of service, job, do you heard about COVID-19, attended lectures/discussions, source of information found insignificant at 5% of p value.

DISCUSSION

The present study researcher found that out of 780 participants, 48.5% were male and 51.5% were female. Nearly half of participants between age group ranges 25-34 years 48.7%, one quarter of them 24.4% belong to 35-45 years of age. Majority of participants were nurses 80.5%, 9.2% were doctors and 5.3% were nurses. The health professionals had the mean knowledge 18.49 ± 4.257 regarding COVID-19. Bhagavathula AS et al (2020)¹¹ shown out of 529 participants, 51.6% were male and 48.4% were female. 32.1% were aged 25-34 years, and most were doctors 30.2% and medical students 29.6%. A significant proportion of HCWs had poor knowledge of its transmission 61.0% and symptom onset 63.6%. Abdelhafiz AS et al (2020)¹² found that out of 559 participants, 37.7% were male and 62.3% were female. Nearly half of them 48.1% were in 18-30year age group, 26.8% were 30-40 year age. Huynh G et al (2020)¹³ shown that out of 327 healthcare workers, 74% were female and 26% were male. Their mean age was 30.1 ± 6.1 . Majority of them nurses 74.9% and 13.1% were Physician.

In this study 41.8% had excellent, 50.4% good and 7.8% adequate knowledge about COVID-19. They had mean knowledge 18.49 ± 4.257 . Supported study shown by Bhagavathula AS et al (2020)¹¹ participants had inadequate knowledge. Another study by Abdelhafiz AS et al (2020)¹² found that out of 559 participants, the mean knowledge score was 16.39 ± 2.63 . Huynh G et al (2020)¹³ showed that out of 327 the health workers had mean knowledge 8.17 ± 1.3 regarding COVID-19.

This study found that perception of health professional towards COVID-19; nearly half of them 49.2% had positive, 35.3% had negative and 15.5% had neutral perception. Similar study Bhagavathula AS et al (2020)¹¹ showed positive perceptions of COVID-19. Abdelhafiz AS et al (2020)¹² showed that the majority of the participants had a positive attitude of COVID19. Huynh G et al (2020)¹³ showed that the health workers had mean attitude score 1.86 ± 0.43 regarding COVID-19.

This study found significant association of knowledge with demographic variables gender ($p=0.002$), occupation ($p=.001$), years of service ($p=.000$), Job ($p=.001$), heard about COVID-19 ($p=.000$) and source of information about COVID-19 ($p=.000$) at ($p<0.05$) while perception was not significant all the variables at 5% of p value.

Similar study by Abdelhafiz AS et al (2020)¹² found significant association of knowledge with demographic variables age ($p < 0.001$), residence ($p < 0.001$), education

as well as to the monthly income ($p < 0.001$) at 5% of p value.

CONCLUSION

An emerging infectious disease COVID-19 and there are no definitive treatment. The effective control and preventive strategies depends on early case detection and practicing specific precautions to each and every confirmed or suspected cases visiting hospitals. The vital roles of health care professionals in managing COVID-19 cases is really challenging while they 41.8% had excellent, 50.4% good knowledge but nearly half of them 49.2% had positive, 35.3% had negative and 15.5% had neutral perception about COVID-19.

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