

Knowledge, Risk Perceptions, and Preventive Measures
Towards COVID 19 Outbreak Among Health Care
Professionals- An Online Based Survey

By

Surbhi Chaturvedi

*Dissertation submitted in partial fulfillment of the requirements of the degree
MBA Hospital and Health Management*

Academic year, 2018-2020



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Sincerely

Dr. Surbhi Chaturvedi

MBA HM-23

The IIHMR University, Jaipur

TABLE OF CONTENTS

Acknowledgement

1. Executive Summary

2. Dissertation report on - **Knowledge, Risk perceptions, and Preventive Measures towards COVID-19 outbreak among Health Care Professionals- An Online Based Survey.**

2.1 Introduction

2.2 Research Question

2.3 Objectives

2.4 Literature Review

2.5 Materials and Methods

2.6 Results

2.7 Tables

2.8 Graphs

2.9 Discussion

2.10 Conclusion

2.11 Suggestions

2.12 References

INTERN PARTNER

Intern partner is a specialized consultancy group works in research, postgraduate education and training in the health sector. The Intern partner aims to create new insight among students and provide evidence and inputs for developing their strategies.

The Intern Partner offers internship, research and consultancy in the fields of hospital management, health management, pharmaceutical management, rural management, and a variety of fields related to the health sector.

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- Trend analysis

- Design and Conduct Management Training for Health Sector
- Design Product Portfolio for Pharma Companies
- NGO Management and Networking
- NABH Accreditation (Pipeline)

TITLE

Knowledge, Risk perceptions, and Preventive Measures towards COVID 19 outbreak among Health Care Professionals - An Online Based Survey.

2.1 Introduction

India is bravely fighting the deadly COVID-19 pandemic. It is caused by 2019-nCoV virus. The International Committee on Taxonomy of Viruses (ICTV) which was later coined a new name as syndrome coronavirus 2 (SARS-CoV-2). Healthcare professionals working on the frontier are mostly susceptible to this killing disease.¹ By June 1st 2020 India had reported more than 1, 80, 596 cases and 5612 deaths.

Both (SARS-CoV) severe acute respiratory syndrome-coronavirus and the (MERS-CoV) Middle East respiratory syndrome-coronavirus have already been found to cause diseases in humans. Research studies on familial and hospital clusters have confirmed person-to-person transmission of SARS-CoV-27. It has been found that epidemics of various respiratory diseases caused by viruses have their origin in animals before entering into other hosts like humans. MERS-CoV was found to have Arabian camels to human transmission, whereas SARS-CoV spread from civet cats to humans. The origin of SARS-CoV-2 have been traced to occur in bats. In Wuhan, Hubei Province, China, first cases were revealed which hinted an animal-to-person spread from a live animal market.² Then the virus start spreading outside Hubei and ultimately to the whole world through human transmission. Community spread has also occurred in many countries.

After 3 months of first case in China, the World Health Organization (WHO) on 11 March 2020 announced novel coronavirus as pandemic.

With this severe method of person to person transmission, healthcare professionals are amongst the most vulnerable to be exposed to the virus.³ The extreme infectious nature of SARS-CoV-2 virus is an additional threat on our health system other than the load of prolonged working hours, it also takes toll on physical and mental weakness .⁴ So, an online based survey was conducted to study and assess the awareness, risk perceptions and various preventive measures among our health care professionals.

2.2 Research Question

- What is the level of Knowledge, risk perception, and preventive measure towards COVID-19 among health care professionals?

2.3 Objectives

- a) To assess the Knowledge of COVID-19 among Health Care Professionals
- b) To gain insights into the risk perceptions of COVID-19 among Health Care Professionals
- c) To determine the preventive measures taken by Health Care Professionals towards COVID-19 outbreak .

2.4 Literature Review

1. In 2020, a study was done by Pranav D. Modi et al , regarding awareness towards COVID 19 among health care professionals on in Mumbai Metropolitan Region among Healthcare students and Professionals. A total of 1562 responders were taken. The sampling technique used was convenience sampling. For all groups and sub groups

Descriptive statistics were performed. The awareness among all sub groups with 71.2% reported correct answers. Majority of the correct answers were from medical students. Less than 50% of the correct responders were aware about the correct method for the application of a mask/respirator but more than 50% knew about the preferred hand hygiene method.

2. A cross-sectional study was conducted by Bhagavathula et al in 2020 was

during the first week of march 2020. A 23 survey item instrument was used and distributed randomly using social media. Out of 529 participants 61.0% of Health care workers had poor knowledge of this transmission. Factors such as profession and age were associated with improper knowledge of COVID-19.

3. A qualitative study was conducted by Liu et al in April 2020

About the awareness of health care providers in COVID-19 crisis. 9 nurses and 5 physicians were included in the study from five COVID-19 hospitals in Hubei. From 10 Feb to 15 Feb in-depth interview via telephone were conducted. The three theme categories which were analyzed:-

a)“being fully responsible for patients' wellbeing—‘this is my duty’”.

b) “challenges of working on COVID-19 wards”.

c) “resilience amid challenges”.

The authors concluded that the intensive work exhausted health-care providers physically and psychologically. Regular and intensive training for all health- care providers is necessary to promote preparedness and efficacy in crisis management.

2.5 Methodology

Study design: Descriptive Cross-sectional study

Study population: Health care Professionals

Study duration: 5th March to 5th June 2020.

A self-administered questionnaire was constructed based on the guidelines published by WHO Survey Tool and Guidance⁸ for COVID-19 and the latest interim information for healthcare workers (HCW) advocated by the CDC⁵ and updated on 7 March 2020. The questionnaire comprised of 20 questions which comprised of 5 questions related to socio- demographic features and 15 questions assessing Knowledge, Risk perceptions and Preventive measures of health care professionals. The questions can be categorized as follows:-

1. Questions assessing the **Knowledge** of COVID 19.
 - The questions from Q1 to Q3 and Q15 assessed the awareness of COVID-19 among health care workers.
2. Questions highlighting the **Risk perceptions** of COVID-19.
 - It consisted of Q5 . Q6 Q 8 Q9 and Q14.
3. Questions determining the **Preventive measures** towards COVID-19
 - Q4 . Q10 , Q11 , Q12, Q13, Q7 determined the preventive measures of our health care workers.

Q16- Q20 obtained the demographic data such as Age, Gender, Qualifications, Profession and State residing in.

An informed consent stating a brief overview of the survey was also prepared which was attached along with the questionnaire. Convenient Sampling was used. Survey Monkey online portal was used to design the survey. The link for the survey was downloaded and circulated through e-mail, Whatsapp and other social media platforms for responses. The survey link was opened on 16th May and responses were collected till 22nd May 2020. The responses were download from the Survey Monkey Portal. The data was coded and entered into the Excel sheet. SPSS 17 version was used to perform descriptive statistics.

2.6 Results

A total of 343 health care professionals answered the survey. Among them 23 participants had incomplete responses which were not considered for final analysis. Thus 320 Health Care Professionals responses were assessed for the final outcome of the online survey.

