

# Fear of COVID-19 Immunization among the Rural Population of Haryana, India

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Received: 10 October 2021;

Accepted: 01 January 2022.

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Published by : OZZIE PUBLISHERS



## Abstract

**Background:** Coronavirus disease 2019 (COVID-19) is a contagious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first known case was identified in Wuhan, China, in December 2019. World Health Organization (WHO) in 2019 identified and declared Covid-19 as pandemic. During the course of disease, more than 27 million people are infected, approximately 800,000 people died and cases were found in more than 200 countries. During this time, the only solution to control the spread of the infection was found to be the effective COVID-19 Vaccination. But, over the time it was found that few group of rural people are not in the position to intake the vaccination and becoming a hurdle in course of complete immunization coverage. In this study these fears and groups in which this type of fear is most are studied and few recommendations are made to address these issue and complete the immunization. **Aim, Objective and Methodology:** The aim of the study was to determine the fear of COVID-19 immunization among in rural population. For this purpose, a sample of 111 participants were taken and a well-structured pre-tested questionnaire was floated among them via Google form to collect the data in a randomly selected group of population including males and females. Later on this collected data was analyzed by using Microsoft excel and results were obtained. For the research purpose this study has been granted the ethical clearance from the district ethical committee. **Results:** The results were obtained from the given set of data and showed the relationship between fear and the gender, religion, type of vaccine and type of fear.

**Key words:** Fear, COVID-19, Vaccination, Rural, injection, Population.

## INTRODUCTION

The Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) or COVID-19, first case reported in China in December 2019. More than 27 millions of people infected, 800,000 people died, cases found in more than 200 countries.<sup>[1]</sup> World Health Organization (WHO) in 2019 identified ten threats to global health which includes vaccine hesitancy, severe acute respiratory syndromes.<sup>[2]</sup> COVID-19 is the new challenge or threat that we are all facing today which already had a huge effect all over the world; travel restrictions, preventive measures; compulsory face masks or coverings, quarantine implementation to control spreading of COVID-19 at a massive rate. Preventive measures are not alone adequate to stop COVID-19 from spreading in masses.<sup>[3,4]</sup> For this, vaccination is one of the most effective prevention measures which helped in eradicating so many infectious diseases like rubella, measles, diphtheria, etc in the past<sup>[5-8]</sup> likewise for COVID-19. The development of COVID-19 vaccines has shown rapid progress, different vaccines showed good results against COVID-19.<sup>[5,9]</sup> Clinical trials demonstrated positive results which indicate that the COVID-19 vaccine is safe and effective. But in terms of acceptance of the vaccine it is determined by uptake rates of the population.<sup>[10]</sup> In the context of control of the COVID-19 pandemic, the emergence of fear of COVID-19 immunization can be seen among people.<sup>[11]</sup> The WHO strategic advisory group of experts on immunization has given the definition of vaccine hesitancy "it is delay in acceptance or reluctance of vaccine, it varies across time, place, and vaccine.

So, it is complex and context specific.<sup>[12]</sup> Several literature reviews already have been done on this issue.<sup>[13-16]</sup> Health anxiety resulted in high refusal rates of vaccination which has been linked to fear of high threats of death from vaccine preventable diseases. Several studies found that fear as the response to pandemic situations.<sup>[13-16]</sup> COVID-19 vaccines are now available in several countries, including India. Therefore, in this situation, it is noteworthy that this is the first study aimed to assess the fear of COVID-19 immunization across rural section of Haryana state. Similarly, our study also aimed to assess the fear towards COVID-19 vaccination but in rural set up, for this we used a well structured pre-tested questionnaire to collect the data in a randomly selected group of population including males and females. This questionnaire consists of fifteen questions divided into three parts including participation consent, demographic details and COVID-19 Fear related questions.

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DOI :  
[10.5530/amdhs.2021.4.9](https://doi.org/10.5530/amdhs.2021.4.9)

**Review of literature**

Various studies have been visualized to give support and embark authenticity to this study. During this review it was found that, in several studies fears can be seen in individual behavior and a response to pandemic situation<sup>[13-16]</sup> A survey research conducted on 67 countries found that France is the leader of vaccine hesitancy.<sup>[17]</sup> Another research found that vaccine fear is associated with lower perception of risk from virus, lack of awareness of collective benefits of immunization, concern about efficacy of vaccination, anxiety about potential side effects.<sup>[18,19]</sup> Fears about injection in the short term might prevent the long-term benefits of vaccination.

