

# Perception of Healthcare providers towards Covishield and Covaxin vaccines in a Tertiary care Teaching hospital

Dr Bomma Nikhila<sup>1</sup>, Dr B Prashanth<sup>2</sup>,

1 – Junior resident, Department of Hospital Administration,

2 – Senior resident, Department of Surgical Gastroenterology

Nizam’s Institute of Medical Sciences

Corresponding Author: Dr Bomma Nikhila

Department of Hospital Administration

Nizam’s Institute of Medical Sciences

Hyderabad

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## I. Introduction

Vaccination against COVID-19 commenced in India on 16 January 2021, prioritising health care workers which included medical students. A year has passed since the first case of novel coronavirus infections was detected in China’s Wuhan province. During the initial period of the disease, the efforts were concentrated on preventing and slowing down transmission<sup>1–6</sup>. Global analysis of herd immunity in COVID-19 has shown the urgent need for efficacious COVID-19 vaccines<sup>7</sup>. Currently, the vaccine development efforts have started to come to fruition as some of the leading vaccine candidates have shown positive results in the prevention of clinical disease<sup>8–12</sup>. The primary outcome measure was to identify the most frequently experienced side effects from the vaccines Covishield and Covaxin, based on type of vaccine, first or second dose, age, gender, race and occupation. The secondary outcome measure was to document the total number of work shifts missed after receiving the vaccine. Of interest to health care risk managers, the survey identified the most common side effects and resulting missed time from work broken down by type of vaccine and first or second dose. This information will be helpful for those institutions who have not yet vaccinated a majority of their work force, employees who still need their second dose, and for strategic scheduling of employees.

	Covaxin	Covishield
Intervention/comparator agent	Whole-Virion Inactivated SARS-CoV-2 vaccine (BBV152) with three formulations, BBV152A, BBV152B, and BBV152C. Dose: 0.5 ml, Route of administration: Intramuscular injection, Frequency: two doses at day 0 and day 14	Intervention - Covishield (SII-ChAdOx1 nCoV-19) -administered as 2 dose schedules on Days 1 and 29 as 0.5 ml dose intramuscularly Comparator Agent Oxford/AZ-ChAdOx1 nCoV-19 vaccine. Oxford/ AZ-ChAdOx1 nCoV-19 vaccine was administered as 2 dose schedules on days 1 and 29 as 0.5 ml dose.
Trial type	Interventional	Interventional
Study design	Randomized, Parallel Group, Active Controlled Trial	Randomized, Parallel Group Trial
Health condition/problem studied	Active immunization for the prevention of SARS-CoV- 2 Infection in healthy human volunteers	Healthy human volunteers
Blinding/masking	Participant, Investigator, and Outcome Assessor Blinded	Participant, Investigator, Outcome Assessor, and Data-entry Operator Blinded
Phase of trial	Phase 1/Phase 2	Phase 2/Phase 3.
Primary sponsor	Bharat Biotech International Limited	Serum Institute of India Private Limited

## II. Objectives

1. To study COVID-19 vaccination side effects among hospital staff who received the covaxin or covishield COVID-19 vaccines
2. To study any lost work time of hospital staff who received the covaxin or covishield COVID-19 vaccines
3. To Compare variables of age, gender, race, occupation, post vaccine symptoms, and missed work time based on type of vaccine received.
4. To Compare any similarities or differences with adverse events between first and second doses of vaccines for each vaccine type.
5. Establish self-perceived rating for how COVID-19 vaccine side effects affected normal daily functional ability using a Likert Scale.

## III. Materials And Methods

**Study Setting:** The study was undertaken in Nizam’s Institute of medical sciences – a tertiary care teaching hospital in Hyderabad.

**Study Design:** This is an observational prospective exploratory study.

**Study Period:** Jan 2021 to March 2021

**Sources of Data** A pre-tested structured self-administered questionnaire was used to collect data from Health care providers including Doctors, Nurses, paramedics and housekeeping staff Prior to attempting the questionnaire, the study subjects were explained the purpose of the study. Questionnaires were checked for completeness and consistency.

The questionnaire consisted of three parts. The first part assessed HCWs’ general information and demographic variables (Table:1).

The second part consists of questions related to Missed work time, by vaccine type and dose—n (%) (Table:2)

The third part consists of questions related to Local and systemic side effects by vaccine type and dose—n (%) (Table:3).