SOCIO- DEMOGRAPHIC DATA

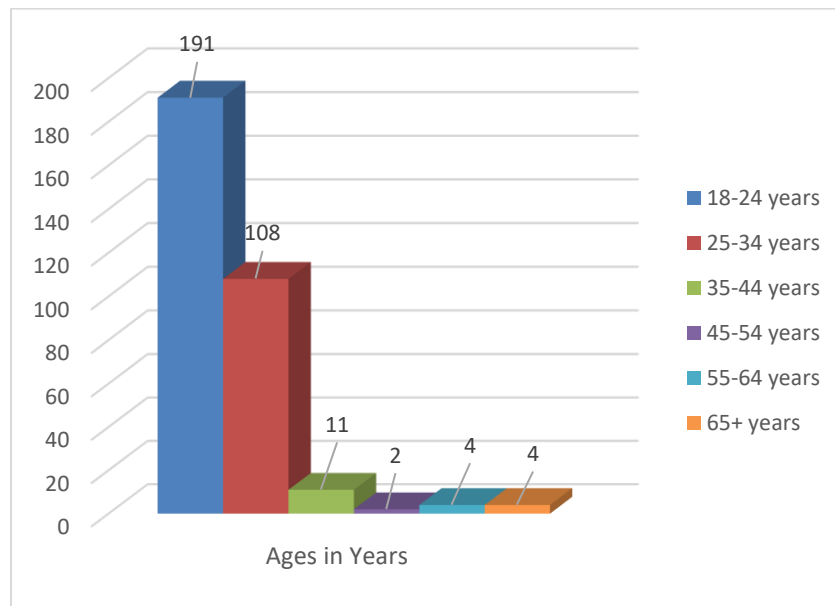
a) Age Distribution of Health Care professionals

Out of 320 respondents, 191(59.7%) belonged to 18-24 years group, 108 (33.8%) belonged to 25-34 years group.

TABLE – 1: Age in years

Sl no.	Answer choices	Responses	
		N	%
a)	18-24 years	191	59.7
b)	25-34 years	108	33.8
c)	35-44 years	11	3.4
d)	45-54 years	2	.6
e)	55-64 years	4	1.3
f)	65+ years	4	1.3
	Total	320	100%

GRAPH – 1: Age in years



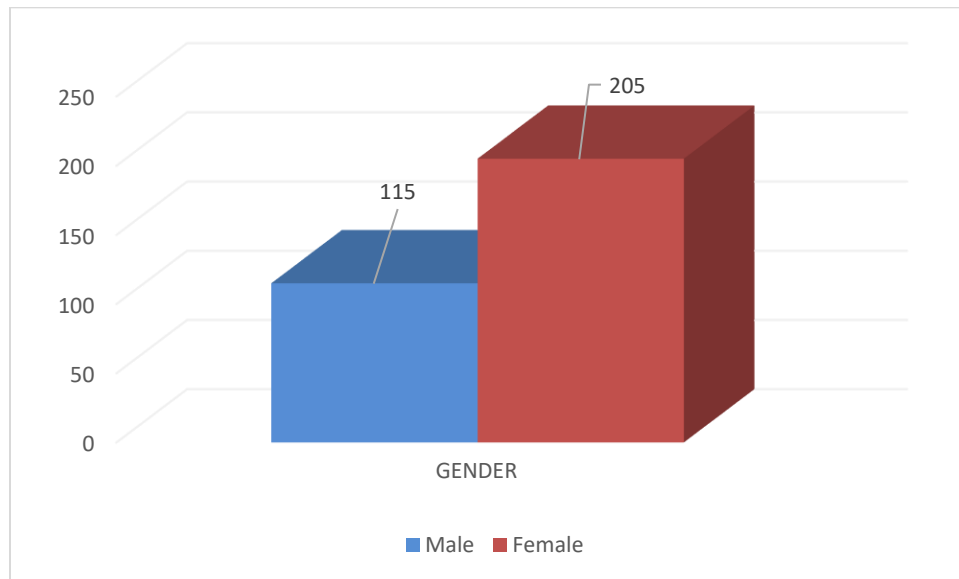
b) Gender Distribution of Health Care professionals

Among 320 Health care professionals, 115 (35.9%) were males and 205 (64.1%) were females.

TABLE – 2: Gender Distribution

Sl no.	Answer choices	Responses	
		N	%
a)	Male	115	35.9
b)	Female	205	64.1
	Total	320	100%

GRAPH – 2 : Gender Distribution



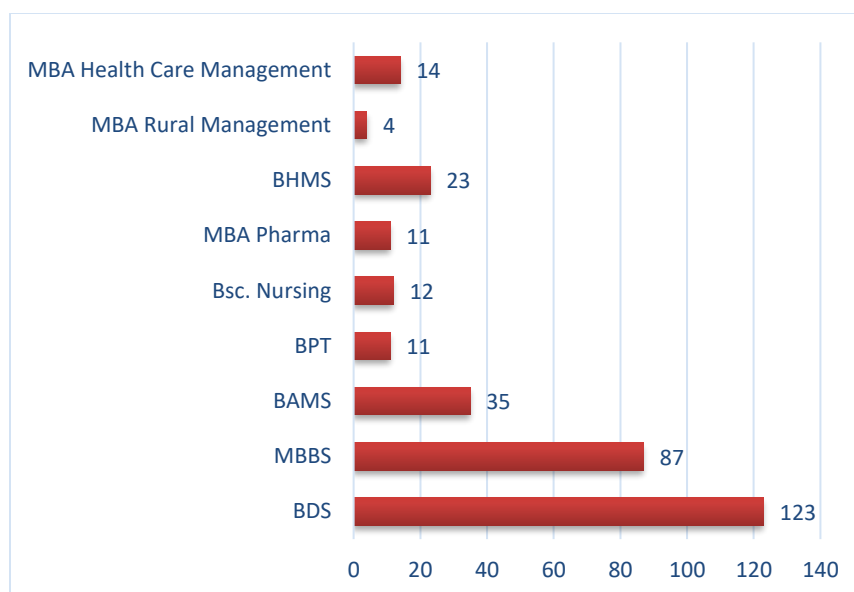
c) Distribution of Health Care professionals in Relation to Educational Qualifications

Out of 320 participants, 123 (38.5%) were qualified BDS graduate, 87 (27.2%) possessed MBBS Degree, 35 (10.9%) were qualified BAMS practitioners, 11 (3.4%) obtained BPT Degree, 12 (3.8%) had BSc. Nursing qualifications. 11 (3.4%) MBA Pharma Graduates, 4 (1.2%) MBA Rural Health Management Graduates and 14 (4.4%) MBA Health Care Management Graduates were also part of the survey.

TABLE – 3: Educational Qualifications

Sl no.	Answer choices	Responses	
		N	%
a)	BDS	123	38.5
b)	MBBS	87	27.2
c)	BAMS	35	10.9
d)	BPT	11	3.4
e)	Bsc. Nursing	12	3.8
f)	MBA Pharma	11	3.4
g)	BHMS	23	7.2
h)	MBA Rural Management	4	1.2
i)	MBA Health Care Management	14	4.4
	Total	320	100%

GRAPH – 3: Educational Qualifications



d) Distribution of Health Care professionals in Relation to States/ Union Territories
Residing in-

