

Attitude and concerns of health care workers regarding COVID 19 vaccinations for their children aged less than 16 years: - A cross-sectional survey during the second wave of COVID 19 in India

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ABSTRACT

The negative impact of the COVID-19 pandemic is well established in the literature. Mass vaccination seems to be a promising measure to control community transmission. However, many studies pointed out people are hesitant to accept the vaccine in the Indian setting. The growing human rights concerns, anti-vaccine movement, and skepticism towards the vaccine and its effects may result in the process of vaccination becoming a complicated task. However, no studies were conducted to analyze the parent's perception regarding the COVID-19 vaccine, especially in a health care worker context. This cross-sectional descriptive study was conducted in selected hospital settings in North India. The health care workers (nurses and sanitary attendants) with children of age less than 16 years were recruited based on the convenience sampling

method and a self-administered version of the standard scales was used for the data collection. Most of the subjects were females (n=166; 66.7%) and nursing professionals (n=156; 62.7%). The majority of the subjects expressed a positive attitude regarding vaccination for their children based on the belief in the beneficial effects of vaccination 48.59%. Strikingly, around 46% of the parents have the attitude that their child may have some unforeseen future effects from the covid-19 vaccine 46.58%. This was evident in their views in which many subjects were uncertain to send their children to school 37.75% and expressed that the COVID 19 vaccine was rapidly developed and approved 51.4%. The attitude towards adolescent COVID 19 vaccination during a pandemic is complex and incompletely understood. It is very important to understand the myriad of concerns and negative attitudes to formulate strategies to mitigate the ill effects of the pandemic

Key Words: Attitude; Vaccine; Covid 19; Adolescents

INTRODUCTION

The negative impact of the COVID-19 pandemic is well documented in the literature. Mass vaccination seems to be a promising measure to control community transmission. In India, the COVID-19 vaccine was launched on 16th January 2021 for healthcare and frontline workers [1-3]. However, many studies pointed out people are hesitant to accept the vaccine in the Indian setting. The possible reasons can be perceived stigma related to side effects of the vaccine, lack of awareness regarding the efficacy of the vaccine, etc. Considering the novelty of COVID 19 vaccines, there might be many general concerns among the general public regarding various aspects of mass vaccination [4,5]. Thus, it is imperative to interpret people's attitudes and concerns regarding the COVID-19 vaccine to improve its mass acceptance.

Apart from the adult COVID-19 vaccine trials, research has already started for the development of the COVID-19 vaccine among children aged less than 16 years. Children are a vulnerable population and are susceptible as adults to developing COVID 19 infection. The available studies conducted so far assessed people's opinions regarding the COVID-19 adult vaccine and there is scanty evidence regarding the attitude and concerns among parents regarding COVID 19 vaccination for their children.

Need for the present study

There is a possibility of a third wave of COVID 19 pandemic which requires proper epidemiological planning in terms of extension of mass vaccination including vulnerable populations including children. It is well known that mass vaccination is one of the safest ways to halt the current COVID-19 pandemics outbreak and related crises. The growing human rights concerns, anti-vaccine movement, and skepticism towards the vaccine and its effects may result in the process of vaccination becoming a complicated task. However, no studies were conducted to analyze the parent's concerns regarding the COVID-19 vaccine, especially in a health care worker context. Our study focuses on analyzing Indian parents' perspectives on COVID-19

vaccines for their children of age less than 16 years. Hence the present study evaluated the attitude and concerns of health care workers regarding COVID 19 vaccination for their children of age less than 16 years during the second wave of COVID 19 pandemic in India [6-10].

MATERIALS AND METHODS

This cross-sectional descriptive study was conducted in selected hospital settings of PGIMS, Rohtak- a tertiary care hospital in North India. The period of data collection was from May to June 2021. The study participants were enrolled consecutively during this one-month tenure period based on the sampling criteria. The selected health care workers nursing personnel and sanitary attendants working in PGIMS, Rohtak with children aged less than 16 years were included. Parents who refused to give consent and participate in the study were excluded.

Sample size calculation

Considering a pilot run and results of a previous study (20.7% hesitancy among COVID 19 adult vaccine, a random sample of 246 was estimated.