## STATISTICAL METHODS

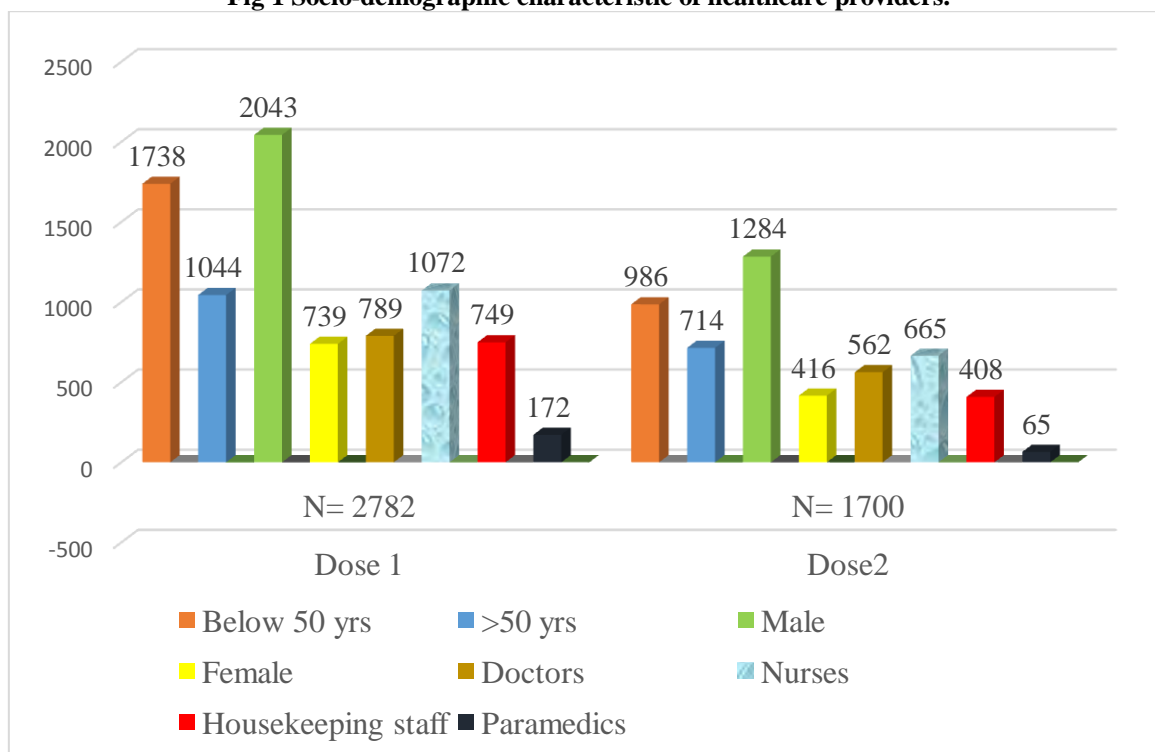
Subject characteristics, missed work time, and side effect data are presented as frequency counts and percentages by vaccine dose (first, second) and by vaccine type within dose (Covaxin or covishield).

## IV. Results

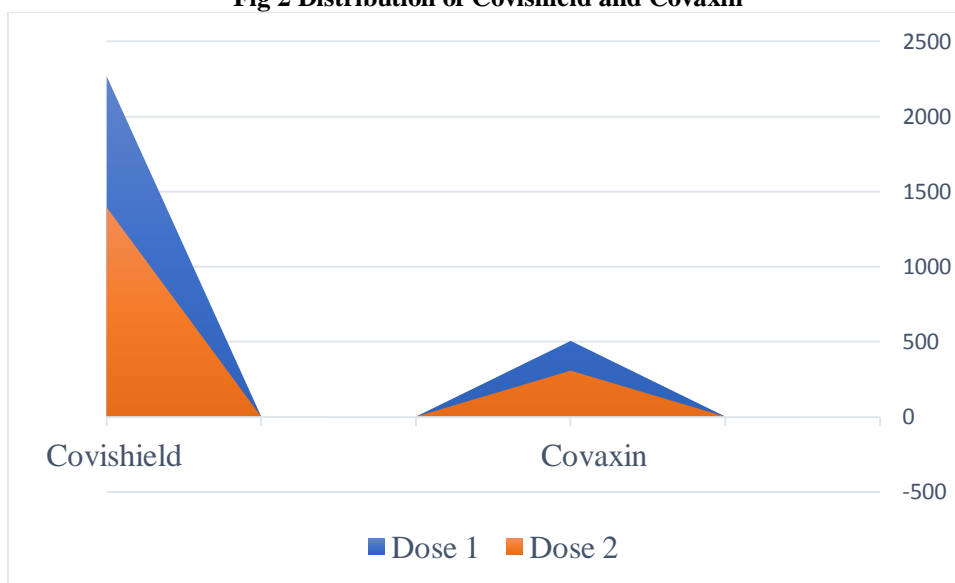
**Table 1: Socio-demographic characteristic of healthcare providers.**

