Review Article

Community Perspectives: Assessing And Addressing Covid- 19 Vaccine Myths In Dakshina Kannada

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ABSTRACT

The COVID-19 pandemic has challenged health systems globally, prompting an urgent need for effective vaccination strategies. In this study conducted in Mangalore, India, from January 30 to September 11, 2022, we aimed to assess the acceptance and challenges of COVID-19 vaccination among the general population and healthcare providers (HCP) in Dakshina Kannada. The study employed a prospective observational design with 1000 participants each from the general population and HCP. Ethical clearance was obtained, and data were collected through a self-administered questionnaire covering socio-demographic information, factors influencing vaccine perception, and opinions of HCP regarding vaccination challenges and management. Data analysis included descriptive statistics and the Chi-square test. Results revealed diverse socio-demographic characteristics among participants, with urban and rural representation. Healthcare providers, predominantly pharmacists and nurses, played a vital role in vaccination discussions. The study identified prevalent myths influencing vaccine acceptance, including concerns about religious objections, infertility, menstrual cycle alterations, and immune system weakening. These myths significantly affected vaccination decisions, with notable differences between vaccinated and unvaccinated respondents .Discussion highlights the impact of myths on vaccination hesitancy, considering factors such as religiosity, menstruation, and immunity beliefs. The study emphasizes the importance of dispelling myths and addressing vaccine hesitancy through accurate information dissemination. It also explores the influence of social media on vaccination decisions and the role of healthcare providers in providing reliable information .Conclusion underscores the need for prompt action by authorities to refute myths, as they contribute to social stigma and impact public perception, potentially increasing the risk of virus transmission.

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The study recommends careful evaluation of information amidst the evolving COVID-19 situation. Acknowledgments express gratitude to the participants and the institution for their contributions to the study's completion.

INTRODUCTION

The World Health Organization declared the novel coronavirus disease covid-19 to be a pandemic on April 7, 2020, after more than 200 countries and territories reported confirmed instances of the illness. Health care and public health professionals must have high quality evidence to identify the global health emergency's most severe dangers and provide resources where they are most needed, as it is testing the resilience of health systems worldwide [1]. India started the COVID-19 booster dose immunization on April 10, 2022, but there hasn't been much uptake. With 1.4 billion inhabitants, India has the second-largest population in the world. Naturally, it is an enormous effort to limit the pandemic within the nation [2]. Utilizing a self-administered questionnaire, a prospective observational study was undertaken among the general population and HCP in Mangalore from January 30, 2022, to September 11, 2022, with the goal of determining the acceptance and challenges of the COVID-19 vaccination. Software for the social sciences was used to examine the data. The relationship between vaccine acceptability and non-demographic and demographic characteristics was examined using the Chi-square test.

The authorities came to the realization that a vaccine campaign by itself would not be adequate; instead, each person's attitude toward vaccinations needs to be evaluated and handled. The study sought to understand the mediating and moderating influence of knowledge and social support on the relationship between the predictors and vaccine hesitancy behaviors among the Indian population, as well as to identify the predictors of vaccine hesitancy behavior using the health belief model and theory of planned behavior[3].Acceptance or reluctance to receive vaccinations is influenced by a person's views about vaccinations, their perceived safety, their level of confidence in the delivery system, their health, their fear of adverse effects, and the absence of a recommendation from a medical professional[4]. Myths are always quite popular, no matter what. These beliefs can have grave consequences, such as inciting fear and potentially fatal circumstances throughout the nation [5].

MATERIALS AND METHODS

1. **Study design and participants:**
   The present work was a prospective observational study that was carried out in Mangalore. Data were collected using a convenience sampling method between 30th Jan-11th Sep. The information was gathered from a sample of general population and Healthcare Providers (HCP). 1000 participants of general population and HCP each participated in the study.

2. **Ethical clearance**
   Ethical approval was obtained by the Institutional Ethics Committee (IEC) of Srinivas Institute of Medical Science, Mukka, Mangalore.

3. **Study criteria**
   Inclusion criteria: Individuals who expressed an interest in participation were included in the study.
   Exclusion criteria: Subjects less than 18 years of age and who were not willing to participate are excluded from the study

4. **Source of Data:**
   Data(s) were collected using the pre-validated questionnaires through direct interaction with the subjects in various locations of Dakshina Kannada. The current study included participants from a variety of socio-economic backgrounds. Each participants took 3mins time to complete the questionnaire.