Among, children, adolescents and adults, blood-injection-injury fears have a subtype fear of which means persistent massive fear of blood, needles or internal medical procedures, resulting in reluctance or acceptance with anxiety.<sup>[20-22]</sup> Included assessment of blood-injection-injury fears to measure the degree to which they may be a factor in reluctance about COVID-19 vaccination, fear of injection is more in women and in younger age groups which is currently possible by injection.<sup>[18,19]</sup> One study found that over 20% parents and over 60% children reported needles fear.<sup>[23]</sup>

Recently in a survey it was observed that 11.8% of those who were reluctant about COVID-19 vaccination and had a dislike of needles and injections and 43.8% had fear of dangerous side effects of the vaccine.<sup>[24]</sup> In another study conducted in the same year in US on 9000 older adults, 1.7% had fear of needles because of COVID-19 vaccine.<sup>[25]</sup> Several studies results had shown, COVID-19 vaccine does not cause infertility in women's and False information on side effects of COVID-19 vaccine were causing fear and decline in vaccination, the prevalence of intentional vaccination delay was 37, common reasons for delaying vaccinations were COVID-19 infection and prevention of exposure to COVID-19 cases and fears were identified as the primary reason for immunization non-compliance for 7% parents and 8% children.<sup>[23,26,27]</sup>

**METHODOLOGY**

- Aim:** To assess the fear associated with COVID-19 immunization among rural groups of Haryana.
- Study area:** Village Bohar, Rohtak Haryana.
- Sample size:** 111
- Study design:** A cross-sectional study for randomly selected population.
- Method:** A well-structured pre-tested questionnaire was used via Google form to collect the data in a randomly selected group of population including males and females.
- Results:** The obtained results were compiled by using the Microsoft excel.
- Ethical clearance:** The participants involved in the study were mandate to sign a participatory consent and another ethical clearance was taken from the ethical committee of the selected study area. (annexure 1)
- Exclusion and Inclusion criterion:** The participants unwilling to participate in the study were excluded and those willing were considered in the study.

**Table 1: Fear among males and females of rural population.**

Sr. no	Result	Observation	Associated Data Table
1	COVID-19 Vaccination fear among males and females.	From the obtained data it was interpreted that out of total 111 participants including males and females of 12-84 age group 70 % of males and 30% females have fear of COVID-19 immunization.	Table 1, Figure 1
2	Different COVID-19 Vaccination fear among various religious communities	With the obtained result's it was found that 43% Hindu's, 1.75% Muslim, 9.70% Sikh, 1.75% other religion's reported no specific vaccine behind the fear. In comparison to other religion's Hindu's have more fear, 0.80% have fear for sputnik, 4.30% for COVAXIN, 24.50% for COVISHIELD.	Table 2, Figure 2
3	Fear from type of vaccine	33.30% females and 23% males have no specific vaccine behind the fear of immunization .25% males and 10.50% females have fear for COVISHIELD vaccine, 2.7% males and 3.50 % females have fear for covaxin,0.90% males and 0.10 % females have fear for sputnik vaccine.	Table 3, Figure 3
4	Type of fear from Vaccine	38% males and 26% females shows there is no specific reason behind the fear of vaccination. 11% of female samples and 6.10% male samples have fear of reinfection after vaccination.7% females and 3 % males have fear of known side effects. Fear of reinfection is almost same in males and females that is approximately 3 %.	Table 4, Figure 4

Gender wise fear	Percentage
Male	8%
Female	3.50%

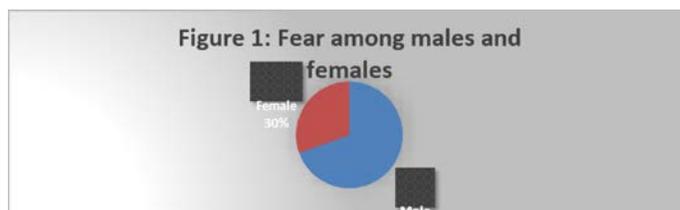


Figure 1: Fear among males and females of rural population.

**Table 2: Showing religion wise fear for different vaccines.**

**Different COVID-19 Vaccination fear among various religious communities**

	Sputnik	Covaxin	Covishield	Does not differ
Hindu	0.80%	4.30%	24.50%	43%
Muslim	0%	0%	0%	1.75%
Sikh	0%	0.80%	7.01%	9.70%
Other	0%	0%	0.80%	1.75%

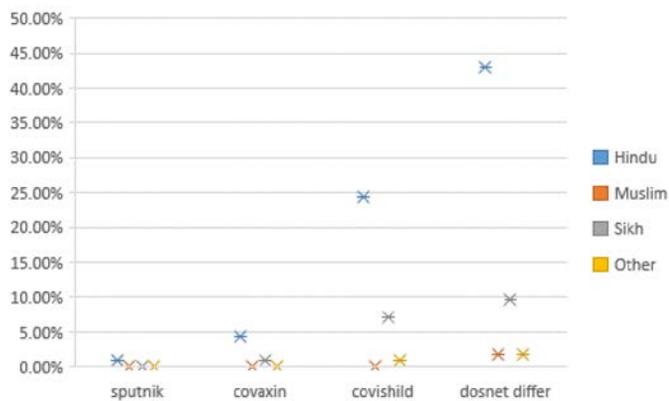


Figure 2: Different COVID-19 Vaccination fear among various religious communities.