Sl.no	Variables	Category	Dose 1 N= 2782	Dose2 N= 1700
1	Age	Below 50 yrs	1738 (62.5%)	986 (58%)
		>50 yrs	1044 (37.5%)	714 (42%)
2	Sex	Male	2043 (73.4%)	1284 (75.5%)
		Female	739 (26.5%)	416 (24.5%)
3	Profession	Doctors	789 (28.3%)	562 (33%)
		Nurses	1072 (38.5%)	665 (39.1%)
		Housekeeping staff	749 (26.9%)	408 (24%)
		Paramedics	172 (6.2%)	65 (3.8%)
4	History of allergic reaction		78 (2.8%)	42 (2.4%)
5	Covishield		2268 (81.5%)	1394 (82%)
6	Covaxin		504 (18.1%)	306 (18%)

**Fig 1 Socio-demographic characteristic of healthcare providers.**



**Fig 2 Distribution of Covishield and Covaxin**



**Table:2 Missed work time, by vaccine type and dose—n (%)**

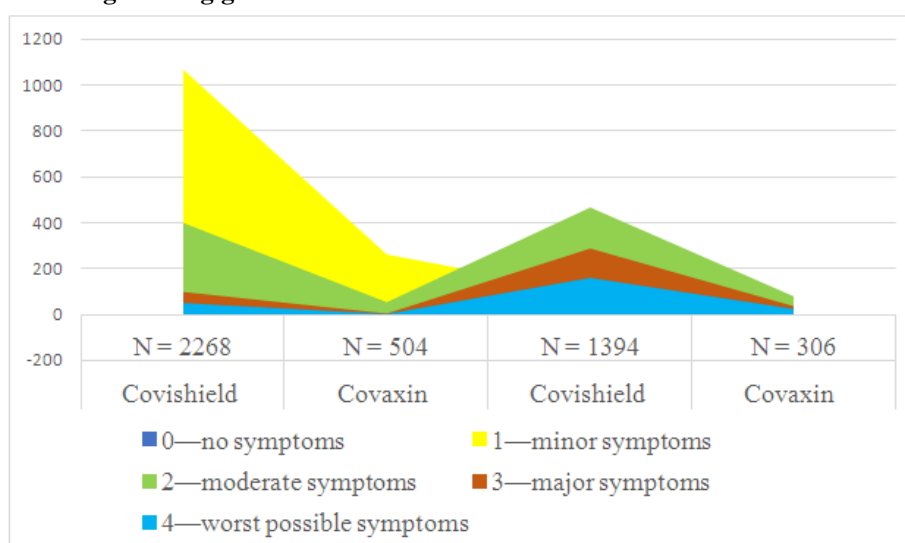
S no	Questions	Dose 1		Dose 2	
		Covishield N =2268	Covaxin N = 504	Covishield N =1394	Covaxin N = 306
1.	Within 7 days of receiving vaccine, did you miss any work time because of vaccine side effects?				
	Yes	80 (3.5%)	4 (0.8%)	336 (24.1%)	28 (9.1%)
	No	2188 (96.4%)	500 (99.2%)	1058 (75.9%)	278 (90.8%)
2.	If yes, how many shifts of work did you miss?				
	0	0	2 (0.4%)	5 (0.3%)	2 (0.6%)
	1	58 (2.5%)	2 (0.4%)	272 (19.5%)	20 (6.5%)
	2	16 (0.7%)	0	53 (3.8%)	4 (1.3%)
	More than 2 shifts	6 (0.26%)	0	6 (0.4%)	2 (0.6%)
3.	If no, did you consider calling in based on symptoms but came to work anyways?				
	Yes	162 (7.1%)	22 (4.3%)	264 (18.9%)	36 (11.7%)