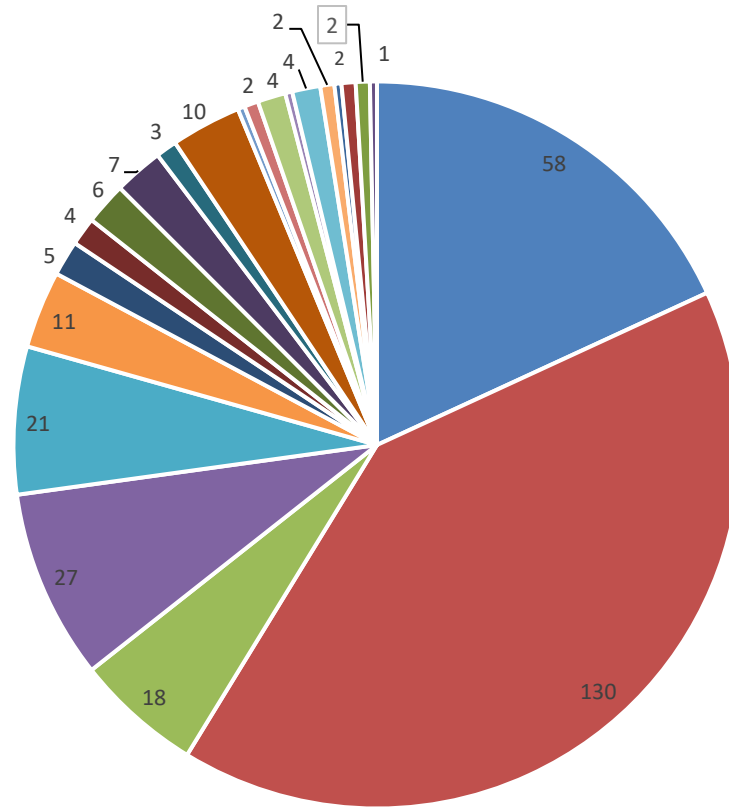
Majority (n= 130, 40.6%) of Health care professionals were residing in Punjab. 58 (18.1%) were from Madhya Pradesh, 18 (5.6%) were from Rajasthan, 27 (8.4%) from Delhi, 21 (6.6 %) from Maharashtra.

TABLE – 4: States/ Union Territories Residing in

Sl no.	Answer choices	Responses	
		N	%
a)	Madhya Pradesh	58	18.1
b)	Punjab	130	40.6
c)	Rajasthan	18	5.6
d)	Delhi	27	8.4
e)	Maharashtra	21	6.6
f)	Uttar Pradesh	11	3.4
g)	Kerala	5	1.6

h)	West Bengal	4	1.3
i)	Karnataka	6	1.9
j)	Andhra Pradesh	7	2.2
k)	Assam	3	.9
l)	Haryana	10	3.1
m)	Chhattisgarh	1	.3
n)	Jammu & Kashmir	2	.6
o)	Jharkhand	4	1.3
p)	Uttarkhand	1	.3
q)	Telangana	4	1.3
r)	Bihar	2	.6
s)	Tamil Nadu	1	.3
t)	Sikkim	2	.6
u)	Gujarat	2	.6
v)	Dadra and Nagar Haveli	1	.3
	Total	320	100%

GRAPH – 4: States/ Union Territories Residing in



- | | | |
|--------------------------|-------------------|-----------------|
| ■ Madhya Pradesh | ■ Punjab | ■ Rajasthan |
| ■ Delhi | ■ Maharashtra | ■ Uttar Pradesh |
| ■ Kerala | ■ West Bengal | ■ Karnataka |
| ■ Andhra Pradesh | ■ Assam | ■ Haryana |
| ■ Chhattisgarh | ■ Jammu & Kashmir | ■ Jharkhand |
| ■ Uttarakhand | ■ Telangana | ■ Bihar |
| ■ Tamil Nadu | ■ Sikkim | ■ Gujarat |
| ■ Dadra and Nagar Haveli | | |

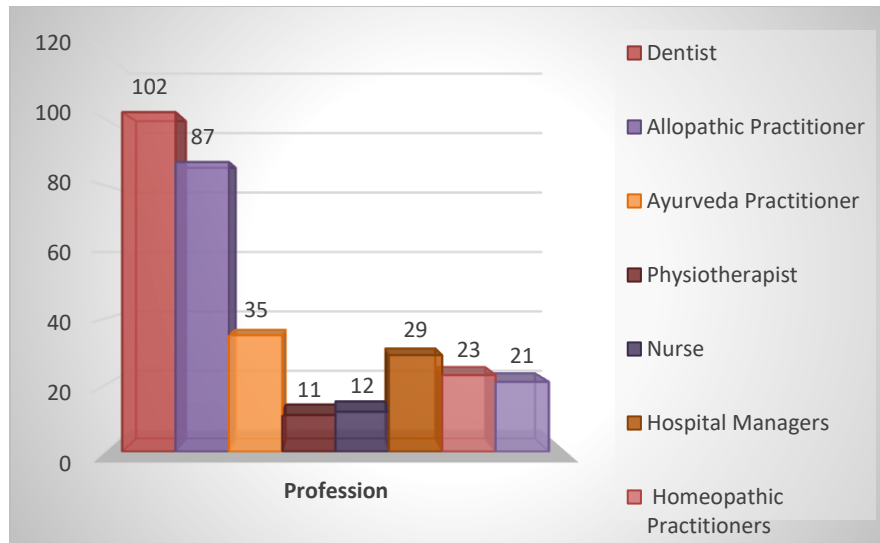
e) Distribution of Health Care professionals in Relation to Profession

Among 320 health care professionals, 102 (31.9%) were Dentists, 87 (27.2%) were Allopathic Practitioners, 35 (10.9%) were Ayurveda Practitioners. Hospital Managers consisted of 29 (9.1%), Homeopathic Practitioners comprised of 23 (7.2%). 21 (6.6%) Dental Students, 11(3.4%) Physiotherapists and 12 (3.7%) Nurses were also part of the survey.

TABLE – 5: Profession

Sl no.	Answer choices	Responses	
		N	%
a)	Dentist	102	31.9
b)	Allopathic Practitioners	87	27.2
c)	Ayurveda Practitioners	35	10.9
d)	Physiotherapist	11	3.4
e)	Nurse	12	3.7
f)	Hospital Managers	29	9.1
g)	Homeopathic Practitioners	23	7.2
h)	Dental Student	21	6.6
	Total	320	100%

GRAPH – 5: Profession



RESPONSES IN RELATION TO Q1: The Virus causing COVID-19 infection is called:

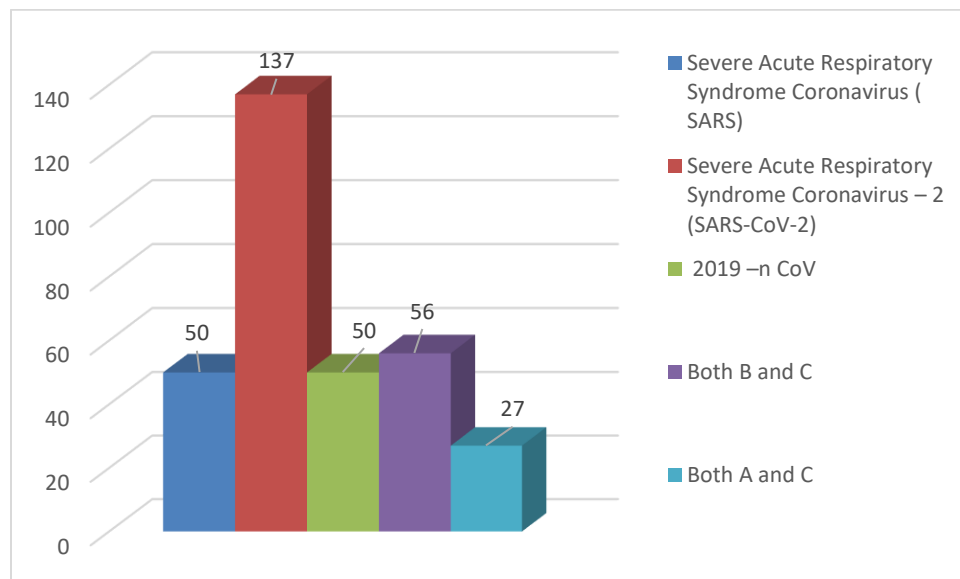
Among 320 who completed the survey, 50 (15.6%) had answered Severe Acute Respiratory Syndrome Coronavirus , 137 (42.8%) selected Severe Acute Respiratory Syndrome Coronavirus – 2, 50 (15.6%) belonged to 2019 –n CoV. 56 (17.5%) of respondents answered correctly that both Severe Acute Respiratory Syndrome Coronavirus – 2 and 2019 –n CoV are names of virus causing COVID 19. Out of the total only 27 (8.4%) answered incorrectly.

