

Hesitation to COVID-19 Vaccinations during Menstruation

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Abstract: Background: Indian Government opened vaccinations above the age of 18 years from May 1 onwards, since then there were a lot of myths flying around on the effect of the vaccines on menstruating women. This study was done mainly in order to evaluate the mindset of menstruating women regarding vaccination. Method: Using the Untitled-Google Form, which collected data through keerthanathiagarajan[at]gmail.com from 200 responders aged 18 years and above, across Tamil Nadu State of India and make use of the same Untitled-Google Form statistical analysis for the study was done. Result: Our findings suggest that over 70% of women are still hesitant to take vaccination. More than 70% showed were scared of the side effects such as heavy menstrual bleeding & dysmenorrhea for which their main source of information was from mass media & social media. Conclusion: Our findings suggest that high level Vaccine Hesitancy (76.4%) among women menstruating women this entails a significant proportion of the population which can be addressed by public health messaging & health care workers and the myths surrounding this should be sufficiently debunked.

Keywords: COVID-19, Vaccination, Menstruation

1. Introduction

Menstruation is a complex process and is influenced by many things such as environmental changes, stress, sleep and some medications. The menstrual cycle is a well-orchestrated function of a woman's body. The cycle only commences when the hormones responsible for menstruation get activated. These hormones are produced by the pituitary gland under the brain which in turn promotes the ovarian hormones such as progesterone and estrogen which are accountable for rupturing the inner lining of the uterus, that is, Endometrium. The entire cycle occurs in over a period of 28-32 days inside the women's body and what we see at the end is only the periods that is visible to us. Apart from this, a variety of inflammatory processes and

tissue re-modelling also occurs during menstruation which is very sensitive to stress, weight changes so overall a menstrual pattern is expected to change in any circumstances in which have a lot of stress involved.

SARS-CoV-2 is a RNA virus which is the causative agent for COVID-19 with Basic Reproduction Rate (R_0) of 3.11 (2.49–3.71) persons and Case Fatality Rate (CFR) of 2.56 (2.06–3.05) per cent⁽¹⁾. Covid 19 and its evolving multiple variant is also a challenge to the whole. It has been estimated that vaccine coverage of 70%-80% is to achieve, to attain herd immunity. The World Medical fraternity is racing to develop safe and effective vaccines against COVID-19 and to save lives to end this pandemic. As of April 2021, 13 vaccines are authorized for public use⁽³⁾.

Sl. No	Type of Vaccine	Product Name
1	RNA vaccine	1. Pfizer-BioNTech vaccine 2. Moderna vaccine
2	Conventional inactivated vaccines	1. BBIBP-CorV, 2. CoronaVac 3. Covaxin 4. WIBP CorV 5. CoviVac
3	Viral vector vaccines	1. Sputnik V 2. Oxford-AstraZeneca vaccine 3. Convidecia 4. Johnson & Johnson vaccine
4	Protein subunit vaccines	1. EpiVacCorona 2. RBD-Dimer).

Myths Surrounding Vaccination

Even during normal times menstruation is a favourite topic around which misinformation storm troopers on social media weave hare brained myths.

The pandemic seems to have provided them with a more fertile ground going by the awful theories linking menstruation and vaccination on social media.

Getting vaccination during menstruation can lead to excessive bleeding and acute pain, says one such story.

Some also believe that the vaccine agents harm a protein present in the placenta, making many sceptical and delay getting the shots. This, again, is completely untrue. Neither do vaccines contain any harmful extract, and neither is present any clinical evidence to support the matter.

Taking these matter seriously the department of women & child development department of Ernakulam embarked on a poster campaign debunking these myths. The posters were made to reinforce that vaccination during menstruation is as safe as any time, neither will it reduce immunity or lead to excessive bleeding.

33, 500 anganwadi workers were asked to clarify the matter to the ones swayed by such misinformation campaign through. However, they he been asked to do it judiciously as we they didn't want to inadvertently help increase the reach of misinformation, which is now largely confined to social media,

The Federation of Obstetrics and Gynaecological Societies of India has issued a circular to debunk the myths.

“Such claims (side effects of vaccination during menstruation) are completely unscientific. There is no physiological, endocrine, or immunological basis affecting vaccination cycle. Women can take the vaccine on any day of the menstrual cycle including the days of the periods. There is no scientific basis for delaying or avoiding vaccination for this reason,” the release said.

Prioritization and plans for phased distribution of available Covid Vaccine was implemented by many countries including India. On 16 January 2021, Government of India launched the world's largest vaccination drive for COVID-19 ⁽⁶⁾ and approves Covishield (a version of the Oxford–AstraZeneca vaccine manufactured by the Serum Institute of India), and Covaxin (developed by Bharat Biotech) for emergency use at the onset of the program ⁽⁷⁾ and a third vaccine Sputnik V was approved in April 2021 with deployment expected to begin by late-May 2021 ⁽⁸⁾.