Data collection

The study participants were determined by preparing a sampling frame (list of the study population) after requesting from the concerned authorities. The potential subjects were recruited based on the convenience and availability of subjects during the data collection period. Parents with children of age less than 16 years were invited to participate in the study. Informed consent was obtained and a participant information sheet was provided. The participants were asked to fill out the standard form and the investigators guided the parents in filling the forms in case of any clarifications.

Study instruments

The attitude and concerns regarding COVID-19 vaccination were evaluated by using a questionnaire validated in the Indian population. The

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cronbach's alpha value of the questionnaire was 0.86 and the developer was permitted to use this scale for the present study. The 10-item Vaccine Hesitancy Scale (VHS) developed by the WHO SAGE Working Group was further administered. The scale items were assessed on a 5-point Likert scale, from "strongly disagree" to "strongly agree." All items had acceptable internal reliability (standardized cronbach's a= 0.73, N= 305) and the scale is available in the public domain.⁸

Statistical analysis

All data collected will be analyzed using SPSS 15.0 version. All variables were expressed and analyzed using descriptive and

inferential statistics.

RESULTS

Most of the subjects were females (n=166; 66.7%) and nursing professionals (n=156; 62.7%). Half of them were having work experience of 6-10 years (n=125; 50.2%) in their current employment. The majority of participants were in the age group of 31-40 years (n=162; 65.1%). A major proportion of the subjects were married (n=241; 96.8%) and belonged to Hindu religion (n=236; 94.8%). More than half of the participants belonged to the joint family system (n=142; 57.1%) and had two children (n=151; 60.6%). Concerning the COVID 19 infection status, approximately 85% of them had RTPCR positive status and 80% of them were vaccinated.

Attitudes and concerns

Nearly half of the health workers believed that the COVID-19 vaccine will be useful in protecting their children from the COVID-19 infection 55.42%. Further, many expressed a positive attitude regarding vaccination for their children based on the belief in the beneficial effects of vaccination 48.59%. Strikingly, around 46% of the parents have the attitude that their child may have some unforeseen future effects from the covid-19 vaccine 46.58%. This was evident in their views in which many subjects were uncertain to send their children to school 37.7% expressed that the COVID 19 vaccine was rapidly developed and approved by 51.4%.

**TABLE 1
Characteristics of the study participants**

Sample characteristics	Frequency(f)	Percentage (%)
Gender		
a) Male	83	33.3
b) Female	166	66.7
Age (years)		
a) 20-30	81	32.5
b) 31-40	162	65.1
c) 41-50	06	2.4
Marital status		
a) Married	241	96.8
b) Divorced	05	2.0
c) Single parent	03	1.2
Religion		
a) Hindu	236	94.8
b) Muslim	05	2.0
c) Others	08	3.2
Occupation		
a) Nurses	156	62.7
b) Sanitary attendants	93	37.3
Work experience in the current job		
a) 1- 5 years	105	42.2
b) 6- 10 years	125	50.2
c) > 10years	19	7.6
Type of family		
a) Joint family	142	57.0
b) Nuclear family	107	43.0
Number of children		
a) 1	73	29.3
b) 2	151	60.6
c) 3	25	10
Covid 19 status (parents)		
a) Rtpcr positive	214	85.9
b) Rtpcr negative	35	14.1
Covid 19 vaccination status		
a. Vaccinated	202	81.1
b. Not vaccinated	47	18.9

Table 1 describes the socio-demographic profile of the study subjects.

The majority of the parents have the opinion that childhood vaccines are important for their child's health 57.4%. At the same more than half of them also expressed that new vaccines carry more risks than older vaccines 42% and were concerned about the side effects of vaccines 32.5%. A major proportion of the parents relied on vaccine information from doctors and vaccination programs 50.2%. In short, the study subjects as a whole believed in the efficacy of vaccination, but some concerns were expressed regarding the COVID 19 vaccines as it was rapidly developed and approved due to the existing demands associated with the pandemic (Table 2 and 3).