Table- 6

Sl no.	Answer choices	Responses	
		N	%
a)	Severe Acute Respiratory Syndrome Coronavirus	50	15.6

b)	Severe Acute Respiratory Syndrome Coronavirus – 2	137	42.8
c)	2019 –n CoV	50	15.6
d)	Both B and C	56	17.5
e)	Both A and C	27	8.4
	Total	320	100 %

Graph- 6



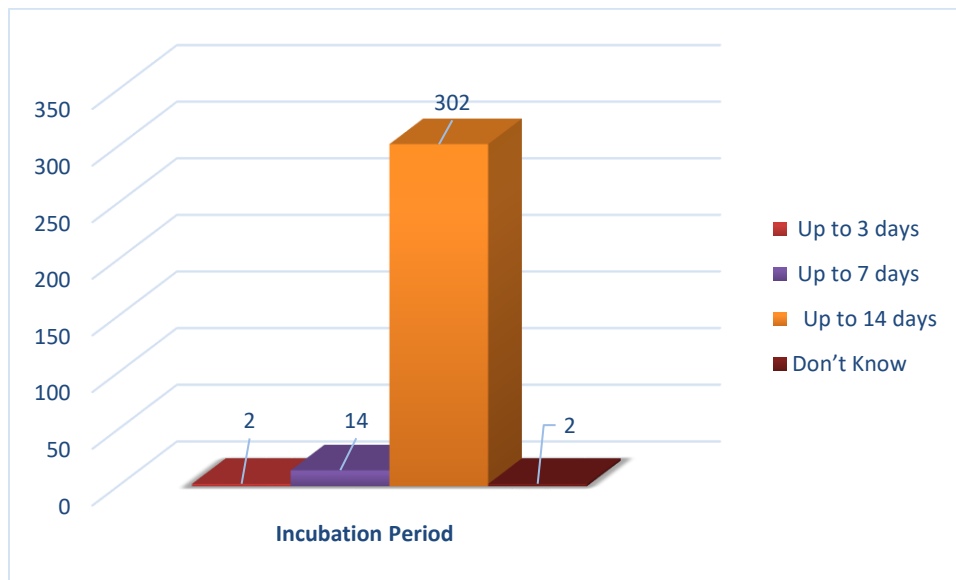
RESPONSES IN RELATION TO Q2: What is the maximum incubation period of the novel coronavirus?

Most of the respondents -304 (94.4%) stated correctly that maximum incubation period of novel coronavirus is upto 14 days. This shows that majority of the participants have adequate knowledge about incubation period.

Table 7:

Sl no.	Answer choices	Responses	
		N	%
a)	Up to 3 days	2	.6
b)	Up to 7 days	14	4.4
c)	Up to 14 days	302	94.4
d)	Don't Know	2	0.6
	Total	320	100 %

Graph 7:



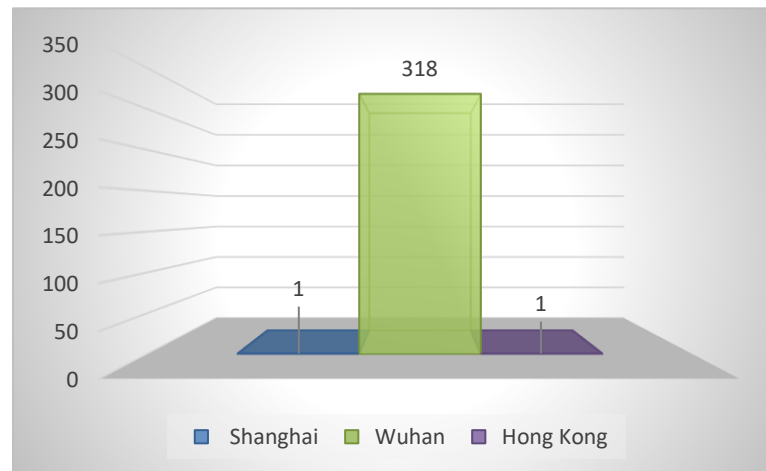
RESPONSES IN RELATION TO Q3: First reports of cases were reported from which city of China?

Majority of the participants – 318 (99.4%) answered correctly that first **reports** of cases were reported Wuhan city of China. This highlights the fact that almost all the health workers are aware of the place of origin of COVID 19.

Table 8:

Sl no.	Answer choices	Responses	
		N	%
a)	Shanghai	1	.3
b)	Wuhan	318	99.4
c)	Hong Kong	1	.3
	Total	320	100 %

Graph 8:



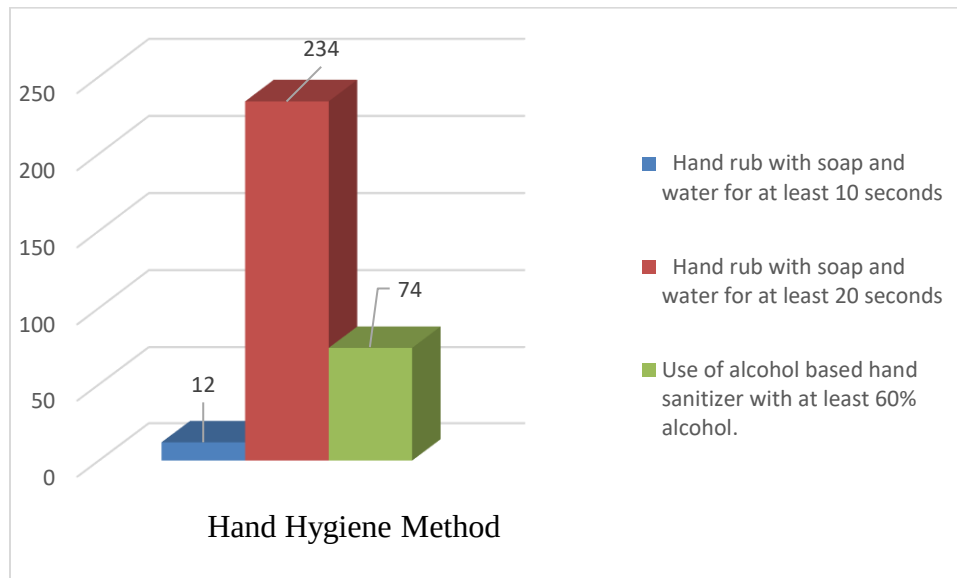
RESPONSES IN RELATION TO Q4: Preferred method of hand hygiene for soiled hands is

Most of the health workers (73.1%) suggested that Hand rub along with soap , water for at least 20 seconds was most preferred method of hand hygiene.

