

## A Pilot Exploration of the Experiences of COVID-19 Vaccinated Perinatal Women and the Need for Psychosocial Interventions in Rural India

To the Editor,

The Indian government and the World Health Organization (WHO) recommended voluntary COVID-19 vaccinations for perinatal women to mitigate the detrimental effect of COVID-19 on pregnancy, mother, and infant.<sup>1,2</sup> Presently, factors such as vaccine-related myths and concerns, anti-vaccine movements, and infodemics are affecting the COVID-19 vaccine uptake.<sup>3,4</sup> These factors are psychological (e.g., low-risk perception of contracting the disease, concerns about safety, conspiracy theories), contextual (e.g., lack of information and adequate recommendations by health-care workers [HCWs] such as clinicians, nurses, auxiliary nursing midwifery, accredited social health activist), physical (e.g., proximity of childbirth, primigravida status), socio-demographic (e.g., low socioeconomic status), and others (e.g., fear of needles, the time needed to decide).<sup>3,5,6</sup> To address these factors, the Indian government encourages COVID-19 vaccination through measures such as awareness drives on social media, mass vaccination drives, and legal requirements.<sup>7,8</sup> However, according to some media reports, rarely coercive or unethical measures may have been used to increase COVID-19 vaccination coverage.<sup>8</sup> This brief preliminary survey of perinatal women was conducted to explore the factors that influenced their acceptance of COVID-19 vaccination during pregnancy and postnatal period.

Across-sectional survey was carried out in the outpatient clinics (antenatal, postnatal, and immunization) of the Departments of Obstetrics and Pediatrics at a tertiary-care rural hospital in western India for one month (mid-December 2021 to mid-January 2022). Perinatal women (antenatal and postnatal period up to six months) aged over 18 years who had received at least one dose of COVID-19 vaccine during the perinatal period were recruited. Women with intellectual disability, who were unwilling to participate, and who had taken the COVID-19 vaccine before the

last menstrual period of pregnancy were excluded. The Institutional Ethics Committee approved the survey, and written informed consent was obtained from all eligible participants during their visits to these clinics. To avoid overcrowding and to comply with COVID-19-related public health measures, participants were interviewed by a clinical psychologist over the telephone ( $n = 39$ ) rather than in-person ( $n = 6$ ), after obtaining their consent. The survey questions primarily focused on their current vaccination status, willingness to and reasons for accepting vaccination, and HCWs' interventions to address their questions and concerns. These questions were developed in collaboration with experts from our ongoing COVID-19 Vaccine Confidence Project for Perinatal Women (CCPP). Furthermore, HCWs' information was deemed adequate only if it covered more than two domains (brief details of different COVID-19 vaccines, side effects, harmful effects on pregnancy/mother/infant) and benefits of the COVID-19 vaccinations.

Out of the 56 vaccinated perinatal women approached, 4 declined consent and we were unable to connect to 7 via phone. Among the remaining 45 participants, over half ( $n = 26$ , 57.77%) had received one dose, while 42.22% ( $n = 19$ ) had received two doses of the vaccine. While 84.44% ( $n = 38$ ) were unwilling (defined as a participant's refusal to take a COVID-19 vaccine during the perinatal period despite its availability) and had concerns about the vaccine, a large majority ( $n = 34$ , 75.55 %) reported that HCWs did not provide any information about vaccines, while others ( $n = 7$ , 15.55 %) opined that the information provided was inadequate (**Table 1**). The majority of women ( $n = 40$ , 88.88%) reported that they were vaccinated for more than one reason. The main or most important reason was then identified by asking closed-ended leading questions, with other reported reasons as options. The most common reasons for accepting vaccination were that it is mandatory, as informed by primary HCWs and village authorities ( $n = 15$ , 33.33%), for the use of public transport ( $n = 6$ , 13.33%) and for hospitalization ( $n = 5$ , 11.11%) (**Table 1**). Only a small proportion ( $n = 7$ , 15.55%) of women were willing to take the vaccine on their own, and their reasons were voluntary ( $n = 3$ , 6.66%) and HCWs' recommendations ( $n = 4$ , 8.88%).

Our findings suggest that most vaccinated perinatal women were not willing to get vaccinated. They were afraid of possible risks for their fetus or infant, although unable to name specific dangers. Also, HCWs did not adequately reassure or educate women on issues causing hesitancy, such as safety and the likelihood of adverse events. As a result, these women may have continued concerns and myths about COVID-19 vaccines. Some measures (e.g., not allowed to use public transport, vaccination during home visits) did promote mandatory vaccination (as per the WHO guidelines).<sup>9</sup> Vaccinations without addressing concerns and myths and using measures that promoted mandatory vaccinations are deemed unethical practices.<sup>9</sup> Such practices can undermine trust in COVID-19 vaccines and may increase vaccine hesitancy among perinatal women due to the spread of unaddressed myths and concerns among them. Perhaps the reason for implementing such measures could be a lack of training for HCWs in providing individual-level intervention to address vaccine hesitancy.<sup>5</sup> Other possible explanations include a lack of screening for COVID-19 vaccine hesitancy, non-availability of feasible and effective psychosocial interventions, and policymakers' or stakeholders' failure to recognize the need for individual-level intervention in COVID-19 vaccinations.<sup>5,6</sup> On the contrary, the published literature is in favor of delivering an effective brief psychosocial intervention to address the concerns or myths related to influenza vaccine hesitancy.<sup>10</sup>

