

COVID-19 Vaccine Hesitancy and Insufficiency in India; A Public Health View on COVID-19 Vaccination in India

Running Title: Covid 19 Vaccine Hesitancy to Insufficiency

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Abstract

Vaccine hesitancy in Covid-19 is one of the topmost global public health threats as per the World Health Organization. India is one of the leading producers of Covid-19 vaccine and started vaccinating its population from 16th January 2021. As expected there is a high prevalence of vaccine hesitancy among the public as well as health care workers. There is a need to bring out public health strategies to deal with this issue. This article discusses the feasible public health strategies to address this issue at the grass root level.

Key words: Covid Vaccine Hesitancy, Covid-19 Vaccine, Health education, Communication, Vaccination drive

India is one of the leading vaccine producers in the world. At present two COVID-19 vaccines are approved for use in India, one is the indigenous Covaxin, by Bharath Biotech, and the second is the Covishield manufactured by the Serum Institute of India. The next possible vaccine is Sputnik V, a Russian vaccine manufactured in India by Dr. Reddy's laboratories [1]. As a public commitment, India has started its COVID-19 vaccination drive on 16th January 2021 [2]. A dry run was successfully rolled out in all districts, following which actual

vaccination was started [3]. This is one of the world largest vaccine drive and India is planning to cover 20 million of its population. Vaccination was initiated among frontline health care workers, public health workers, security personals; later extended to elderly population and people with chronic medical conditions; and at present it is extended to adults over 18 years of age [4].

In the first phase of vaccination, India faced some challenges in vaccine delivery, registration of frontline workers in online

portal and vaccine hesitancy among frontline workers. Problems in vaccine delivery and online registrations are provider based and could be handled by proper training, and improvement of implementation process. Whereas, vaccine hesitancy is receiver based. This phenomenon was observed during the previous Measles and Rubella (MR) mass vaccination in schools, where parents were hesitant to vaccinate their children due to false propaganda on social media against MR vaccination [5]. WHO has enlisted vaccine hesitancy as one of the ten global health threat in 2019 [6].

This time in COVID-19 vaccination, vaccine efficacy and safety are highly questioned due to their accelerated approvals and limited clinical trials, even though scientific community justified the speedy process of these vaccines [7]. In the coming months, we will be having more scientific evidences to support the vaccines' safety and efficacy, but anticipating false propaganda and appropriate measures to tackle vaccine hesitancy need to be taken at every level, like publishing scientific evidence and constantly educating the public on the importance of vaccination [8, 9].

In the month of May 2021, India faced a huge crisis due to the second wave of COVID-19. This crisis occurred due to three major reasons. The first being the mask hesitancy, and lack of maintaining social distancing among people. Secondly, the lack of governments' commitment in preparing to face the second wave, allowing Kumbh Mela pilgrimage and conducting assembly election in five states. Third, the emergence of highly infectious variants such as B.1.617, B.1.1.7 and B.1.351 [10].

Due to the high mortality in the second wave, vaccine hesitancy reduced. However, at the same time the vaccine shortage occurred. Opening of vaccination for adults aged 18 years and above is

another reason for vaccine shortage. Though India is striving hard to tackle these issues, there is still a long way to go to reach the optimal level of vaccination. As of May 30th 2021, India achieved merely 3.1% of full-immunization coverage and 12% of partial immunization (single dose) [11]. In addition to vaccine production and distribution to states, some of the suggested measures that India may take at the grass-root level to increase vaccine acceptance are,

1. Eligible candidates (patients) attending the regular OPD at primary health centers (PHCs), and health and wellness centers (HWCs) should be counseled and motivated by medical officers and paramedical staff.
2. Delivering health education through the existing Non-Communicable Disease (NCD)/Geriatric clinics. The advantages of using NCD/Geriatric clinics for vaccine delivery are that NCD/Geriatric clinics already have a population registry, can ensure two doses of vaccination, and an equitable distribution to the weaker section of the community. However, the challenges likely to be faced here are, poorly functioning of these clinics due to reasons such as insufficient workforce, poor record maintenance, etc.
3. House visits by Health Care Workers (HCWs) (for instance, Medical Officers (MOs), Auxiliary Nurse Midwives (ANMs), Accredited Social Health Activists (ASHAs)) and educating the public through interpersonal communication, and motivating them for vaccination is one of the important population-based approaches [12]. Main advantage of this method is the HCWs can understand the challenges and the concern of the people in receiving vaccination and they can solve these issues accordingly. For example, if the issue is related to the information about the vaccine, HCWs can provide

a better and authentic information on vaccine [13]. If it is related to the vaccination process, HCWs can provide the people with accurate information on how, when and where the candidates can get the vaccine. This method is more appropriate in tackling the vaccine hesitancy but there are disadvantages such as, need for more workforce and the challenge of covering the large number of people.

4. Next is mass media and folk media communication of large groups through some feasible systems. Although by this method message the system may reach the larger groups fast, but the main disadvantage of this method is poor feedback system.
5. It is advisable to assess vaccine coverage and vaccine hesitancy at population level by MOs and by implementing all the methods of communication this issue can be tackled. Even though vaccine hesitancy is highly prevalent in India, at present there is limited evidence on this issue in the medical literature.
6. Depending upon the change in vaccine availability, information flow and effective communication about the vaccine, the behavior of the people will change over the period.

To conclude, when there is vaccine hesitancy as well as vaccine shortage there will be more strain on public health system due to the spread of infection. Hence, a huge responsibility is still on the shoulders of Public Health experts and HCWs to tackle this pandemic more effectively.

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