Table 9:

Sl no.	Answer choices	Responses	
		N	%
a)	Hand rub with the use of soap and water for at least 10 seconds	12	3.8
b)	Hand rub with the use of soap and water for at least 20 seconds	234	73.1
c)	Use of alcohol based hand sanitizer having min 60% alcohol content in it.	74	23.1
	Total	320	100 %

Graph 9:



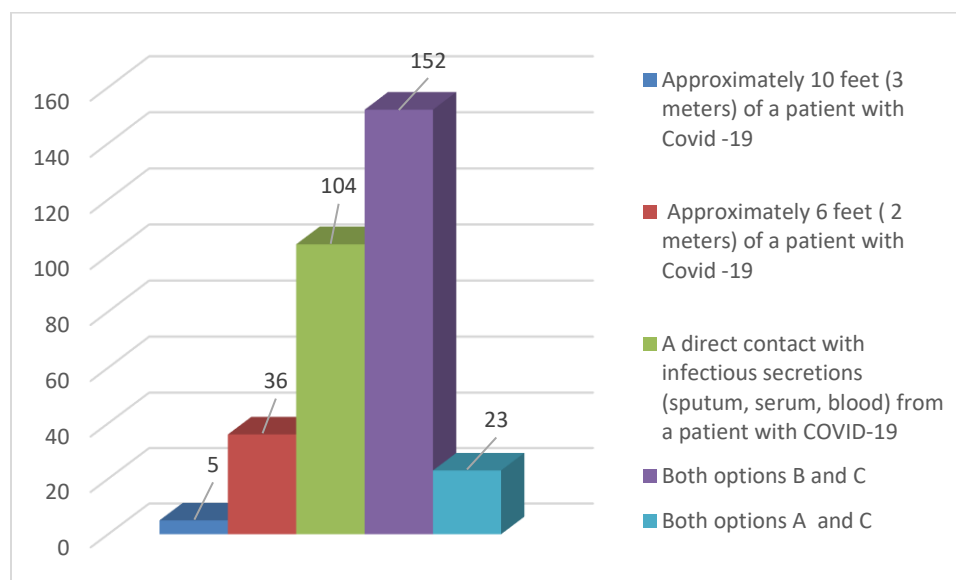
RESPONSES IN RELATION TO Q5: Which of the following is considered as close contact?

About 152 respondents (47.5%) correctly identified both being within approximately 6 feet of a patient with Covid -19 for a prolonged period of time and having a direct contact with infectious secretions as close contacts

Table 10:

Sl no.	Answer choices	Responses	
		N	%
a)	Being within 10 feet of a patient who is having Covid -19 for some time.	5	1.6
b)	Being within 6 feet of a patient who is having Covid -19 for some time.	36	11.3
c)	Coming in direct proximity with infectious secretions (sputum, serum, blood) from a patient who is having COVID-19	104	32.5
d)	Both options B and C	152	47.5
e)	Both options A and C	23	7.2
	Total	320	100 %

Graph 10:



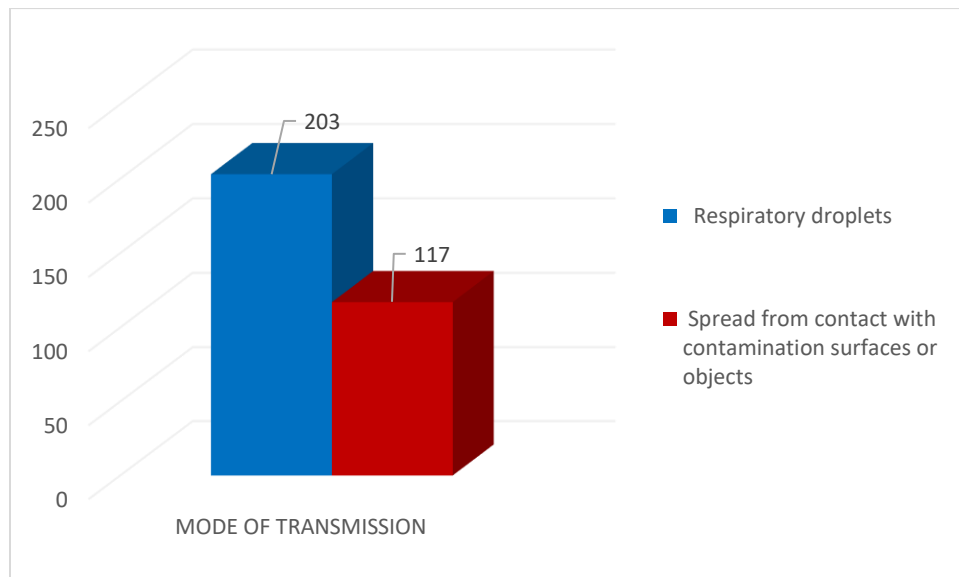
RESPONSES IN RELATION TO Q6: The Main Mode of transmission of virus from individual to individual is through

Majority (n=203, 63.4%) of the participants had correctly stated that respiratory droplets is the main mode of transmission of virus from individual to individual. Others (n=117, 37.5 %) hinted at spread from coming in contact with contaminated surfaces as the other mode of transmission.

Table 11:

Sl no.	Answer choices	Responses	
		N	%
a)	Respiratory droplets	203	63.4
b)	Spread when comes in contact with contaminated surfaces	117	36.6
	Total	320	100 %

Graph 11:



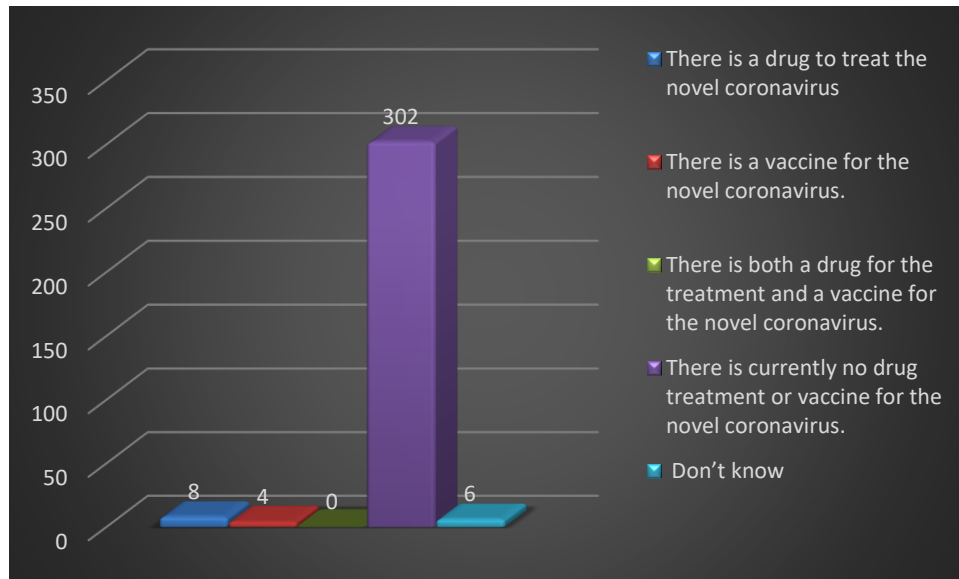
RESPONSES IN RELATION TO Q7: Which answer is correct according to you?

Out of 320 respondents who completed the survey, 302 (94.4%) stated that there is currently no drug treatment or vaccine for the novel coronavirus.