5. **Study Method:**

The data were collected by using pre-validated questionnaire from the study individuals [15] Inform consent form was prepared in English and Kannada and same were used before selection of subjects. The inform consent form was explained to the participants and consent only participated in the survey. The pre-validated questionnaire was used in the study which was divided into three sections. The collected data(s) were kept confidential.

I. Socio-Demographic Information: The present study collected personal information including domicile, age, gender, social-habits and education to correlate the influence of these parameters on vaccination status.

II. Information on factors influencing their perception of taking a CBD vaccination.

III. Demographic information about healthcare providers and their opinion regarding the challenges and Management of vaccination program in India.

IV. Covid-19 booster vaccine perception: The present study analyzed the perception and challenges behind covid-19 booster dose acceptance by both general population and HCP.

6. DATA ANALYSIS

The collected data(s) were analysed using Microsoft excel and Socscistatistics Descriptive statistics were used to characterize the socio-demographic information of the people. Chi square test is applied to find significant association between Age group, Domicile, Educational status, Alcoholic, non-alcoholic, Smokers, non-smokers, Religion, Economic status and Vaccination status.

1.Area wise distribution of study participants

Area wise distribution of study participants from different parts of Dakshina Kannada district is summarised in Table no.1.

RESULTS

1. Area wise distribution of study participants

Area wise distribution of study participants from different parts of Dakshina Kannada district is summarised in Table no.1.

Table no. 01: Area wise distribution of study participants

Rural	Respondent	Urban	Respondents
Puttur	99(9.9%)	Bejai	156 (15.6%)
Adyar	78(7.8%)	Talapady	109 (10.9%)
Thumbe	135(13.5%)	Kankanady	78 (7.8%)
Baikampady	94(9.4%)	Mulki	49 (4.9%)
Attur	86(8.6%)	Surathkal	116 (11.6%)

2. Socio Demographic characteristics of participants

Table no:02 suggests the socio-demographic characteristics of the study participants (n=2000) viz (HCP=1000, General population =1000)

Table no. 02: Socio Demographic characteristics of participants (n=1000)

Sr No.	Demographic Characteristics	Gender (n=10000)	
		Male(500) 50%	Females (500) 50%
1.	Age		
	18-40	202((24%)	170 (16%)
	41-60	211(24%)	245 (18%)
	>60	87(7.7%)	85 (9.5%)
2.	Education		
	Illiterate	76 (7.3%)	65 (6.5%)
	Primary school	124 (15%)	135 (13%)
	SSLC level	105 (11%)	108 (10%)
	University level	195 (21%)	192 (19%)
3.	Residency		
	Rural	285 (28%)	207 (20%)
	Urban	215 (21%)	293 (29%)

4.	**Social Habits**		
	Alcoholic	103 (20%)	59 (11%)
	Smoker	87 (17%)	14 (2.8%)
	None	310 (62%)	427 (85%)
5.	**Religion**		
	Hindu	250 (25%)	158 (15%)
	Muslim	120 (12%)	128 (12%)
	Christian	130 (13%)	214 (21%)
6.	**Economy**		
	APL	222 (31%)	241 (14%)
	BPL	278 (34%)	259 (19%)

3. Socio Demographic characteristics of Health care providers

Discussing vaccination against covid-19 with patients is a crucial task for medical providers and public health organisations. Table No. 11 details the services provided by various healthcare professionals during immunisation. 90% of the respondents to the study were pharmacists (393). Lab technicians are the least involved participants in our study. Our study includes a variety of healthcare professionals, including academicians, Asha workers, Lab Technicians Nurses, pharmacists, and doctors.
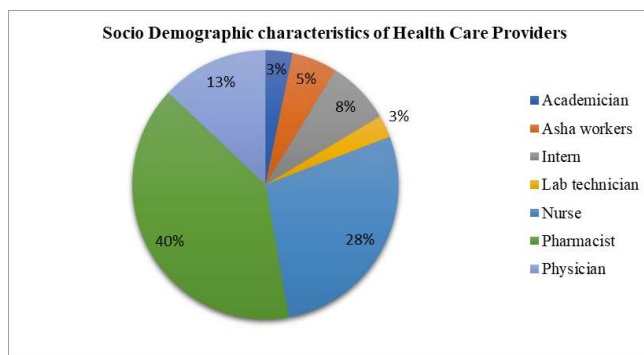
Table no. 03: Socio Demographic characteristics of Health care providers (n=1000)

