

Attitude and Practices of Health Care Professionals and Their Family Members toward Health Care Professionals Dealing with Covid-19 Patients in New Delhi, India

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ABSTRACT

BACKGROUND

Coronavirus was noticed in the mid-1930's and the first case of infection in humans was reported as a cold in 1960. In December 2019, clusters of pneumonia cases caused havoc in China. In order to eliminate the infection in the current pandemic, World Health Organisation (WHO) has furnished several recommendations, online courses, and training sessions to increase knowledge, prevention, and control among the health care workers (HCWs). It is crucial to guarantee the safety of not only the health care professionals but also the people who are in close contact with them. We wanted to assess the attitude and safety practices of family members of health care professionals dealing with Covid-19 patients and if the increasing number of cases in India have altered their reaction.

METHODS

A cross-sectional survey-based study was conducted from July - August 2020 on HCWs dealing with Covid-19 patients and any close contact personnel such as family members of HCWs in order to avoid the spread of Covid-19 among individuals aged 14 - 60 years.

RESULTS

A total of 368 respondents participated in the study. Majority of the respondents had a positive attitude. In terms of relation, children had a negative attitude towards having their family member deal with Covid-19 patients (46.2 %; N = 46) whereas, 51.5 % (N = 35) spouses had a more positive outlook and 49.2 % (N = 181) respondents reported that the increasing cases in India had altered their initial reaction.

CONCLUSIONS

Majority of the participants from our study reported a positive attitude towards a family member working in close contact with a Covid-19 patient. More than 50 % of the participants had undertaken various precautions to restrict the spread of the disease.

KEY WORDS

Health Personnel, Infectious Disease Transmission, Pandemic, Preventive Practices, Relatives

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DOI: 10.14260/jemds/2021/460

How to Cite This Article:

Chopra S, Gujral S, Sood S, et al. Attitude and practices of health care professionals and their family members toward the health care professionals dealing with Covid-19 patients in New Delhi, India. J Evolution Med Dent Sci 2021;10(30):2249-2254, DOI: 10.14260/jemds/2021/460

*Submission 14-02-2021,
Peer Review 21-05-2021,
Acceptance 27-05-2021,
Published 26-07-2021.*

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BACKGROUND

Coronaviruses (CoVs) belong to prime set of viruses that cause disease in human beings by transmission through zoonosis.¹ The coronavirus is a single stranded, enveloped, positive sense, RNA virus belonging to Coronaviridae family which consists of Alpha, Beta, Delta and Gamma coronaviruses,² that range from 60 - 140 nm in its diameter, having a crown like structure under the electron microscopy. This appearance is attributed to its spiked surface projections, giving it the name Coronavirus.³ Coronavirus was noticed in the mid-1930's and the first case of infection in humans was reported as a cold in the 1960.⁴ In 2001, according to a Canadian study, Flu like symptoms were identified in roughly 500 patients and out of these, 17 - 18 cases were identified to be infected by coronavirus strain⁵ which was considered non-fatal till 2002.⁴ In over 20 years, two episodes of zoonosis of beta coronaviruses have been reported. The first event was in 2002 - 2003 where a recently discovered beta coronavirus, originated from bats, through an intermediate host i.e. Asian palm civet cats, infected humans in the Guangdong province of China. The virus was later termed as Severe Acute Respiratory Syndrome (SARS) coronavirus, having a mortality rate of 11 % (916 deaths) and infected 8422 people mainly in China and Hong Kong. The second instance was reported in 2012 in Saudi Arabia, where the Middle East Respiratory Syndrome (MERS) coronavirus originated from bats and through the dromedary camels, and infected 2494 people.⁶

In December 2019, clusters of pneumonia cases of unknown origin raised concern among health care officials of Wuhan. Following epidemiological analysis, Wuhan's Huanan seafood market was shut down and Novel CoV was identified as the causative agent on January 7, 2020.³ Reports suggested that Covid-19 (disease caused by Novel CoV) was rapidly progressing among people, set the evidence of human to human transmission (HHT).³ Globally, as of August 09, 2020, 19,849,259 confirmed cases have been reported. In India, 21, 74,625 confirmed cases with 43,585 deaths have been reported with the numbers increasing exponentially. Any person working in close contact with a positive case is at an increased risk of contracting the virus. Close contact can be defined as:

1. Health care associated exposure - including providing care for Covid-19 patients, working with health care workers infected with Covid-19
2. Living in the same household of a Covid-19 patient or a health care worker (HCW)⁷

While millions of people are practicing social distancing by staying at home globally, HCWs are combating the Covid-19 pandemic.⁸ These frontline warriors are exposed to several occupational hazards such as, pathogenic exposure, burnout, disgrace, overcrowding and long working hours.⁹ Several studies suggested a lack of knowledge and attitude of the health care professionals towards the SARS and MERS CoV.¹⁰ In order to eliminate that in the current pandemic, World Health Organisation (WHO) has furnished several recommendations, online courses and training sessions to increase knowledge, prevention and control among the HCWs.¹¹ It is crucial to guarantee the safety of not only the health care professionals but also the people who are in close contact with them.¹² Therefore, all necessary measures must be undertaken to prevent the spread of infection to HCWs¹³ to

safeguard continuous patient care and also to ensure that they do not transmit the virus onto others.¹²

To our knowledge, no study has been conducted on family members of health care professionals. Therefore, the present study intended to assess the attitude and safety practices of family members of health care professionals dealing with Covid-19 patients and if the increasing number of cases in India have altered their reaction.

Objectives

1. To perceive the attitude of HCWs and their family members in dealing with Covid-19 patients following the lockdown period and during the rapid rise of the Covid-19 in India.
2. To assess the safety measures undertaken by the HCWs and their family members.

METHODS

A cross-sectional survey-based study using a self-administered questionnaire was conducted on HCWs dealing with Covid-19 patients and any close contact personnel such as family members of HCWs aged 14 - 60 years. The study was conducted from July - August 2020 during the social distancing in order to avoid the spread of Covid-19 among individuals. HCWs were recruited to participate in the study as they could report the attitude and practices of their family members. Therefore, the following were recruited for the study:

1. Health care workers
2. Close family members such as parents, children or spouse of the HCWs

Sample Size Estimation

Sample size was estimated using nMaster software (version 2, CMC, Vellore). Anticipating a 50 % prevalence of positive attitude towards treating Covid positive patients, among family members of health care workers, an absolute precision of 5 % and a 95 % Confidence interval, a sample size of 384 was found to be sufficient.

Formula

$$N = [Z^2 * P * (1 - p) / d^2]$$

Where,

P - Expected prevalence = 0.50 or 50 %

D - absolute precision required on either side of prevalence = 0.05 or 5 %

Z - 1.96

Statistical Analysis

Data was entered into Microsoft Excel spreadsheet and then checked for any missing entries. It was analysed using Statistical Package for Social Sciences (SPSS) version 21. Categorical variables were summarized as frequencies and continuous variables were summarized as mean and standard deviation. Graphs were prepared on Microsoft Excel. Inferential statistics were performed using chi-square test, One-way Analysis of Variance (ANOVA) & Independent t test.

Chi-square test was used to compare categorical data. Independent t test was used to compare two independent means. ANOVA test was used to compare more than two independent means. The level of statistical significance was set at 0.05.

Study Procedure

The questionnaire was designed using Google forms and for data collection various online platforms were used. The questionnaire consisted of questions regarding demographics, attitude and safety practices opted by the HCWs and their families to prevent the spread of infection.

The demographics included name, age and gender. The attitude section consisted of 5 items and each question was to be answered as 'Positive', 'Negative' or 'Can't say', while the remaining answered as 'Yes', 'No' or 'Maybe'. This attitude part mainly dealt with the initial response of the family towards their family member working closely with Covid-19 patients, whether they had children or old age people at their home and if they had restricted the HCW to treat such cases. 7 items assessed the practices regarding barriers to infection control and concern of spread of the disease to family members and were answered as 'Yes', 'No' or 'Maybe'. The practice part dealt with whether the families had a special provision to isolate the HCWs, whether they felt at risk, whether they were taking extra measures to prevent exposure to other members of the family. The data obtained was exported to the Microsoft Excel 2007 for coding wherein a score of 0 was denoted as 'No' and 'Negative' response and a score of 1 was denoted as 'Yes' and 'Positive' response.