Table 12:

Sl no.	Answer choices	Responses	
		N	%
a)	There is a drug to treat the novel coronavirus	8	2.5
b)	There is a vaccine for the novel coronavirus.	4	1.3
c)	There is both a drug for the treatment and a vaccine for novel coronavirus.	0	0
d)	Currently there is no medication or vaccine for the novel coronavirus.	302	94.4
e)	Don't know	6	1.9
	Total	320	100 %

Graph 12:



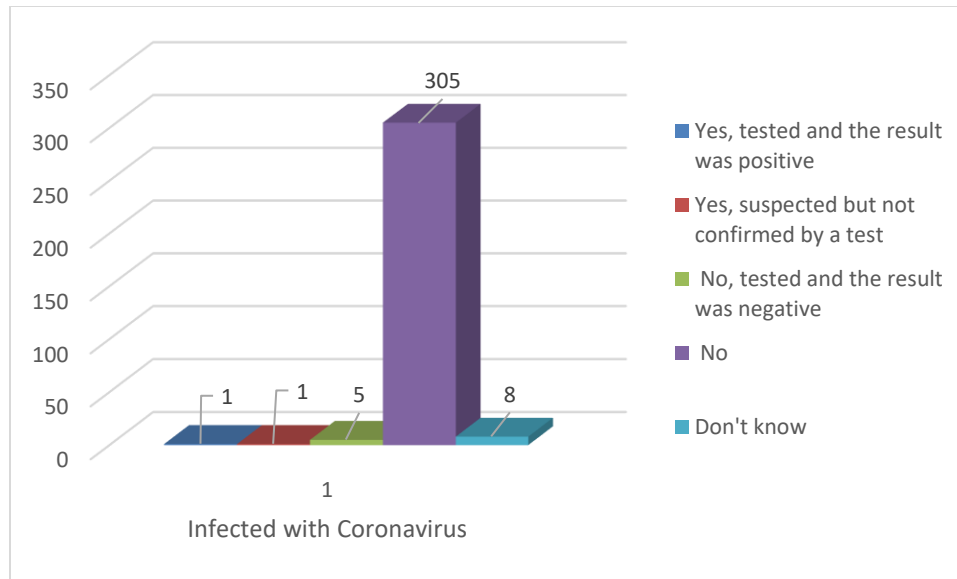
RESPONSES IN RELATION Q8: Are you, or have you been, infected with the novel corona virus?

Out of 320 health workers, 305 (95.3%) answered that they have not been infected with novel corona virus. Only two health workers stated that they have been infected among which one has tested positive and one is suspected.

Table 13:

Sl no.	Answer choices	Responses	
		N	%
a)	Yes, tested and the result was positive	1	.3
b)	Yes, suspected but not confirmed by a test	1	.3
c)	No, tested and the result was negative	5	1.6
d)	No	305	95.3
e)	Don't know	8	2.5
Total		320	100 %

Graph 13:



RESPONSES IN RELATION TO Q9: Do you know people in your nearby social circle who are or have been infected with novel corona virus?

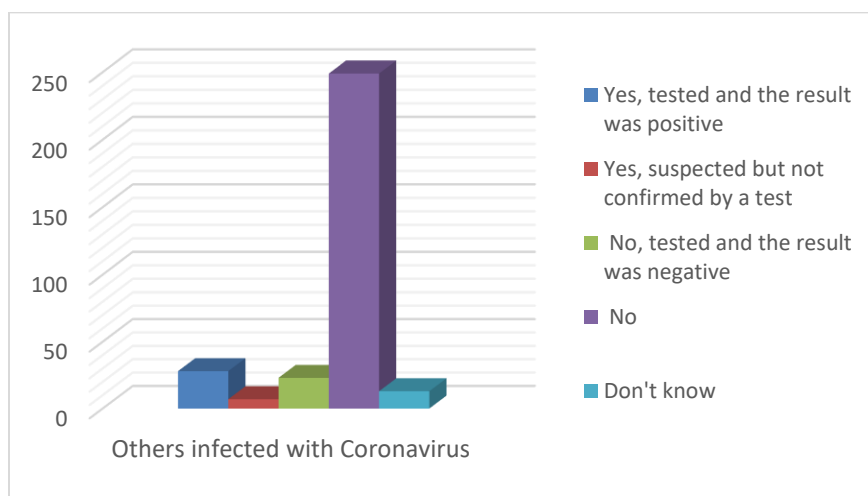
Majority (n=249, 77.8%) of the health care professionals stated that they did not know people in their nearby social circle who are or have been infected with novel corona virus. However 34 (11%) health care workers reported that having known people who have been infected with corona. Among them, 28 (8.8%) health care professionals know people who were corona positive and 7 (2.2%) of them were suspected to have coronavirus.

Table 14:

Sl no.	Answer choices	Responses	
		N	%
a)	Yes, confirmed	28	8.8
b)	Yes, suspected but not confirmed by a test	7	2.2
c)	No, tested and the result was negative	23	7.2

d)	No	249	77.8
e)	Don't know	13	4.1
Total		320	100 %

Graph 14:



RESPONSES IN RELATION TO Q10 Which of the following steps have you taken to avoid infection from novel corona virus?

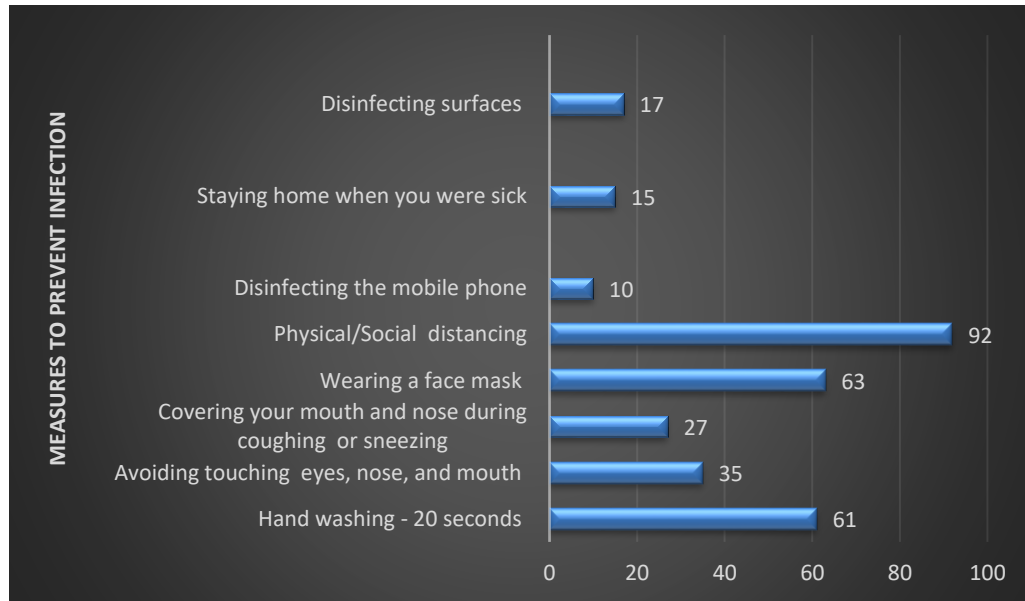
Among 320 health care professionals, 92 (28.8%) of them advocated Physical/Social distancing as the measure to prevent infection from coronavirus.

Table 15:

Sl no.	Answer choices	Responses	
		N	%
a)	Hand washing for at least 20 seconds	61	19.1
b)	Avoid to touch your eyes, nose, and mouth with contaminated hands	35	10.9
c)	Covering your mouth and nose while coughing and sneezing	27	8.4
d)	Wearing a face mask	63	19.7
e)	Physical/Social distancing (keeping minimum 2 metres between you and other persons outside your household)	92	28.8
f)	Disinfecting the mobile phone	10	3.1
g)	Staying home when you were sick or when you had a	15	4.7

	cold		
h)	Disinfecting surfaces	17	5.3
	Total	320	100 %

Graph 15:



RESPONSES IN RELATION TO Q11: How worried are you about the impact of coronavirus on you personally?