**TABLE 2
The attitude of health care workers regarding COVID 19 vaccinations for their children aging less than 16 years**

	Strongly disagree (n)	Disagree (n)	Neither agree nor disagree (n)	Agree (n)	Strongly agree (n)
I think there is no harm in taking COVID-19 vaccines	36	16	59	118	20
I believe the COVID-19 vaccine will be useful in protecting my children from the COVID-19 infection	26	19	85	89	30
I feel the benefits of taking covid-19 vaccine out weight the risks	29	33	65	87	34
I believe that taking the covid-19 vaccine is a social responsibility	20	34	63	95	37
There is sufficient data regarding the safety and efficacy released by the government	20	37	58	90	43
Many people are taking the covid-19 vaccine	11	40	52	87	59
I think it will help in eradicating covid-19 infection	16	26	73	80	54
My child may have some unforeseen future effects from the covid-19 vaccine.	15	42	76	78	38
After getting the vaccine, I feel confident to send my children to school.	16	32	94	69	38

**TABLE 3
Concerns of health care workers regarding COVID 19 vaccinations for their children aging less than 16 years N= 249**

Vaccine hesitancy Scale Items	Strongly disagree (n)	Disagree (n)	Neither agree nor disagree (n)	Agree (n)	Strongly agree (n)
Childhood vaccines are not important for my child's health	143	27	33	35	11
Childhood vaccines are not affected	127	49	42	24	6
Having my child vaccinated is not important for the health of others	121	52	46	22	8

Not all childhood vaccines offered by the government are beneficial	108	62	48	21	10
New vaccines carry more risks than older vaccines.	106	67	48	26	02
Information from the vaccine program is not trustworthy	125	44	43	29	08
Vaccination is not a good way to protect my child from disease.	123	54	37	25	10
I don't want my doctor recommends a vaccine for my child.	113	67	35	23	11
I am concerned about the side effects of vaccines	81	47	45	49	27
A most child needs a vaccine for a disease that is not common anymore.	45	64	53	52	35
Children should get fewer vaccines at the same time.	54	57	64	60	24

DISCUSSION

The present study explored the attitude and concerns of health care workers regarding COVID 19 vaccinations for their children aged less than 16 years. We recruited the study participants by using a convenient sampling method and the self-administered version of the questionnaire was distributed. Although most of the subjects were having a positive attitude towards COVID 19 vaccination for their children, many of them expressed concerns regarding the uncertainty and insecurity of this novel vaccine for their children. This might be due to various factors. The rampant and unpredictable spreading of the information related to the global pandemic has been causing negative mental health impacts such as panic episodes, anxiety, and depression due to the overloaded information obtained via mass media and social networking sites. Apart from physical suffering, the consequences of the so-called “coronaphobia” on the mental health and well-being of people at various developmental stages can hamper social stability. The findings of one of the online surveys revealed that younger age, female gender, unmarried and rural residential status were significantly associated with increased psychological problems in India. Further, it is also reported that mental health outcomes during COVID 19 were closely associated with the presence of co-morbid illness and physical activeness during the lockdown period [11,12].

To achieve maximum vaccination rates, healthcare facilities, besides providing vaccines, should initiate effective programs, including educating HCP on the benefits of vaccination and the dangers of non-vaccination. The understanding of specific concerns, attitudes, and non-acceptance regarding COVID 19 vaccination for children will give an insight into solving some of the issues while implementing mass vaccination in this setting.

However, there are some more limitations to be considered while evaluating the study results. First, is the inherent design of the study like the convenient sampling technique being only restricted to selected

people such as nurses and sanitary attendants? Second, the study was conducted during the second wave of COVID 19 in India, which can have a psychological impact and can be a confounder to under or over-reporting attitudes and concerns towards vaccination. Third, though we conducted a face-face survey, no measure was undertaken to identify the RT-PCR status of the study population that might influence the findings of the study. Despite the limitations, this study provides some information regarding the attitude towards adolescent COVID 19 vaccination among the Indian health care worker community. Moreover, the Hindi questionnaire used has been validated in the Indian population earlier.

CONCLUSION

This study evaluated the gap of knowledge on COVID-19 vaccination for children of age less than 16 years among parents employed in the health care setting of India by utilizing valid scales. Although most of the subjects were having a positive attitude towards COVID 19 vaccination for their children, many of them expressed concerns regarding the uncertainty and insecurity of this novel vaccine for their children.

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