Vaccination: Are People Really Aware?

Gargi Inamdar¹ | Purva Kukde¹ | Dr. Shilpa Pratinidhi²

¹Student, II/II MBBS, MIMER Medical College, Talegaon Dabhade, Pune, India.
²Professor and Head of Biochemistry, MIMER Medical College, Talegaon Dabhade, Pune, India.

Abstract

INTRODUCTION
Immunization programs are one of the most well-recognized and successful public health programs across the world. Despite the current universal immunization programme, India still experiences some of the highest preventable childhood mortality of any country in the world. This shows that the benefits of the program have not reached the mass population. This may be attributed to vaccine hesitancy. Lack of awareness, imprecise information, religious and community beliefs are some reasons considered for vaccine hesitancy amongst people. Increasing mobility necessitating periodic changes in health care providers for vaccinations will continue to occur, unless new strategies and campaigns become standard. This study aims to find out the attitude and knowledge of the general public towards vaccination. The results would help to target interventions to modify knowledge and attitudes which can prepare future healthcare workers for responsible roles in vaccination programs.

OBJECTIVES
To evaluate the knowledge and attitude of general public about vaccination

METHODS
A cross-sectional study was conducted amongst the general public. A questionnaire made in both languages- English and Marathi was sent in the form of Google Forms. The purpose of the research was explained, and their participation was purely voluntary. The questionnaire consisted of two parts- first section consisted of socio-demographic data and the second section consisted of questions that would test the knowledge and attitude of the participant which included advantages of vaccinations, necessity of booster doses, venue of vaccination, preference of vaccination in their household etc.

RESULTS
Out of 603 respondents, 44.77% (n=270) were males, 54.4% (n=328) were females and 0.8% (n=5) preferred not to say. Majority of respondents belonged to the age group of 18-29 years (45%). 43% (n=262) were graduates and 49.09% (n=296) had 1 or 2 children. 98.84% (n=596) knew the meaning, reason and advantages of vaccination. 93.86% (n=566) of the population was aware about booster doses. 84.74% (n=511) knew about the places where they could vaccinate their kids. 97.3% (n=587) people were aware that “Do Boond Zindagi ke” is the slogan for pulse polio campaign. When people were asked...
**INTRODUCTION**

Immunization programs are one of the most well-recognized and successful public health programs across the world. They have positively impacted the healthcare system, particularly the poor and marginalized communities who carry a disproportionate burden of diseases. Globally, overall vaccine coverage has increased in recent years and a total of 165 countries reported diphtheria, pertussis, and tetanus (DPT) vaccine coverage rates of 80% or greater in 2012. However, the nation-wide evaluated DPT3 coverage has been 72% indicating that India is far from achieving this target. (1) India still experiences some of the highest preventable childhood mortality of any country in the world. (2) Vaccine preventable diseases (VPDs) are still responsible for about 25% of the 10 million deaths occurring annually among children under five years of age. (3)

To combat this, the Government of India launched an expanded programme on immunization in 1978 (which was renamed as Universal Immunization Programme in year 1985) and is currently one of the key areas under National Rural Health Mission (NRHM) since 2005. (4) Recent developments such as that of the indigenous production of a new vaccine, ROTAVAC against rotavirus have brought anticipation among the public. In 2013, development of the typhoid conjugate vaccine, Typbar-TCV was announced. (5) India has its own National Immunization Schedule. Under it, BCG is the first vaccine to be given at birth. Hepatitis B vaccine is to be given within 24 hours of birth from 2011. (6) Polio, DPT and Rotavirus are given first at 6 weeks. Each has its own booster doses at 10 and 14 weeks. (7) Measles is included under the National Immunization Programme. According to recent estimates, the 81,275 annual deaths from measles in India account for three-quarters of the global deaths from this disease. Two-thirds of the children who die of measles and the other preventable childhood diseases would have survived if they had been immunized. (8)

So, despite the availability of vaccines, the benefits have not reached the mass population. This may be attributed to vaccine hesitancy.