SI No	Profession	Work	Respondents
1	Academician	College	33 (3.3%)
2	Asha workers	Anganwadi Primary Health Centers Sub-centers	24 (2.4%) 20 (2.0%) 11 (1%)
3	Intern	Hospital	77 (7.7%)
4	Lab technician	Hospital	27 (2.7%)
5	Nurse	Hospital	280 (28%)
6	Pharmacist	Pharmacy Hospital	246(24%) 152(15%)
7	Physician	Hospital	130 (13%)
Grand Total			1000

Fig no: 01 Socio Demographic characteristics of Health Care Providers

Myths Associated with Vaccination

Several myths were associated when the vaccines were initially introduced like religious objections, vaccination causes infertility, it alters the menstrual cycle, and it weakens the immune system and many more. Table no. 11, summaries all such myths and their percentages in both vaccinated and not vaccinated respondents. According to this study about 11% of the respondents believe in religious obligations and are vaccinated and 17% respondents have still not vaccinated based on their religious beliefs. A lot of respondents as much as 26% believe that vaccination weakens your immune system and are vaccinated and 40% have not vaccinated due to this particular reason. As much as 22% respondents are vaccinated and believe that it causes infertility and about 40% respondents have not vaccinated due to this myth. Most of the female respondents believe that vaccination can alter your menstrual cycle and 36% are vaccinated among them with 36% being not vaccinated. Some respondents believe that the natural immunity is better compared to the acquired immunity and of the 282 respondents 133(19%) are vaccinated and 149(52%) are not. 9.4% respondents are vaccinated even after

they believe that vaccination causes you to test positive to viral test and 9% are not vaccinated due to this myth.

Table no. 04: Myths associated with vaccination

SI No	Myths	Vaccinated (n=716)	Not vaccinated (n=284)
1	Religious objections	80(11%)	47(17%)
2	Vaccination weakens the immune system	183(26%)	114(40%)
3	Vaccination causes infertility	160(22%)	95(33%)
4	Alters menstrual cycle	258(36%)	102(36%)
5	Natural immunity is better than Covid-19 vaccine acquired immunity	133(18.5%)	149(52%)
6	Vaccination causes to test positive for viral test	68(9.4%)	54(19%)

Myths associated with vaccination
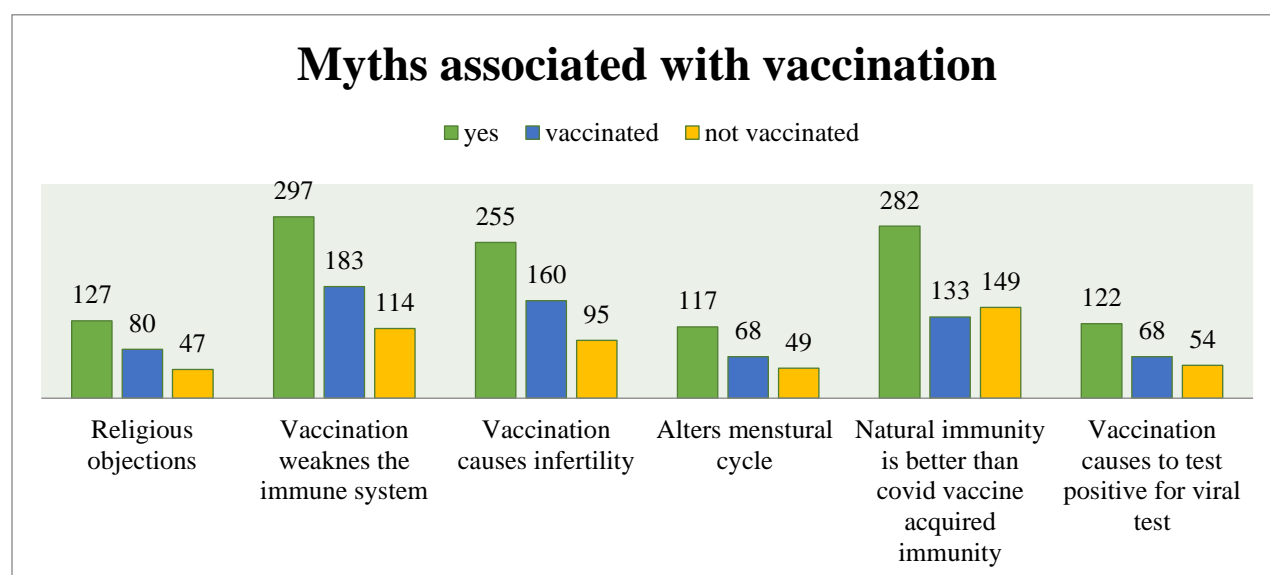
DISCUSSION

