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# Assessments of the factors responsible for the optional vaccination in childrens from Bihar

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**Abstract**
For many families, the fear of adverse reactions or harm from vaccines outweighs concerns of the child's contracting the disease. Some families may still believe that the immunity derived from actually having the disease is superior to the immunity that develops in response to the receipt of a vaccine. Contracting some diseases, such as varicella, generally provides lifetime immunity. Hence from the above findings the present study was planned with the objective to assess parents' knowledge, attitude and practice about immunization and to evaluate socio-demographic factors affecting immunization status of the children.
The study was planned in the Department of Paediatrics in NMCH Patna Feb 2016 to July 2016. Total 50 child's aged 1 month to 3 years were collected and presented as below. All the data was collected by standard interview methods. The interviews were conducted by specialists in paediatric infectious diseases, who also explained the medical terms involved. The vaccination status of the index children was determined by checking written vaccination records or on the basis of parental declarations if no such a card was available, and this was later compared with the digital records of the hospital.
The current study collected the data about the knowledge about optional vaccination in childrens. The data collected from the present study suggest that insufficient knowledge of the parents calls for educational programs on paediatric immunization targeting the entire population with a special emphasis on maternal motivation and improving socio-economic status for the success of the Universal Immunization Programme in our country.

**Keywords:** optional vaccines, Indian population, parents

## Introduction
Under the IAP (Indian Association of Pediatricians) there are 2 categories of vaccines available to be given to children and adults: essential and optional. Essential vaccines include BCG, polio, DPT, measles, tetanus, hepatitis B, H influenza B, and in a few states, Japanese encephalitis. These are included in the Universal Immunization Programme (UIP) and under this program no child can be denied immunization.
Optional vaccines mean that one may choose to have it or not without any risk or disadvantage. We all know immunization against vaccine-preventable diseases is definitely beneficial for the individual. The merits of 'optional' vaccines for individual use must be considered on the basis of the degree of prevalence of the infection and disease; age prevalence of mortality, morbidity and sequelae of the disease; risk of severe disease in susceptible adults after weaning of vaccine-induced immunity; and the effects of childhood vaccination in modifying future epidemiology. Socioeconomic factors are of important consideration.
All optional vaccines are warranted to be given on account of high disease burden and the fact that they are safe and effectively reduce morbidity and mortality due to the disease. However affordability and availability if these vaccines make it difficult for the government to get them added to the UIP. By classifying a vaccine as optional the choice is left with the treating physician and parent to decide if the child needs it or not. The optional vaccines include MMR, rotavirus, typhoid, Hib, chickenpox (varicella), hepatitis A, pneumococcal, meningococcal, influenza viral vaccines, HPV [1].
Some parents and health-care providers are concerned about the increasing number of vaccines being administered to very young children. Parents may be concerned that the infant's immune system is inadequately developed to handle all the vaccines administered over the first two years of life and that receiving so many vaccines could potentially overwhelm the child's immune system. However, studies have not demonstrated that the vaccines weaken the immune system. In fact, the number of antigens to which a child's immune system is exposed through the recommended vaccines is actually lower than the number of antigens individuals encountered 40 or more years ago from naturally occurring infections. Some parents and others may believe that the risks associated with a vaccine are greater than the potential of contracting the rarer diseases, such as diphtheria or polio [2].
Cost factors: Financial and cost factors can influence the availability and promotion of vaccines in private practices. The cost of administering privately purchased vaccines is prohibitive for some providers who are poorly reimbursed for vaccines by insurance carriers and managed health-care plans. The purchase of vaccines is the highest cost incurred by pediatric offices, higher even than personnel costs. Yet some vaccines are reimbursed at a price that does not compensate the health-care office for vaccine administration costs, including those associated with the storage, supply, and

personnel necessary to administer vaccines. Economic losses associated with vaccines can result from the previously noted storage problems, expiration of the vaccine before it is administered, and coding or billing errors.

There has been much publicity in recent years regarding possible links between vaccines and the development of autism or other neurologic disorders. This publicity, along with other actual, unsubstantiated, or disproved vaccine safety concerns, has resulted in parental fears and concerns regarding the safety of vaccines. Such fears may cause families to delay immunizations or to decline them altogether [3].

Adverse outcomes: In 1999, concerns were raised about a causal link between the administration of vaccines containing the preservative thimerosal and the development of autism and/or other neurologic conditions. Since the release of that first report, however, several other researchers have conducted studies to evaluate that relationship. No epidemiologic evidence for a causal association between thimerosal and the development of autism could be identified [4].

For many families, the fear of adverse reactions or harm from vaccines outweighs concerns of the child's contracting the disease. Some families may still believe that the immunity derived from actually having the disease is superior to the immunity that develops in response to the receipt of a vaccine [5]. Contracting some diseases, such as varicella, generally provides lifetime immunity.

Hence from the above findings the present study was planned with the objective to assess parents' knowledge, attitude and practice about immunization and to evaluate socio-demographic factors affecting immunization status of the children.