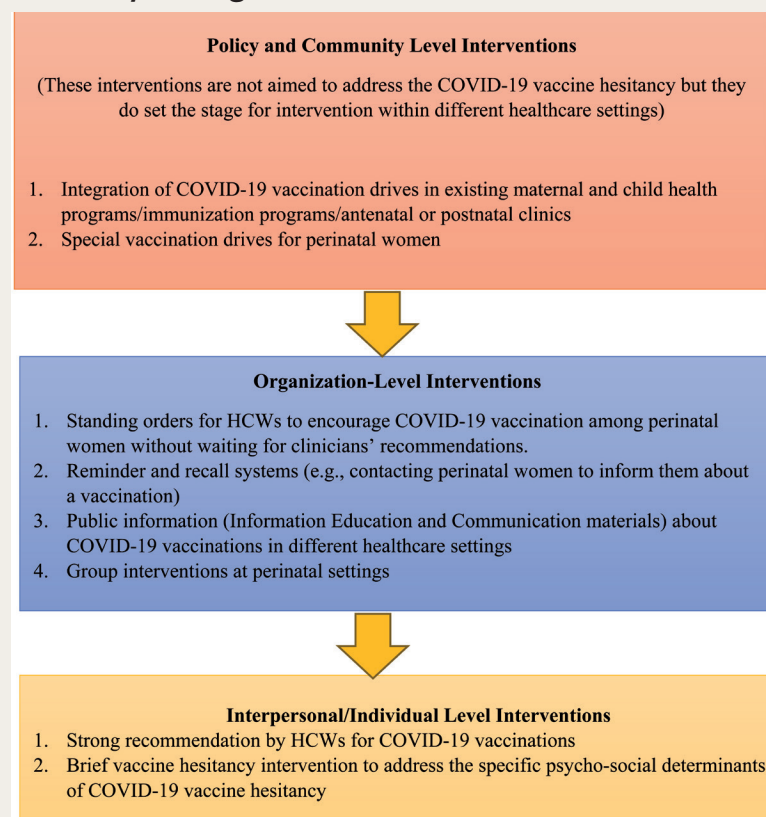
Based on our findings, we recommend that there is a need to develop and implement psychosocial interventions (e.g., policy and community, organization, individual/interpersonal) to address these factors in existing maternal child health programs at different levels (**Figure 1**). Individual interventions provided by HCWs or trained volunteers could be a simple and systematic path for such integration to use and adapt in different health-care settings. Our participants reported that some HCWs themselves did not favor or were ambivalent about vaccination. However, this could be because the COVID-19 vaccines were not recommended during the first phase of the COVID-19 vaccination drive but were later approved for perinatal women.<sup>2</sup> In addition, the discrepancy in information provided by the primary

**TABLE 1.**  
**Socio-demographic Characteristics and Vaccine-Related Answers (N = 45)**

Variable		Mean ± SD or n, Percentage
Age (years)		26.71 ± 5.01
Educations (years)		9.95 ± 1.74
Education (>7 years)		45, 100%
Perinatal period	Antenatal	25, 55.55%
	Postnatal (up to 6 months)	20, 44.44%
Gravida	Primigravida	18, 40%
	Multigravida	17, 37.77%
Willingness to take COVID-19 vaccines	Yes	7, 15.55%
	No	38, 84.44%
Main reasons for taking COVID-19 vaccine among unwilling perinatal women (n = 38)	Use of public transport services	6, 13.33%
	Family pressure	4, 8.88%
	Informed by HCWs or village authorities that it has been made mandatory	15, 33.33%
	Peer pressure	1, 2.22%
	Informed that it was required for hospitalization	5, 11.11%
	No specific reason	3, 6.66%
	Other (e.g., getting subsidized groceries from stores, opening a bank account)	4, 8.88%
Concerns about COVID-19 vaccines	Yes	40, 88.88%
	No	5, 11.11%
Addressed the concerns related to COVID-19 vaccines (e.g., providing information, counseling, or education)	Fully addressed	4, 8.88%
	Addressed some issues	7, 15.55%
	Not addressed at all	34, 75.55%

HCWs: Health-care workers.

**FIGURE 1.**  
**Recommended Flow Chart for Addressing the COVID-19 Vaccine Hesitancy Among Perinatal Women**



HCWs and specialist doctors was also noted by some women. Therefore, the education, training, and continuous and consistent supervision of HCWs are crucial to provide clear recommendations and address these concerns effectively. Furthermore, during their clinical visit, HCWs should address the concerns or misconceptions of already vaccinated women through interpersonal recommendations and individual-level intervention.

To our knowledge, this is one of the first studies to explore the experiences of COVID-19 vaccinated perinatal women. However, it has some limitations, including small sample size, one rural site, the use of self-reported vaccination experiences (more prone to social desirability and false statements), lack of a standardized and validated scale to quantify the response or experiences, selection bias of recruiters, geographical bias (rural region), and authors' perception about the determinants. Therefore, in future studies, detailed psychological, social, and cultural determinants associated with COVID-19 vaccine uptake should be identified using mixed-method approaches. The systematic identification of the factors will enable the development

of targeted and effective psychosocial interventions. Furthermore, we did not specifically inquire about study participants' access to the phone, the internet, or social media. However, a previous study from the same rural setting found that perinatal women had limited access to phones, the internet, and social media.<sup>11</sup>

To summarize, most vaccinated perinatal women were unwilling for COVID-19 vaccination, and their concerns about COVID-19 vaccines remained unaddressed. Therefore, there is an urgent need to develop and implement a feasible and acceptable individual-level intervention to address these concerns.

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