**Table 3: Fear from type of vaccine.**

Fear from type of vaccine				
	Sputnik	Covaxin	Covishield	Does not differ
Male	0.90%	2.70%	25%	23%
Female	0.10%	3.50%	10.50%	33.30%

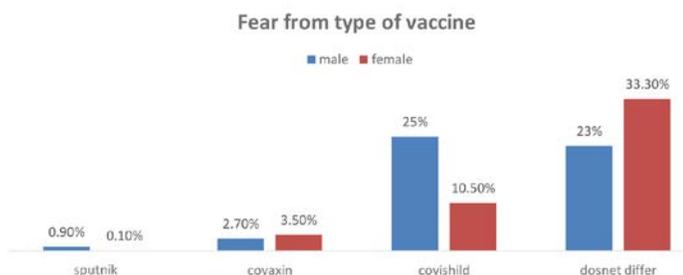


Figure 3: Fear from type of vaccine.

**Table 4: Type of fear from Vaccine.**

Reason of fear among males and female	Male	Female
Fear of vaccination needle	3.50%	3%
Fear of reinfection after vaccination	6.10%	11%
Known side effect of vaccinations	3.50%	7%
Others	0%	0%
None	38%	26%

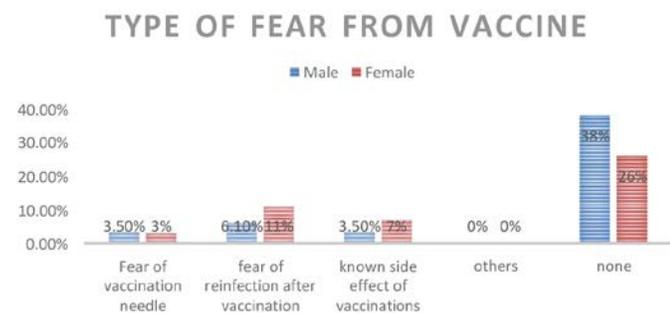


Figure 4: Type of fear from Vaccine.

## OBSERVATIONS AND RESULTS DISCUSSION

World Health Organization (WHO) in 2019 identified COVID-19 as pandemic. In the context of control of the COVID-19 pandemic, the emergence of fear of COVID-19 immunization can be seen among people.<sup>[1]</sup> A research found that vaccine fear is associated with lower perception of risk from virus, lack of awareness of collective benefits of immunization, concern about efficacy of vaccination, anxiety about potential side effects.<sup>[18,19]</sup> Similar studies found that, fear of injection is more in women and in younger age groups, 43.8% had fear of dangerous side effects of the vaccine.<sup>[18,19,23,24]</sup> Several studies results had shown the prevalence of intentional vaccination delay was 37%, common reasons for delaying vaccinations were COVID-19 infection and prevention of exposure to COVID-19 cases and fears were identified as the primary reason for immunization non-compliance for 7% parents and 8% children.<sup>[23,27]</sup>

Apart from these studies, the present study aimed to assess the associated fear from COVID-19 immunization among population of rural section of Haryana. For this a well-structured pre-tested questionnaire was used via Google form to collect the data in a randomly selected group of population including males and females after taking their consent and the ethical clearance from the governing body and data was collected. After the collection of all the data, it was compiled and results were obtained. These results demonstrate that males have more fear from vaccination than females, people belong to Hindu community have more fear, there is no specific vaccine for fear but, if any vaccine is for the fear than the fear include the chance of reinfection and the potent side effects of the vaccine.

## Key recommendations

1. It is recommended that COVID-19 vaccination should find a room in the National Immunization Programs.
2. Government should formulate a policy for mandatory vaccination along with some “show and do” technique as propaganda to overcome the fear for vaccination among people.
3. Government should follow the psychological aspects to reach out to the minds of the community to overcome the fear.
4. Panel of psychologist should sit together and formulate policies to overcome the fear.
5. Government should work on awareness programs and campaigns to address these prominent fears.
6. To address these fears, regulators, policymakers, education, the Ministry of Health, and media professionals should cooperate, and only data that has been thoroughly reviewed should be made accessible to the people.

## CONCLUSION

In the present study, we conclude that fear of COVID-19 vaccines is widespread among rural Haryana. Among different genders, males showed more fear as compared to the females, as they believe that the chance of reinfection is more as well as there are marked side effects of the vaccination. In terms of the religion Hindu group showed maximum level of fear which needs to be addressed in forthcoming studies. While, Considering the association of fears among genders due to the type of COVID-19 vaccine,

majority of the participants does not show any specific vaccine of fear but on the second lead COVISHIELD was a vaccine of fear which may be due to the fact that maximum immunization in India belongs to COVISHIELD. While considering the type of the fear from the vaccine majority have no specific fear but some possess the fear which belong to the fear of getting reinfection and the side effects of the vaccine.

## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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Cite this article as: Gulia N, Shyam R. Fear of COVID-19 Immunization among the Rural population of Haryana, India. *Adv. Med. Dental Health Sci.* 2021;4(4):45-8.