

## RESEARCH ARTICLE

## Assessment of Medico-social factors for missed opportunities in Immunization

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### Abstract

A cross-sectional study was undertaken at Immunoprophylactic centre (IPC) during February-March 2007, to find out the immunization status of beneficiaries, medico-social factors for immunization failure and awareness about importance of immunization in Parents. The information about primary immunization was collected by interview technique from the parents mostly from mothers accompanying the children. The children receiving immunization as per the Universal Immunization Program schedule were called fully immunized. Totally 346 Children attended IPC for primary immunization during the above period. The information about immunization status was confirmed from the vaccination card of the child as well as by asking the history of immunization to the mothers accompanying the children, and examination of BCG scars. Most of the children attending IPC were immunized, but few are partially or not immunized. The important reasons for immunization failure were found to be obstacles, lack of information, and lack of motivation. Awareness of parents regarding importance of immunization was very high in parents of fully immunized children as compared to parents of partially immunized or not immunized children.

**Keywords:** Immunization, vaccination, medico-social factors, universal immunization program, BCG scars.

### Introduction

Immunization is one of the most cost effective interventions for vaccine preventable diseases. In India, BCG was the first immunization started against tuberculosis in 1962 that later became the part of Expanded program on immunization (EPI), started in 1978. In 1979 Oral Polio vaccine was included in EPI. The program was revised and renamed in November 1985 as Universal immunization programme now referred to as National immunization programme. This program is focusing more on infants and pregnant mothers. Measles vaccine was added to this programme in the same year and National immunization programme became a part of CSSM programme in 1992 and RCH programme in 1997. In 1995 India took a giant step closer to eradicating polio, through the strategy of National Immunization Day-Pulse polio Immunization (Kulkarni and Aswar, 2005; Kishore, 2005; Park, 2005). As per National Family Health Survey (NFHS) 2 (1998-99), the 78.4% of children were fully immunized in Maharashtra and the result of NFHS-3(2005-06) reported only 59% of children were fully immunized in Maharashtra. The low and declining extent of immunization coverage in NFHS-3 suggests greater vulnerability of the beneficiaries to the diseases which are entirely preventable. The success of the Universal immunization programme (UIP) primarily depends on the administration of a full course of the potent vaccine at right age. Out of various reasons, the most common reason for immunization failure of child is that parents do not bring their children for immunization at right age (Kulkarni and Aswar, 2005).

This study was carried out to know the various Medico-social factors responsible for immunization failure of the primary immunization schedule. Following are the various objectives of this study:

1. To study the immunization status of beneficiaries attending Immunoprophylactic centre.
2. To find out Medico-social factors for missed opportunities in immunization.
3. To find out awareness about importance of immunization in parents.
4. To make suitable recommendations based on study.

### Materials and methods

*Study area:* Immunoprophylactic centre of N.K.P Salve Institute of Medical Sciences and R.C., Nagpur.

*Study design:* Cross-sectional study.

*Study period:* February to March 2007.

*Study sample:* 346 Children attending IPC for primary immunization during above period.

*Methodology:* The information about primary immunization was collected by interview technique from the parents mostly from mothers accompanying the children. The children receiving immunization as per the UIP schedule (i.e. BCG, 3 doses of DPT and OPV and Measles) were called fully immunized. The information about immunization status was confirmed from the vaccination card of the child as well as by asking the history of immunization to the mothers accompanying the children, and examination of BCG Scars. The reasons of immunization failure and awareness about importance of immunization were ascertained.

**Results and discussion**

It was observed that 266 (76.87%) children were fully immunized according to UIP schedule, whereas 67 (19.36%) children were partially immunized and 13 (3.75%) children were non-immunized (Table 1). Regarding the immunization status, more male children (80%) are fully immunized than female (73.29%). More female children are partially immunized (21.73%) as compared to male (17.29%) as high dropout rate was observed in females than in males. However the difference is not significant. Similar finding were quoted in study carried out by Deo (1988), who reported 76.86% immunization coverage in Nagpur city. Another study carried out by Bhatia *et al.* (2004) who reported 73.23% children were fully immunized which are lower than this study finding. The result of NFHS-3 (2005-06) reported only 59% of children were fully immunized in Maharashtra which is lower than this study.

Table 1. Primary immunization status of the children.

Immunization status	Total no. of children		Total (%) (n = 346)
	Male (%)	Female (%)	
Fully immunized	148(80)	118(73.29)	266(76.87)
Partially immunized	32(17.29)	35(21.73)	67(19.36)
Not immunized	05(2.70)	08(4.96)	13(3.75)
Total	185(100)	161(100)	346(100)

Table 2. Reasons for immunization failure.