Ethical Considerations

Ethical approval was obtained from the Institutional Ethical Committee, MRDC, MRIIRS, Faridabad, Haryana (Approval number: MRDC / IEC / 2020 / 6A). The participants were

informed about the objective, nature, and procedure of the study. Anonymity and confidentiality were strictly maintained.

RESULTS

A total of 368 respondents participated in the online survey having at least one member of their family as a HCW working in close proximity with Covid-19 patients. Out of the 368 respondents, 140 were HCWs while the remaining 228 participants were their family members. The spouses of HCWs (N = 59; 86.8 %) reported having children and old aged people at their place (Figure 1) and 68.2 % (N = 25) reported that they were afraid of the risk of transmission to other members as their family member was dealing with Covid-19 patients. Majority were found to be worried about the spread of disease to children or older members of the family. Relation wise difference was not statistically significant. Significantly more number of males felt at risk with a family member working closely with Covid-19. However, only 57.1 % (N = 210) respondents had adopted safety practices and had a special provision to isolate the HCWs from other members of the family.

When respondents were asked 'Is there a special provision to distance the health care professional from other members of family at your place?', then majority of them responded as 'Yes'. No statistically significant difference could be found among the responses of males & females. Majority of the respondents had a positive attitude. In terms of relation, children had a negative attitude towards having their family member deal with Covid-19 patients (46.2 %; N = 46) whereas, 51.5 % (N = 35) spouses had a more positive outlook (Figure 2) and 49.2 % (N = 181) respondents reported that the increasing cases in India had altered their initial reaction. (Table 1), and no statistically significant relation wise difference was found.