	No	2026 (89.3%)	488 (96.8%)	794 (56.9%)	242 (79%)
4.	Total number of subjects who missed work or considered calling in	242 (10.6%)	26 (5.1%)	600 (43%)	64 (20.9%)

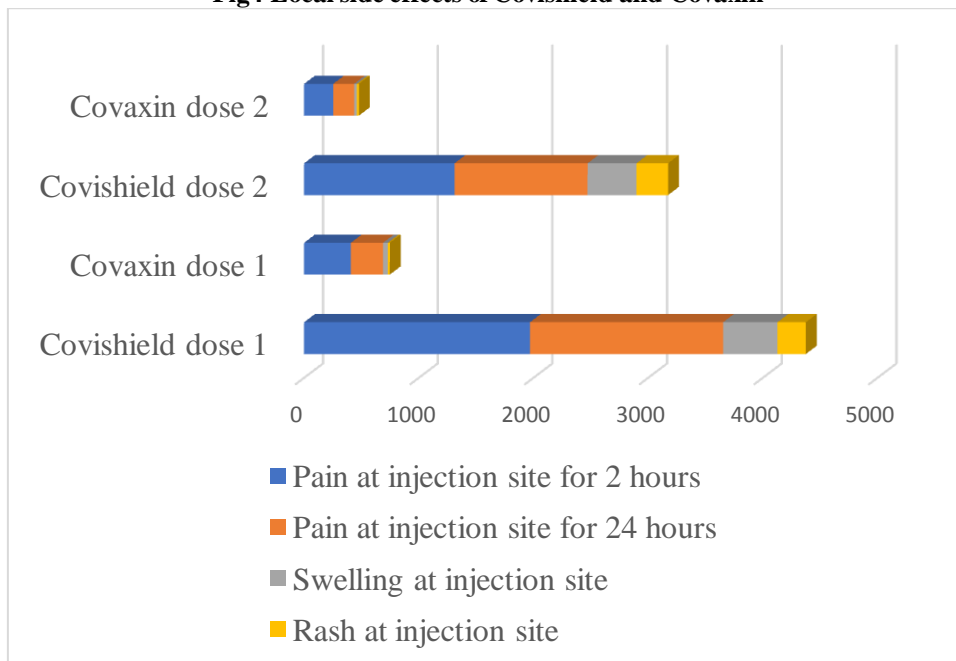
**Table:3 Local and systemic side effects by vaccine type and dose—n (%)**

	Dose 1		Dose 2	
	Covishield N = 2268	Covaxin N = 504	Covishield N = 1394	Covaxin N = 306
<b>Rating of worst you felt in the week after the vaccine</b>				
0—no symptoms, no change in daily activity level	650 (28.6%)	192 (38%)	94 (6.7%)	68 (22.2%)
1—minor symptoms, able to complete routing tasks without difficulty	1068 (47%)	262 (51.9%)	94 (6.7%)	68 (22.2%)
2—moderate symptoms, constantly aware of discomfort/symptom	402 (17.7%)	54 (10.7%)	470 (33.7%)	80 (26.1%)
3—major symptoms, difficulty completing routine tasks	98 (4.3%)	4 (0.8%)	286 (20.5%)	36 (11.7%)
4—worst possible symptoms, unable to engage in daily activities, may be sleeping more than normal	50 (2.2%)	2 (0.4%)	160 (11.5%)	24 (7.8%)
<b>Localized side effects</b>				
Pain at injection site lasting longer than 2 hours	1970 (86.8%)	408 (80.9%)	1312 (94.1%)	254 (83%)
Pain at injection site lasting longer than 24 hours	1684 (74.2%)	280 (55.5%)	1160 (83.2%)	182 (59.4%)
Swelling at injection site or surrounding area	474 (20.9%)	42 (8.3%)	426 (30.5%)	24 (7.8%)
Redness or rash at injection site or surrounding area	248 (10.9%)	18 (3.5%)	276 (19.8%)	18 (5.8%)
<b>Systemic side effects</b>				
Fever	680 (29.9%)	126 (25%)	378 (27.1%)	81 (26.4%)
Fatigue	786 (34.6%)	98 (19.4%)	415 (29.7%)	64 (20.9%)
Headache	364 (16%)	89 (17.6%)	279 (20%)	55 (17.9%)
Diarrhoea	25 (1.1%)	12 (5.8%)	9 (0.6%)	4 (1.3%)
Difficulty breathing, shortness of breath	34 (1.4%)	16 (3.1%)	21 (1.5%)	9 (2.9%)
Swelling to your lips, tongue, face or throat	4 (0.2%)	2 (0.3%)	1 (0.07%)	0
Itching anywhere on your body	27 (1.1%)	15 (2.9%)	19 (1.3%)	7 (2.2%)
Cough	76 (3.3%)	21 (4.1%)	62 (4.4%)	12 (3.9%)
Body or muscle aches	135 (5.9%)	45 (8.9%)	129 (9.2%)	23 (7.5%)
Pink eye	1 (0.04%)	0	0	0
Sore throat	52 (2.2%)	31 (6.1%)	47 (3.3%)	18 (5.8%)
Trouble waking up, very drowsy	75 (3.3%)	47 (9.3%)	31 (2.2%)	31 (10.1%)
Vomiting	9 (0.3%)	2 (0.3%)	3 (0.2%)	2 (0.6%)