The SAGE Working Group on Vaccine Hesitancy defines vaccine hesitancy as the delay in acceptance or refusal of vaccines despite the availability of vaccine service. (9) Lack of awareness, imprecise information, religious and community beliefs are some reasons considered for vaccine hesitancy amongst people. People either misplace or neglect to carry their vaccination cards with them. This reduces the chances of taking booster doses. Misinformation about human papillomavirus (HPV) vaccine safety led to the suspension of a Japanese government campaign and to a drop-in vaccine coverage. (10) The increasing mobility necessitating periodic changes in health care providers for vaccinations will continue to occur, unless new strategies and campaigns become standard. In 2002, WHO and UNICEF introduced the concept of "Reaching Every District. (11) Pulse Polio Campaign worked with similar principles and aimed to eradicate the disease. Though the door-to-door vaccinations were technically for families who failed to vaccinate their children at established booths, the monthly door-to-door policy had effectively become a standard. This policy shift was also subtly reflected in the UNICEF ad campaign. (12) We need more campaigns that would reach every district and household of India.

Previous studies have focused on vaccination hesitancy amongst parents but very few studies have been done on the common knowledge about the concept of vaccinations amongst people in India. This study aims to find out the attitude and knowledge of the general population at large towards vaccination. The results would help to target interventions to modify knowledge and attitudes which can prepare future healthcare workers for responsible roles in vaccination programs.

**AIM**

To evaluate the knowledge and attitude of population about vaccination.

**Supplementary information** The online version of this article (10.15520/jmbas.v8i9.255) contains supplementary material, which is available to authorized users.

Dr. Shilpa Pratinidhi
3 | METHODOLOGY

Questionnaire consisted of two main sections.
1. First section was related to the socio-demographic data which included age, gender, education qualifications and the number of children they had.
2. Second section was about the knowledge and attitude of the participant including advantages of vaccinations, necessity of booster doses, venue of vaccination, preference of vaccination in their household etc.

3.1 | Statistical Analysis

The analysis was done using Microsoft excel.

4 | RESULT

A total of 603 subjects completed filling the online questionnaire regarding the knowledge and attitude about vaccinations.

4.1 | SECTION 1: SOCIO-DEMOGRAPHIC DATA

Out of 603 respondents, 44.7% (n=270) were males, 54.4% (n=328) were females and 0.8% (n=5) preferred not to disclose their gender. Figure 1

Majority of respondents belonged to the age group of 18-29 years (45%, n=271). Figure 2

43% (n=262) were graduates, 30% (n=181) were postgraduates and 27% (n=160) were 12th pass. Figure 3

48.6% (n=294) had no child, 49.1% (n=296) had 1-2 children and 2.1% (n=13) had more than 3 children. Figure 4

4.2 | SECTION 2: KNOWLEDGE AND ATTITUDE TOWARDS VACCINATION

Out of 603 subjects, 98.8% (n=596) knew the meaning of vaccination which is that it is a preventable measure that gives specific protection against diseases. Figure 5

98.8% (n=596) of the population knew the reason behind vaccination that it helps in development of immunity. Figure 6

98.8% (n=596) of the population knew the advantage of getting vaccinated. Figure 7

93.9% (n=566) of the population was aware about the correct reason for necessity of booster doses. 0.3% (n=2) thought that booster doses improve eyesight. Many people, 3.8% (n=23) thought that
booster doses improve immunity as well as eyesight whereas some, 2% (n=12) thought that booster doses are necessary for neither. Figure 8

As compared to the meaning and advantages of vaccination, a slightly less 84.7% (n=511) knew about the places where they could vaccinate their kids. 11.6% (n=70) thought that a child is vaccinated only at government hospitals whereas 2.5% (n=15) thought that a child is vaccinated only at a private clinic by a pediatrician. 1.2% (n=9) did not know. Figure 9

97.3% (n=587) people were aware that “Do Boond Zindagi ke” is the slogan for the polio vaccine campaign. 0.6% (n=3) people thought that it was for diabetes, 0.2% (n=1) for measles 2.2% (n=12) people did not know. Figure 10
VACCINATION: ARE PEOPLE REALLY AWARE?

Even though the people were having knowledge about vaccinations, some knowledge gaps were identified. There is less awareness about vaccine preventable diseases. Out of polio, malaria and tetanus, only 48.8% (n=294) could correctly identify the diseases that can be prevented by vaccination.

As shown in Figure 11, when people were asked about their opinion of buying an optional yet expensive vaccine, 90.7% (n=547) said that they would vaccinate both girl and boy child. 7.5% (n=45) said that they would not buy it because they won’t be able to afford it and 1.8% (n=11) said that they would buy that vaccine only for a girl child.