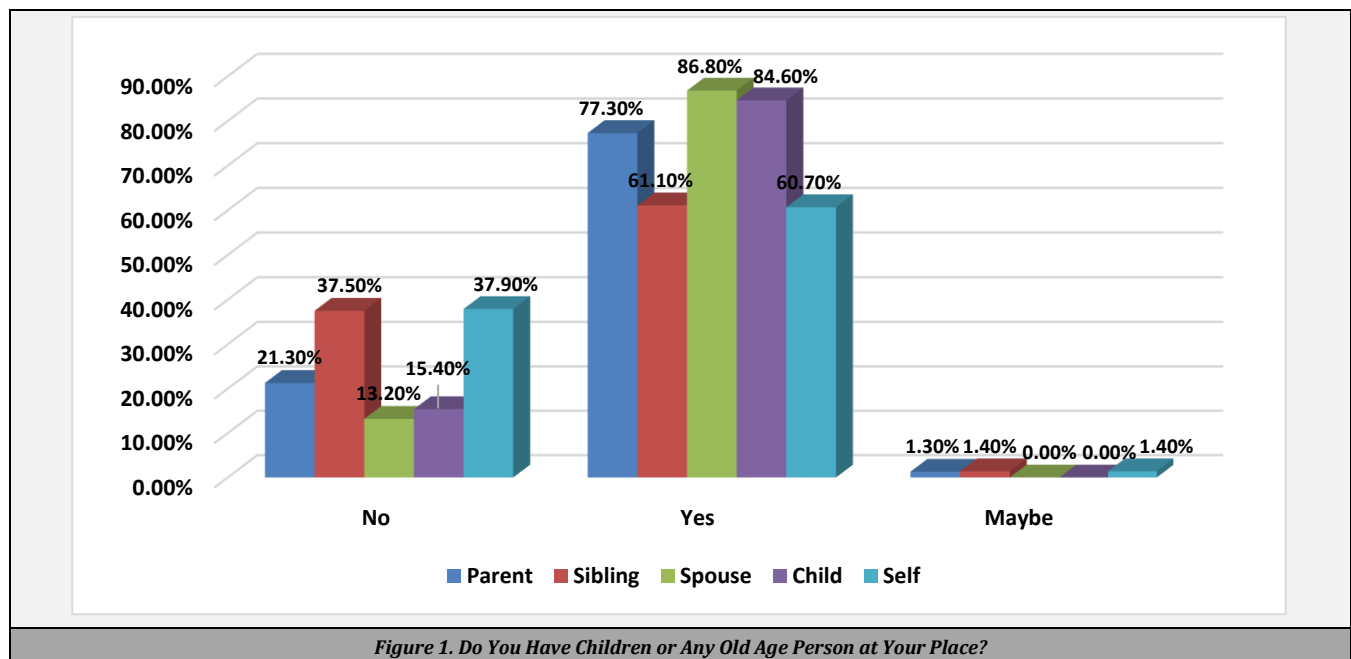


Figure 1. Do You Have Children or Any Old Age Person at Your Place?

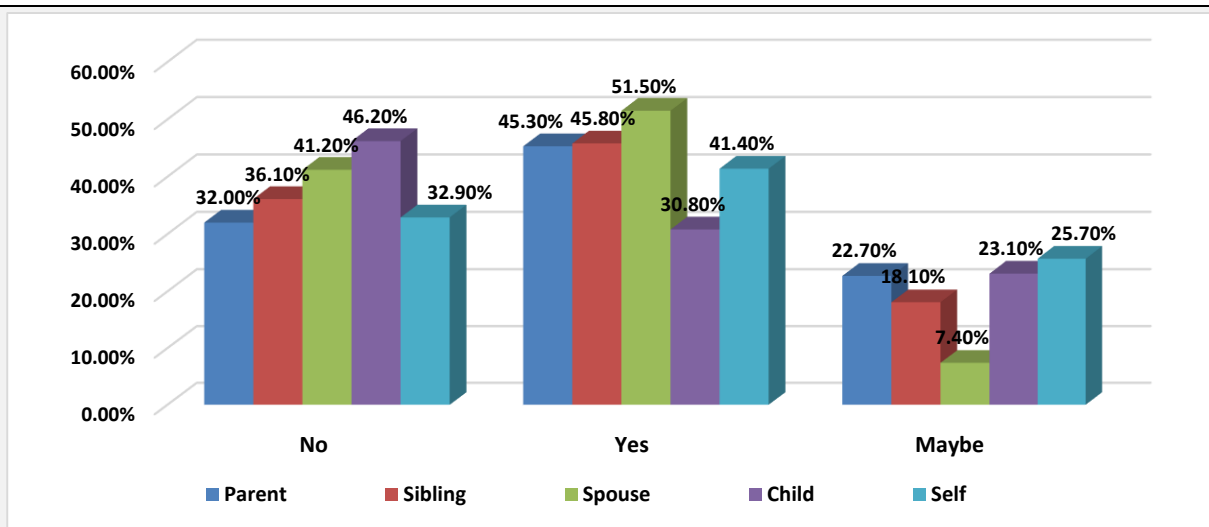


Figure 2. What Was Your or Your Family's Initial Reaction Regarding Treating or Working Closely with Covid-19 Patients?