## Methodology

The study was planned in the Department of Paediatrics in NMCH Patna from Feb 2016 July 2016l. Total 50 child's aged 1 month to 3 years were collected and presented as below. All the data was collected by standard interview methods.

The interviews were conducted by specialists in paediatric infectious diseases, who also explained the medical terms involved. The vaccination status of the index children was determined by checking written vaccination records or on the basis of parental declarations if no such a card was available, and this was later compared with the digital records of the hospital.

Approval of the institutional ethical committee was taken prior to conduct of the study.

## Results & Discussion

The data from the 50 child visited to the Department of the Paediatric for regular vaccinations were collected and presented as below.

**Table 1:** Demographic Data

| Parameter | No. of Cases |
|---|---|
| Age | |
| Up to 1 year | 16 |
| 1-2 years | 20 |
| 2 & above | 14 |
| Sex: | |
| Male | 35 |
| Female | 15 |
| Person Visited for Vaccination | |
| Mother | 8 |
| Father | 7 |
| Both | 25 |
| Other | 10 |
| Education of Parents | |
| Elementary | 7 |
| Secondary | 8 |
| Higher | 35 |
| Occupation of Parents | |
| Housewife | 16 |
| Job | 30 |
| Self Employed | 4 |
| Average Monthly Income | |
| Below Rs 10,000 | 22 |
| From Rs 10,000 – 30,000 | 18 |
| Above Rs 30,000 | 10 |
| Immunization Status | |
| Completely Immunized | 42 |
| Partially Immunized | 7 |
| Not Immunized | 1 |

**Table 2:** Optional Vaccination

| Optional Vaccination | No. of Cases | Total |
|---|---|---|
| Knowledge About | | 50 |
| Yes | 35 | |
| No | 15 | |
| In Government Hospitals | | 22 |
| Given | 4 | |
| Not Given | 18 | |
| In Private Hospitals | | 28 |
| Given | 6 | |
| Not Given | 22 | |

Communication has been described as a core component of service delivery in the immunization programme and can play an important role in ensuring that children are fully vaccinated [6]. However, our study suggests that vaccination communication was poorly understood by policy makers, with little mention of capacity building in communication or communication in the wider context of social mobilization.

Our study identified a number of other factors that were reported as influencing the successful implementation of

vaccination communication strategies for both routine immunization and mass campaigns. Weak political commitment impacted negatively on communication strategies for routine immunization services and contributed to difficulties with funding, deployment and training of staff, and provision of equipment and transportation especially at lower levels of the health system. Indeed, funding was a major challenge in the implementation of most components of immunization delivery in both states. This was confirmed in the Comprehensive EPI multi-year plan where communication and advocacy received the least budgetary allocation compared to other components, and is consistent with the results from recent studies conducted in Cameroon and Nigeria [7]. Poor funding played a significant role in many of the barriers identified in this study.

Several studies have suggested that regular exposure through mass media and community channels is key to promoting vaccination, although the evidence on the effects of such community-aimed interventions to inform and educate about childhood vaccination is still quite weak [8]. Furthermore, a lack of communication activities outside campaigns may result in people not recalling vaccination messages about routine immunization. The implication of this is that if messages are not given continuously people may forget or may not attach importance to the issue.

Most parents reported believing in the protective effects of vaccination. No statistically significant association was determined between belief in vaccination's protective effects and the characteristics of the study population..

One of the important factors which can affect the parental practice is their knowledge regarding vaccination. A study conducted by Favin *et al*. [9] showed that lack of knowledge about the importance of vaccines has been one of the main barrier to immunization. In this study, 70% of respondents believed that immunization prevents some infectious diseases, rest one-third of parents did not know this fact. 2% of parents had a misconception that it is a nutritional supplement which increases growth. Though vaccines per se are not nutritional supplements, they do indirectly facilitate growth and development of children [10].

The high prevalence of vaccine-preventable diseases in a developing country like India highlights the need to effectively communicate essential information on vaccination to parents. Most mothers acknowledged that they came to know about vaccination from doctors. This is in line with the study conducted by Montasser *et al*. [11] This finding suggests a huge responsibility of doctors not only in prescribing vaccines but also in educating parents toward better health care practices. This study has shown that parents obtained vaccine information from a multitude of other sources as well such as health workers, media and society. Hence, these means also prove pivotal in effectively disseminating information as it is in pulse polio program.

Parental income can be another factor which can affect immunization status of children. In this study, it was found out that as the family income increased proportion of children reaching fully vaccinated status is also increased. Children from those families having less income were less likely to be fully vaccinated. This could be because, the low-income group prioritize their time for earning for their family than on preventive health care and also due to poor education level [12].

## Conclusion

The current study collected the data about the knowledge about optional vaccination in childrens. The data collected from the present study suggest that insufficient knowledge of the parents calls for educational programs on paediatric immunization targeting the entire population with a special emphasis on maternal motivation and improving socio-economic status for the success of the Universal Immunization Programme in our country.

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