If Corona vaccine is made available but is of ₹5,000 for each person, 90.3% (n=545) said that they will be able to buy it for their entire family, 7.6% (n=46) said that they would not be able to afford it for all members and 0.9% (n=6) said that they will just vaccinate themselves, as depicted in Figure 12.

Many people leave vaccination course in between. When asked about the reasons for the same, the majority 73.4% (n=443) felt that the leading reason is less awareness about vaccination programs followed by 46.4% (n=280) stating it is because they forget or lose the vaccination cards and hence, they forget the dates. Only 15.6% (n=94) said that they don’t know
the reason for leaving the course in between as they have fully vaccinated their child. 0.8% (n=5) people feel that the reason for not completing vaccination course in the high price of vaccines. This is depicted in Figure 13.

**FIGURE 13:** Reasons for leaving vaccination course in between

5 | DISCUSSION

603 subjects participated in this study. Out of them, 44.77% (n=270) were males, 54.4% (n=328) were females and 0.8% (n=5) preferred not to disclose their gender. Majority of respondents belonged to the age group of 18-29 years (45%). 43% (n=262) were graduates and 49.09% (n=296) had 1 or 2 children.

Overall, the people in our study showed positive attitudes toward vaccination. Amidst the global pandemic, people have started becoming more woke about vaccination. Everyone is eagerly waiting for the discovery of Covid-19 vaccine. In the current study, 90.3% (n=545) said that they will be able to buy the Corona Vaccine for their entire family even if it is ₹5,000 for each person. Soon immunization will be recognized as the core component of health by people. 90.7% (n=547) said that they would vaccinate both girl and boy child even if the vaccine is optional but expensive which is a very constructive mindset in contrast to patriarchy. A study by Malgave DS et al had also highlighted similar results that 80% of OPD patients would vaccinate their girl child for HPV which is not mandatory but optional. (13) People have started realizing the importance of vaccines for all. A study conducted in Srilanka by Herath NC et al among parents revealed that the majority of the participants 90.1% (n=127) thought that vaccinating their children is very important. (14) The current study has found that around 98.8%(n=596) people knew the meaning, reason and advantages of vaccination as opposed to a study conducted in Bhurbaneshwar by Mohapatra et al found that 95% knew about the ongoing immunization services. (15) This is very high as compared to a study in Canada by Ritvo et al where nearly one-third of respondents (32.1%) indicated insufficient knowledge, uncertainty, or an inability to comment. (16) A study done in Saudi Arabia by Alshammari TM et al showed that sixty to ninety percent of the respondents were knowledgeable regarding the health benefits of vaccinations in children. (17)

According to our study, 93.86% (n=566) of the population was aware about booster doses. Many vaccines require a booster shot after the initial dose to continue preventing the disease. However, a large proportion of the population forgets or neglects to take booster shots. This leads to incompetence. According to India National Family Health Survey 2015-16, coverage of DTP1 in India was 87.5 and coverage of DTP2 was 77.3. Statistics of one of our neighboring countries Myanmar show 72.4% DTP1 and 52.3% DTP2 coverage respectively (through Myanmar Demographic and Health Survey) which is very low as compared to a European country like Belgium that has 98.7% DTP1 coverage and 97% DTP2 coverage. But on a positive note, 2018 survey results of India suggest improvements in vaccination coverage compared to the 2015-16 National Family Health Survey due to implementation of Mission Indradhanush, strengthened microplanning and additional monitoring. (18) Mission Indradhanush was launched in December 2014 by The Ministry of Health and Family Welfare to reduce the child deaths occurring due to vaccine preventable diseases. It aimed to achieve more than 90% full immunization coverage by the year 2020. (15)

Our study has highlighted that 84.7% (n= 511) were aware that a child can be vaccinated at both government hospitals as well as at a private clinic of a pediatrician. 27.2%(n=164) of the surveyed population feel that the reason for not completing the
vaccination course is because enough health care facilities are not available. A study in Lucknow by Vohra R et al revealed that reasons for partial immunization were place of immunization being too far (8.22%, n=370), time of immunization being inconvenient (1.26%, n=57), vaccinator being absent (0.63%, n=28) and long waiting time (0.63%, n=28). Equitable coverage is not possible if health care facilities are inadequate. Doctors, nurses and other staff members need to be available at all times. Efforts should be put on to increase the number of immunization ‘delivery points’ especially in rural and remote areas having poor access to health facilities. (3)