By its very nature, a myth spreads quickly and extensively, and people often believe it without checking the veracity of the story or the evidence supporting or refuting it. Furthermore, crowd psychology is a key factor in motivating people to follow a ritual or process in the event of a pandemic. Some behaviors or viewpoints have the potential to increase COVID-19 stigma in the public. Myths and social stigma work together to influence how society views illness and individuals who are afflicted with it. The stigma attached to COVID-19 patients who have recovered and healthcare workers (HCWs) who work in COVID-19 wards and hospitals exacerbates a number of misunderstandings about the spread of infection [6]. Myths viz religiosity, menstruation & infertility, weakening of immunity, influenced vaccination, several studies suggest a lower willingness among women, is explained by women-specific rumors, such as the impact of vaccination on menstruation ailments alteration as a myth on covid-19 but as a fact supporting article suggest that menstrual does not have any effect on menstrual cycle [7]. Research findings reveal myth that women exhibit a greater immune but from biological perspective no difference was noticed. This study also reveals that female participant's vaccination rate was less. The concern in vaccination hesitancy is reflected in

religiosity, a study found that religious teachings prioritize prayers over medicine, thus resulting in vaccination hesitancy among devotees [8]. This is coupled with inappropriate knowledge on vaccines, thus making accept alternative approaches to treat diseases, fearing vaccination may lead to the death of their children. The present study also revealed that reluctance in vaccine acceptance as mentioned above. Covid infected participants had an opinion that natural infection, lead to long lasting immunity so it is not important to get the vaccines, even if any individual have had covid-19, need vaccinated which adds up protection. People who already had covid-19 and do not get vaccinated after their recovery are more likely to get covid-19 again than those who got vaccinated after their recovery and if individual given with monoclonal antibodies or convalescent plasma while sick with covid-19 then no need to wait to get vaccinated [9]. The present study shows that due to past recovered from disease people were hesitant to take the vaccine. Social media influenced vaccination, an Infodemic is too much information including false or misleading information in digital and physical environments during a disease outbreak leading to mistrust in health authorities and undermines public health response. Social media failed to give technically authentic and scientifically validated reason impaired vaccine hesitancy. The anti-vaccination content on internet have been widely broadcast the rumors, myths and inaccurate beliefs regarding vaccine and they have detrimental impacts on vaccine uptake. Several researchers have investigated the reasons for vaccine hesitancy in various demographics, particularly among healthcare workers, for the influenza vaccine [10]. The current reveals that the participants had been influenced from social media in not taking vaccine. Supply and delay in the interval of vaccination influenced vaccination administration of doses of a multiple vaccine using interval that

are shorter than recommended might be necessary in certain circumstances such as impending international travel or when a person is behind schedule on vaccination but needs rapid protection, in this situation an accelerated schedule can be implemented for routine vaccination. However, intervals between doses that are longer than recommended typically do not reduce final anti body concentration, although protection might be attained until recommended number of doses has been administered. The present study reveals that majority of participants received vaccine in intervals that are longer as recommended by govt. HCP have a central role in vaccination against covid-19 and can provide reliable information about vaccines so HCP have the data about vaccination programme against covid-19. The present study also made an attempt to utilize data's knowledge of vaccination from HCP it also suggests that distribution of vaccine was properly managed by government according to HCP and non-compulsion of booster hindered its administration.

CONCLUSSION

Numerous myths have emerged as a result of the ambiguity surrounding the present COVID-19 outbreak. A few of these fallacies are causing social stigma to proliferate widely. These misconceptions may also cause people to become overconfident, which increases their chance of contracting the virus. The present study provided valuable information regarding numerous myths emerged in COVID 19 vaccination. All of these myths have a significant impact on the public's perception and the spread of disease. As a result, the appropriate authorities ought to act promptly to refute the lies and take appropriate action. Considering how unstable the COVID-19 infection situation is at the moment, people should evaluate anything carefully before deciding it's helpful.

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