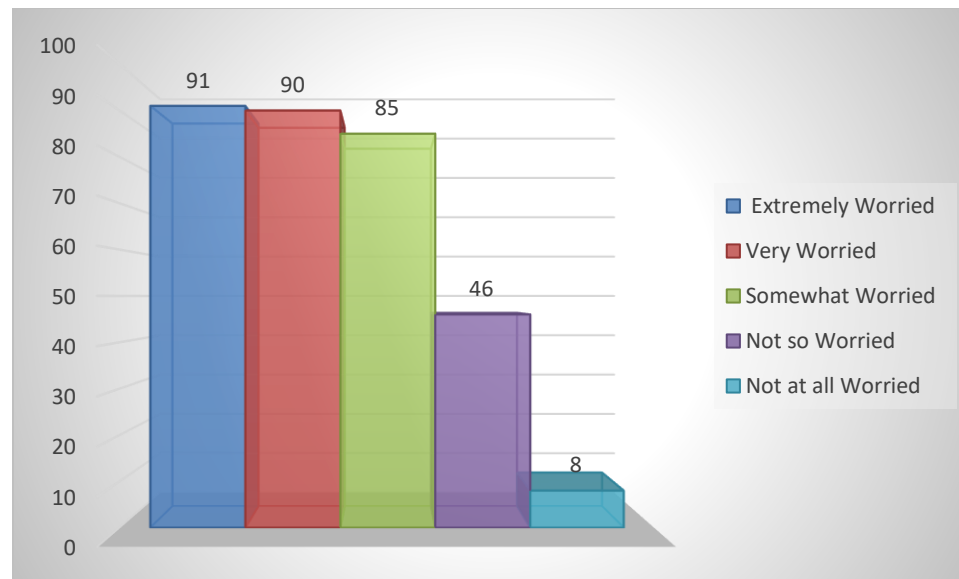
Majority (n=266, 83%) were worried about the impact of coronavirus.

Table 16:

Sl no.	Answer choices	Responses	
		N	%
a)	Extremely Worried	91	28.4
b)	<i>Very Worried</i>	90	28.1
c)	Somewhat Worried	85	26.6
d)	Not so Worried	46	14.4
e)	Not at all Worried	8	2.5
	Total	320	100%

Graph 16:

Q11: How worried are you about the impact of coronavirus on you personally?



RESPONSES IN RELATION Q12: The type of information I need the most and connects to...

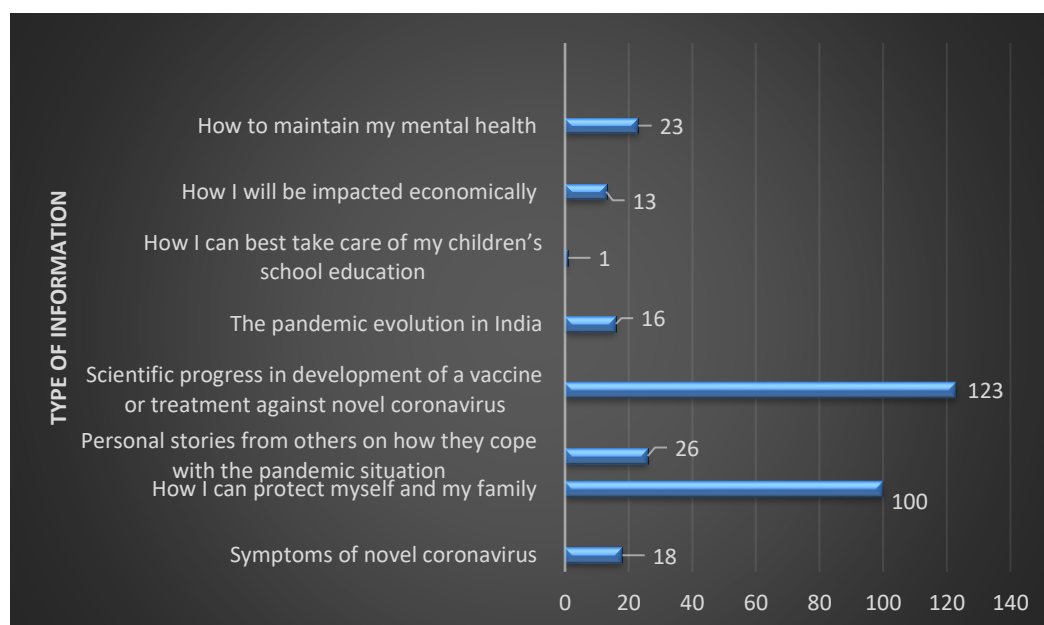
123 (38.4%) health care professionals stated that scientific development in making of vaccine or treatment for novel coronavirus was the most needed information.

Table 17:

Sl no.	Answer choices	Responses	
		N	%
a)	Symptoms of novel coronavirus	18	5.6
b)	How I should protect myself and my family against novel coronavirus	100	31.3
c)	Personal stories from other people on how they cope with the pandemic situation	26	8.1
d)	Scientific development in making of vaccine or treatment for novel coronavirus	123	38.4
e)	The pandemic evolution in India	16	5.0

f)	How I should take good care of my children's school education	1	.3
g)	How I will be impacted economically by the pandemic	13	4.1
h)	How to maintain my mental health during the isolation	23	7.2
	Total	320	100%

Graph 17:



RESPONSES IN RELATION TO Q13: How are you going to rate your knowledge level on how to prevent spread of the novel corona virus?

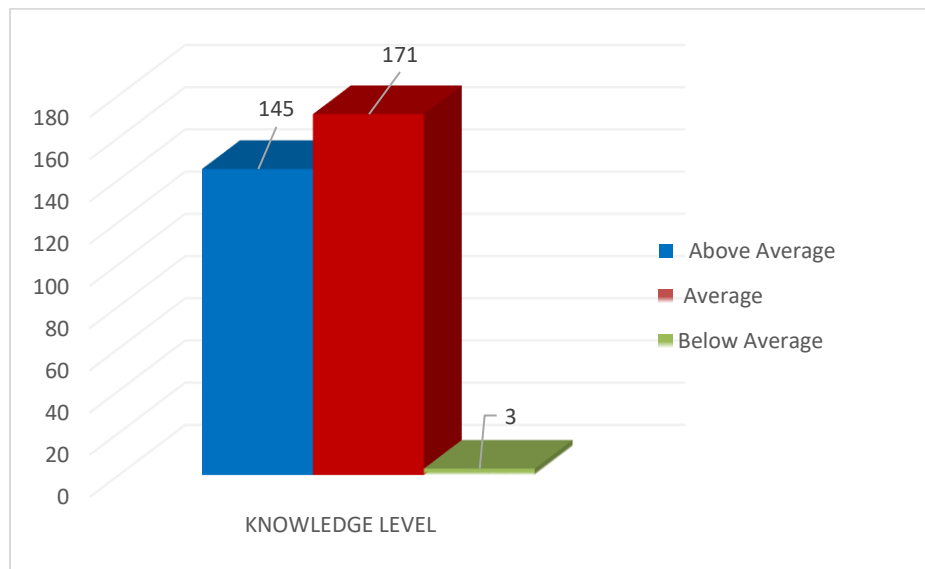
Among 320 health care workers, 316 (98.8%) of them reported that their knowledge level on how to prevent spread of the novel corona virus was Average and Above Average together. 145

(45.5%) of health care professionals stated Average knowledge level and about 171 (53.6%) reported Above average knowledge level.