The Phase 1 of the vaccination drive involved Health Workers and Frontline workers including Police, Paramilitary forces, Sanitation workers, and Disaster management volunteers ⁽⁶⁾. The next phase of the vaccine rollout covered all residents over the age of 60, residents between the ages of 45 and 60 with one or more Comorbidities, and any health care or frontline worker that did not receive a dose during phase 1 ⁽⁹⁾ and from 1 April 2021, eligibility was extended to all residents over the age of 45 ⁽¹⁰⁾. The next phase of the vaccine drive is extended to all residents over the age of 18 from 1 May 2021 ⁽¹²⁾.

Vaccine hesitancy, defined by the World Health Organization (WHO) as a “delay in acceptance or refusal of vaccines despite availability of vaccination services”, is a key hindrance in achieving optimal vaccination coverage among populations around the globe (Larson *et al.* 2018) ⁽¹⁴⁾ ⁽¹⁵⁾. Some of the behavioral factors underpinning vaccine uptake by community such as Complacency, Trust and confidence in Efficacy and Safety, Convenience, Sources of information and Socio-Demographic variation will determine the COVID19 Vaccination coverage and hesitancy ⁽¹³⁾.

In India COVID-19 vaccine deployment is facing an unprecedented degree of uncertainty and complexity, which is difficult to communicate, such as Immune response following Vaccination (e. g. Fever), doubt in the Safety, Effectiveness, Risks for various risk groups (Children, Older adults, Pregnant women, Chronic medical conditions, Immune compromised), Duration of immunity, Repeated vaccination, Transmission dynamics, Microbiological and Clinical characteristics, Multiple vaccines and Infodemic with misinformation characterized by Distrust of science and

selective use of expert authority, Distrust in Pharmaceutical Companies and Government, Straight forward explanations, use of Emotion and anecdotes to impact rational decision-making and development of information bubbles and echo chambers made the Community to have a hesitation, deterrent and barricade towards Covid-19 Vaccination drive programme in India.

2. Methods

2.1 Study design and participants

The source of data for this paper is the Untitled-Google Form, which collected data through keerthanathiyagharajan[at]gmail.com from 200 responses from 15th MAY 2021 aged 18 years and above, across Tamil Nadu State of India. Informed consent to participate in the study was signed by 100% of the responses.

2.2 Survey questions and responses

All questions of the survey were made mandatory and the responses were multiple choices and made through their E-mail id by the voluntary participants. Untitled-Google Form itself provide the analytical data and it was made use for further interpretations.

3. Results

3.1 Statistical Analysis

Among the 200 responses

Factors	Percentage
Graduates	47.7%
Post Graduates	37.4%
Health Care Professionals	12.1%

Menstrual Regularity

Regular Cycles	75.7%
Irregular Cycles	24.3%

Hesitant to take vaccination

Hesitant	76.7%
Not Hesitant	23.4%

Reason for Hesitancy

Not Hesitant	19.6%
Scared of Side Effects	77.6%
Not Effective During Menstruation	2.8%

Information regarding vaccine

Health Care Professional	37.4%
Social Media	18.7%
Mass Media	30.8%
Family & Friends	13.1%

Change of thoughts regarding vaccination after talking to health care professionals

Yes	48.6%
No	22.4%
Maybe	29%

4. Discussion

The aggregate weighted estimates at the state level suggest that a significant proportion of individuals 76.7% showed hesitancy in taking up the vaccination. More than 70% showed were scared of the side effects such as heavy menstrual bleeding & dysmenorrhea for which their main source of information was from mass media & social media

To start with, there is no actual data or evidence to connect COVID-19 vaccines to your menstrual cycle. Millions of women worldwide have already taken the vaccine, and no worrying claims were recorded anywhere. It is a lifesaving vaccine that you need to take as soon as you can

We need to emphasize that the menstrual cycle is a natural process that does not decrease or limit the immune response of the body. Menstruation comes with hormonal changes that might minimally impact the way the body reacts to side effects or an illness. However, it absolutely does not decrease immunity.

Vaccines work on bodies by injecting an inactive or modified pathogen strain to start an immune response. Menstrual cycle or any other bodily processes cannot impact this reaction. So it is as safe for women to get vaccinated as it is for men. The occurrence of side effects from the COVID-19 vaccine is heterogeneous. We do not have enough evidence to link the side effects to a particular gender or age.

5. Conclusion

The immune system is not sufficiently affected by either the COVID-19 vaccine or the menstrual cycle, so scheduling around them is not necessary. In fact, delaying vaccination around your cycle may only leave you unprotected from COVID-19 for a longer time without providing any known benefit. Our findings suggest that over 70% of women are still hesitant to take vaccination more awareness must be brought among women of reproductive age group who form the major state of the country's population high level Vaccine Hesitancy accounts for a significant proportion of the population which can be addressed by public health messaging & welfare programmes funded by the government. Since mass media & social media forms the major source of information regarding vaccination, the rumors spreading on these forums must be vigilantly managed as much as possible there by promoting better health care for women.

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