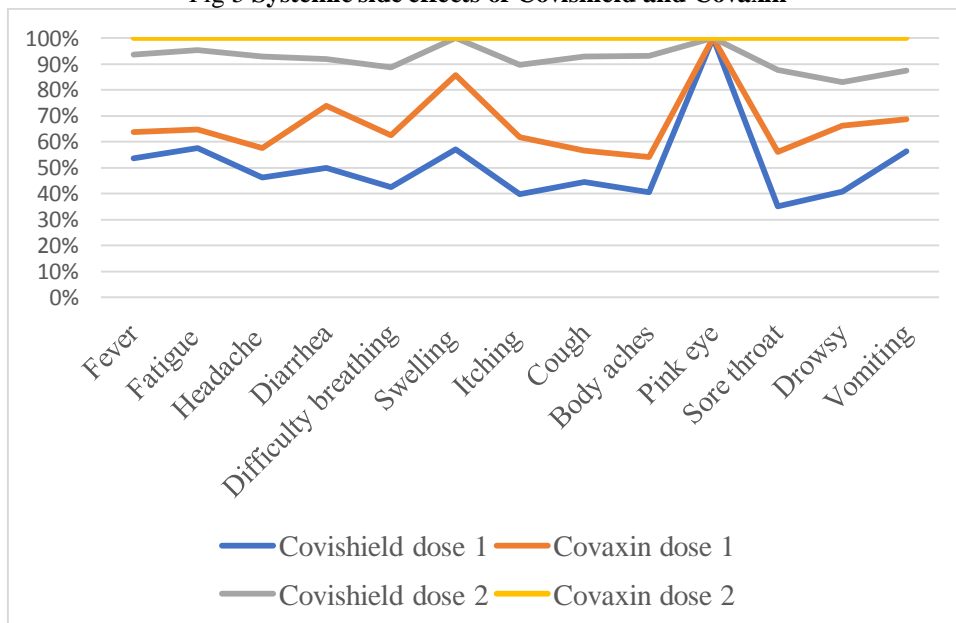
**Fig3 Rating given after first week of Covishield and Covaxin doses**



**Fig4 Local side effects of Covishield and Covaxin**



**Fig 5 Systemic side effects of Covishield and Covaxin**



### V. Conclusion

The fact that India manufactures more than 60% of all vaccines sold across the globe is going to come in handy as also the fact that its \$40 billion pharmaceutical sector is not yet involved. In the pipeline is the development of some more affordable vaccines by the Indian companies with the aim to fight COVID-19. At the moment the Indian Serum Institute’s Covishield is being looked up to as called the “vaccine for the world.”

This study provides a real-world analysis of initial COVID-19 vaccine distribution to front-line hospital workers and community first responders. As the push to vaccinate employees continues, this study provides data for managers to strategically plan for continued first and second vaccine dose distribution plans, as well as considerations for possible booster doses in the future. Due to the number of individuals who have not returned for their second scheduled vaccine dose, there is the possibility employers will need to plan for additional second doses, or may need to repeat the series if immunity from the first dose only has become ineffective. For fully vaccinated individuals who may eventually need a booster dose, any possible adverse events for a third dose are unknown at this time. Health care risk managers should proactively plan for the potential of employees needing to

miss at least one work shift for second or third doses of the vaccine.

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