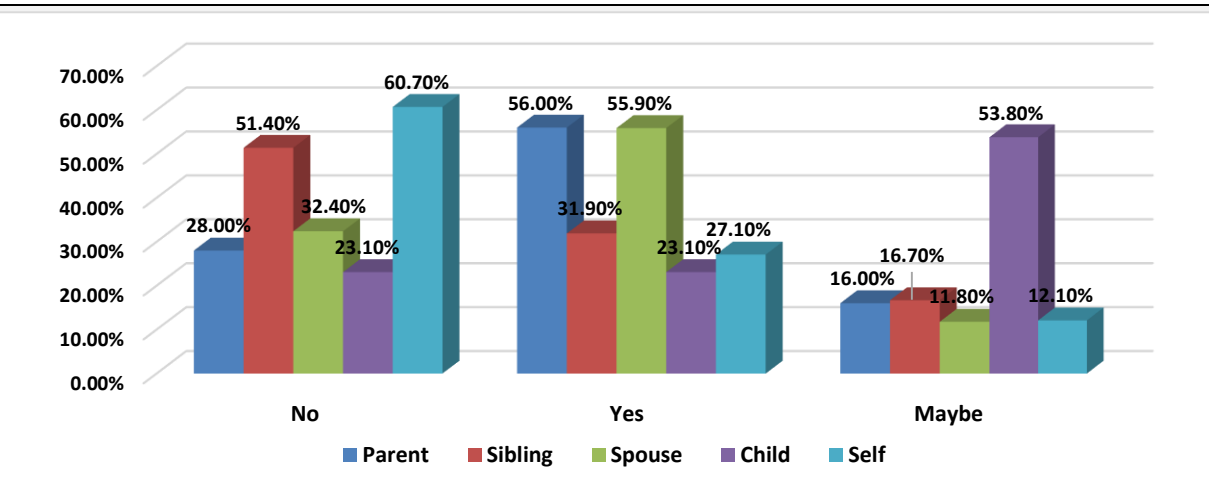


Figure 3. Are You Against the Idea of A Member of Your Family Treating Positive or Suspected Cases?

		No	Yes	Maybe	Total	
Gender	Males	N 80	80	18	178	
	%	44.9 %	44.9 %	10.1 %	100.0 %	
Females	N	64	101	25	190	
	%	33.7 %	53.2 %	13.2 %	100.0 %	
Total		N 144	181	43	368	
		%	39.1 %	49.2 %	11.7 %	100.0 %
P value		0.083, NS				

Table 1. Has the Increasing Number of Cases in India Altered Your Reaction?

Significantly higher proportion of male respondents were found to be against the idea of a member of their family treating positive or suspected cases, as compared to female respondents.

		No	Yes	Maybe	Total	
Parent	N	34	30	11	75	
	%	45.3 %	40.0 %	14.7 %	100.0 %	
Sibling	N	46	17	9	72	
	%	63.9 %	23.6 %	12.5 %	100.0 %	
Spouse	N	31	32	5	68	
	%	45.6 %	47.1 %	7.4 %	100.0 %	
Child	N	8	5	0	13	
	%	61.5 %	38.5 %	0.0 %	100.0 %	
Self	N	101	29	10	140	
	%	72.1 %	20.7 %	7.1 %	100.0 %	
Total		N 220	113	35	368	
		%	59.8 %	30.7 %	9.5 %	100.0 %
P value		< 0.0001, S				

Table 2. Have You or Members of Your Family Stopped the Health Care Professional from Treating Patients?

60.7 % (N = 85) HCWs reported that their families were not against the idea of them treating Covid-19 cases but 56 % parents of HCWs were against it (Figure 3). However, the families did not stop the HCWs from treating the patients, as reported by the HCWs (72 %; N = 101) (Table 2). Significantly higher proportion of parents & spouses were found to be against the idea of a member of their family treating positive or suspected cases, as compared to siblings, children & self. Significantly higher proportion of parents & spouses were reported to have stopped the health care professionals from treating patients, as compared to siblings, children & self.

DISCUSSION

A health care professional is the one who provides care to the ill as doctors or nurses (by direct means) or as technicians, waste handlers or helpers (by indirect means). Approximately, 59 million health care workers are reported world-wide. To identify the HCWs as “the most valuable resource for health” the years 2006 - 2015 have been recognised by the WHO. HCWs are perceived to be unaffected by injury or ailment. They are exposed to constant perilous surroundings,

biological factors such as exposure to pathogenic agents like tuberculosis and human immunodeficiency virus (HIV) or vulnerability to chemical substances like glutaraldehyde and ethylene dioxide. In 2006, a WHO report – “Working together for health” reported a deficit of HCWs in 57 countries, a possible reason for this might be the fear of acquiring infectious diseases.¹⁴ Covid-19, caused by a novel coronavirus is a severely spreading pandemic.