Our study shows that 97.3% (n=587) people were aware about “Do Boond Zindagi ke” as the slogan of the Pulse Polio Campaign. This corresponds with a study conducted in semi-urban areas of South India by Joseph N where all the participants had heard about poliomyelitis and that (90%, n=288) of its participants knew that the purpose of Pulse Polio Immunization was to eradicate polio. (20)

Even though the people were familiar about the concept of vaccination, some knowledge gap was identified regarding diseases prevented by vaccination. The identified knowledge gaps and strong association between vaccine knowledge and vaccine preventable diseases imply recommendations to introduce strategic campaigns. Only the knowledge about the advantages of vaccination is not enough if they do not utilize it. When asked to identify the diseases that can be prevented by vaccination amongst polio, measles and diabetes, only 48.76% could correctly identify the right diseases. In a survey conducted in USA by Lu PJ et al, awareness of vaccine-preventable diseases among adults aged ≥19 years ranged from 63.4% to 94.0% (63.4% reported awareness of HPV, 71.5% reported awareness of tetanus, 72.0% reported awareness of pertussis, 75.4% reported awareness of HZ, 75.8% reported awareness of hepatitis B, 83.1% reported awareness of pneumonia, and 94.0% reported awareness of influenza). (21) There is a dearth of research investigating the knowledge of the general public about vaccine preventable diseases and the National Immunization Programme.

In the current study, when asked about the reason why many people leave the immunization course in between, only 15.59% (n=94) said that they didn’t know because they have vaccinated their child. This figure is very less considering that their overall knowledge about the meaning and advantages of vaccination is very high. People do not avail for the programs. No amount of medical advancement is beneficial if people do not avail for it. Medical professionals and community health workers are identified as the most important and most trusted source of information regarding vaccination for patients. (22) It is our responsibility to make sure to educate the general public. We should spread awareness so that everyone vaccinates their child and is aware of the National Immunization Schedule. Posters should be put up in hospitals in the language known by the natives to spread awareness. 73.4% of the people in our study felt that the leading reason is less awareness about vaccination programs.

6 | CONCLUSION

People are willing to vaccinate both their male and female child. They are familiar with the concept of vaccination but there is a lack of awareness about vaccine preventable diseases and campaigns which is the major hurdle in achieving equitable coverage. Workshops can be conducted by medical professionals to enhance mass communication. Basic training should be provided to health care workers working at immunization clinics on how to administer, when to administer and disposing of expired vaccines to prevent biological waste accumulation. It should be a mixed initiative by the Government at all levels: Central, State and District.

The monthly door-to-door visits in the Pulse Polio Campaign in India that followed “Reaching Every District” was successful in eradication of the disease. However, the dose of the Polio vaccine was given orally and hence it was easy to carry and administer. On the contrary, most vaccines included in the National Immunization Schedule namely BCG, MMR and the Pentavalent vaccine have to be injected which poses a great limitation for its administration. New strategies need to be evolved.
The Ministry of Health & Family Welfare has initiated a measles-rubella (MR) vaccination campaign in the age group of 9 months to less than 15 years to reduce under-five child mortality due to measles. A similar campaign conducted in Bangladesh in 2014 achieved a 90% coverage rate. Another major initiative started by the National Rural Health Mission (NRHM), the Village Health and Nutrition Days (VHNDs) included early registration of pregnancy, regular antenatal care and postnatal care, discussion of health topics, etc under it. Full immunisation for children under one year is provided. Only after taking such steps and making it mandatory so that every child from every household in every district is vaccinated can India achieve the goal of Universal Health coverage.

7 | CONFLICT OF INTEREST

Nil

8 | ACKNOWLEDGEMENTS

We acknowledge the support of Dr. Asha Pratinidhi, Professor Emeritus, KIMS-Krishna Institute of Medical Sciences, Karad, Maharashtra who guided us from time to time.

REFERENCES


5. Pilla V. Delhi: Mint; 2013. Aug 27, Typhoid vaccine with longer immunity launched; p. 11.


How to cite this article: Inamdar G., Kukde P., Pratinidhi D.S. Vaccination: Are People Really Aware?. Journal of Medical Biomedical and Applied Sciences. 2020;521–528. https://doi.org/10.15520/jmbas.v8i9.255