Table 18:

Sl no.	Answer choices	Responses	
		N	%
a)	Above Average	145	45.5
b)	Average	171	53.6
c)	Below Average	4	1.2
	Total	320	100%

Graph 18:



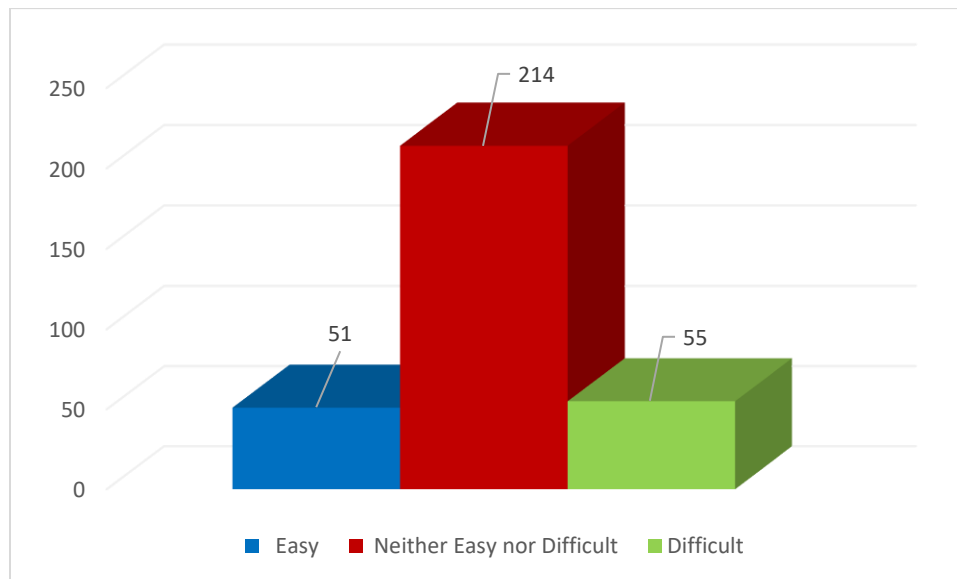
RESPONSES IN RELATION TO Q14: For me avoiding an infection with the novel coronavirus in the current situation is....

214 (66.9%) of health care professionals stated that avoiding an infection with the novel coronavirus in the current situation is neither Easy nor Difficult. 55 (17.2%) and 51 (15.9%) of health care professionals reported that avoiding an infection is Difficult and Easy respectively.

Table 19:

Sl no.	Answer choices	Responses	
		N	%
a)	Easy	51	15.9
b)	Neither Easy nor Difficult	214	66.9
c)	Difficult	55	17.2
	Total	320	100%

Graph 19:



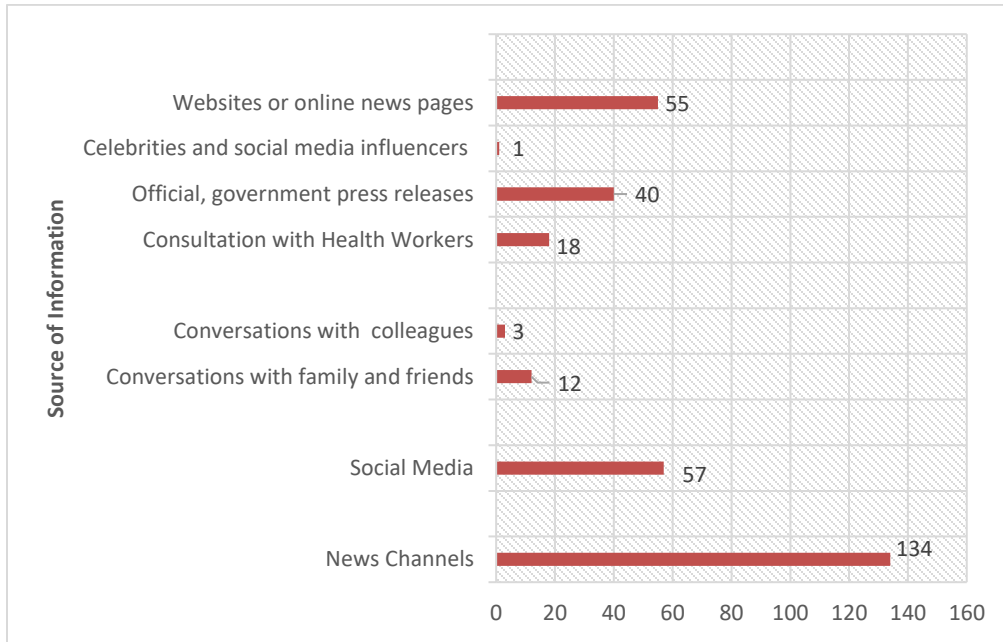
RESPONSES IN RELATION Q15: How often do you use the following sources of information to stay informed about the novel corona virus?

Among 320 health care professionals, 134 (41.9%) answered that News Channels were the most often used source of information about the novel coronavirus. Social media was selected by 57(17.8%) and Websites or online pages were stated by 55 (17.2%) health care professionals. 40 (12.5%) participants selected Official, government press releases.

Table 20:

Sl no.	Answer choices	Responses	
		N	%
a)	News Channels	134	41.9
b)	Social Media	57	17.8
c)	Conversations with family and friends	12	3.8
d)	Conversations with colleagues	3	.9
e)	Consultation with Health Workers	18	5.6
f)	Official, government press releases	40	12.5
g)	Celebrities and social media influencers	1	.3
h)	Websites or online news pages	55	17.2
	Total	320	100%

Graph 20:



2.9 Discussion

COVID-19 pandemic has caused catastrophic effect worldwide since its emergence from China in December 2019. A suspected case identification and isolation is the crucial step which will help in reducing the spread of COVID-19. In this survey, most of the respondents clearly defined a close contact. This in contrast to a survey conducted by Modi et al. Cureus in Mumbai Metropolitan Region where less than half of the participants clearly described a "close contact." In our survey, majority of the respondents stated that Physical/Social Distancing as the measure to prevent infection of COVID-19 which is also the most recommended method by WHO. However, only few respondents stated to be familiar with the knowledge that the virus causing

COVID -19 was earlier called as 2019-n CoV then it was later known as (SARS-CoV-2). Syndrome Coronavirus 2. This suggests less awareness regarding the knowledge of COVID-19. Most of the health professionals stated that they relied on News Channels to keep themselves updated about the novel corona virus. This hints at scientific developments published in the News channels should be authenticated since most of the health care professionals depend upon it.

2.10 Conclusion

Our study shows that although our health care professionals are taking adequate preventive measures but they are worried about Coronavirus spread and its implications on our health care infrastructure. Majority of the participants in the study had a good knowledge about the origin, incubation period of COVID -19 and correctly identified its main mode of transmission. However, their knowledge regarding measures to prevent COVID -19 was reported to be average.

2.11 Suggestions

The findings of our study hints at implementing regular training and interventional programs on various infection control guidelines and practices regarding COVID-19 across all healthcare professions. Periodic webinars , online interactive sessions , E posters , online campaigns on various Social Media platforms can be a very efficient and safe tool to create more awareness towards COVID 19.

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