Earlier termed as 2019 - nCoV, it is an enveloped, single stranded RNA virus which was reported as cases of viral pneumonia among individuals of the Wuhan city, China. On January 30, 2020, WHO announced it to be a “public health emergency of international concern” due to its escalated transmission.¹⁵ Previously, two other instances resembling the novel coronavirus have been reported; SARS-CoV and MERS-CoV in 2003 and 2012.¹⁵ SARS was the first new epidemic of the 21st century and had the ability to become the first pandemic of the new millennium. The outbreak of SARS provided the society an opportunity to determine the expertise of the public health sector to recognise and eliminate this and future potential outbreaks.¹⁶ With the MERS outbreak, the threat of a possible spread in a health care setting was established. It was reported to have a mortality rate of 60 % and 20.4 % of cases were reported in HCWs.¹⁷

Several studies have been done to assess the knowledge, attitude and practices (KAP) among the people and HCWs towards Covid-19 but no study is available on the families of health care professionals. To the best of our knowledge, this is by far the maiden study to investigate the attitude and practices of family members of health care professionals dealing with Covid-19 patients. Rahman A and Jahan S, reported a negative attitude towards Covid-19 among Bangladeshi internet users.¹⁸ This correlates to a study by Bener A and Khal A, where a negative psychological impact in terms of fear and anxiety among the general population during the SARS outbreak was reported.¹⁶

In our study, majority of families had a positive attitude and were not against the HCWs in treating Covid-19 patients. This finding is consistent with a recent study by Hanawai M et al. where majority of participants had a positive and optimistic attitude towards Covid-19.¹⁹ A study by Saqlain M et al. on KAP and perceived barriers among HCWs, supported these findings, where the HCWs exhibited a positive attitude towards Covid-19.¹¹ Wahed W, Hetzy E, Ahmed M, Hamed N et al. and Zhou et al. also reported an overall positive attitude towards Covid-19 by the frontline HCWs.^{15,13} Albarrak A et al.²⁰ reported a positive attitude towards MERS among the HCWs and 96.7 % reported using protective measures.²¹ Other studies by Khan M et al. and Asaad A et al. reported a positive attitude towards active participation in infection control programmes.^{17, 21}

Papagiannis D et al. reported a high level of knowledge regarding SARS-CoV-2 and positive attitude and preventive measures. However, it was also reported that only 1 in 4 HCWs washed their hands after touching a patient despite the knowledge of transmission.²² Out of 368 participants, 57 % (N = 210) reported following safety practices in terms of providing a special provision to distance the HCW from other members of the family. This is consistent with the data obtained from Saqlain M et al. where 88.7 % participants reported following good precautionary practices.¹¹ A study by Hanawai M et al. supported these findings, where the

participants followed good and safety practices during the Covid-19 pandemic. Clements J M reported a KAP of 80 % towards Covid-19 among US residents.²³

The findings from this study revealed a positive attitude and safe precautionary practices by majority of the family members of the health care professionals and the increasing number of cases in India had altered their initial response. However, they did not put any restrictions on the HCWs to not provide treatment to the patients. A possible reason for this positive outlook was the good knowledge about Covid-19 among the health care professionals, as reported by Olum R, Chekwech G, Wekha G, Nassozi D and Bongimia F,⁹ which contributed to the families having a good knowledge and safety practices to be followed for Covid-19 and therefore a good and positive outlook towards it.

CONCLUSIONS

The findings from our study reported that after the lockdown and during the Covid-19 upsurge, majority of the participants reported a positive attitude towards a family member working in close contact with a Covid-19 patient. They were also reported to have raised no objections against treating such patients. This positive attitude may be associated with the increased knowledge among HCWs and their family members allowing them to undertake all the necessary precautions. Our findings also suggest that even though more than 50 % of the participants had undertaken various precautions to restrict the spread of the disease, health education programs for the general population should be implemented in order to obtain a barrier to further prevent the spread of the disease and to maintain safety practices. HCWs were also recruited to participate in the present research as they could assess the attitude and safety practices undertaken by their family members. However, this is a potential bias as the attitude of the HCWs towards dealing with infected patients could influence their responses.

Data sharing statement provided by the authors is available with the full text of this article at jemds.com.

Financial or other competing interests: None.

Disclosure forms provided by the authors are available with the full text of this article at jemds.com.

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