Reasons for immunization failure.	No. of children (n = 80) (%)
Lack of information	26(32.5)
1. Unaware of need for immunization	06(7.5)
2. Unaware of need to return for 2 <sup>nd</sup> /3 <sup>rd</sup> dose	13(16.25)
3. Time of immunization not known	05(6.25)
4. Fear of side reactions	02(2.5)
Lack of motivation	07(8.75)
1. Postponed till another time	04(5)
2. No faith in immunization	01(1.25)
3. Rumours	02(2.5)
Obstacles	47(58.75)
1. Place of immunization too far to go	02(2.5)
2. Social occasion	18(22.5)
3. Mother too busy	06(7.5)
4. Family problems including illness of mother	06(7.5)
5. Child ill, not brought	15(18.75)
Total	80(100)

Table 3. Medical reasons for immunization failure.

Disease	No. of children (%)
Diarrhoea	05(33.33)
Mild respiratory infections	04(26.26)
Low grade fever	04(26.26)
Malnutrition	01(6.66)
Low birth weight infants	01(6.66)
Total	15(100)

Reasons for immunization failure are classified in three major groups. Most important reason for immunization failure was found to be Obstacles (58.75%). In this, social occasion was contributing factor around 22.5%, illness of the child was 18.75%, mother too busy was 7.5%, illness of mother was 6.25% and place of immunization too far to go recorded 2.5%. In a study carried out by Gupta *et al.* (1985), it was observed that an obstacle to immunization was responsible for 63.5% of failure. Second largest group for immunization failure was observed to be lack of information (32.5%). When studied in detailed, it was observed that lack of awareness of need for 2<sup>nd</sup> or 3<sup>rd</sup> dose was found to be the major reason in 16.25%. Other factors were unaware of need for immunization (7.5%), Place and time of immunization not known (6.25%), as well as fear of side reactions (1.25%) and wrong ideas about contraindications (1.25%) (Table 2) Lack of health education and communication gap between health personnel and beneficiaries are possible reasons for these lacunae and there is a need to strengthen this weak link.

Deo (1988) carried out a study in 1988 in Nagpur city and also observed lack of information (56.08%) as a major factor for immunization failure. Findings of other studies are also consistent with Kulkarni *et al.* (1989) and Bhandari *et al.* (1989). Third group comprised of lack of motivation and in this group, postponement to another date was major contributing factor (5%). Some parents mentioned as their children were already taken polio immunization under pulse polio immunization, hence not brought for routine polio immunization. Due to PPI, the routine polio immunization has dropped from 95% (before PPI were implemented) to only 73% in 1998. Other factors were rumors (2.5%) and no faith in immunization (1.25%). Similar finding were quoted by Kulkarni and Aswar (2005) in their study. The medical reasons for not bringing the child for immunization were diarrhoea (33.33%), mild respiratory infections (26.26%), low grade fever (26.26%), malnutrition (6.66%) and low birth weight infants (6.66%) (Table 3). Immunization is frequently postponed if children are ill or malnourished. In fact it is particularly important to immunize children with low grade fever, mild respiratory infections, diarrhea, malnutrition and other minor illness. Immunization is the need for these children (Kulkarni and Aswar, 2005). The findings of this study was in accordance with Kulkarni and Aswar (2005) who reported that LBW babies, acute respiratory infections, and acute gastroenteritis were the medical causes for not bringing the child for immunization. It was observed that, out of 266 parents of fully immunized children, 249(93.60%) were aware and 17(6.39%) were not aware about importance of immunization (Table 4). Whereas from 67 parents of partially immunized children and 13 parents of not immunized children, only 33(49.25%) and 1(7.69%) were aware as well as 34(50.74%) and 12(92.30%) were not aware about importance of immunization respectively.

Table 4. Association of immunization status of children with awareness in parents regarding importance of immunization.

Immunization status	Awareness regarding importance of immunization in parents		Total no. of parents (%)
	Aware (%)	Not Aware (%)	
	Fully immunized	249(93.60)	
Partially immunized	33(49.25)	34(50.74)	67(100)
Not immunized	01(7.69)	12(92.30)	13(100)
Total	283(81.79)	63(18.20)	346(100)

**Conclusion**

This study was undertaken to find out the immunization status of beneficiaries attending Immunoprophylactic centre (IPC), medico-social factors for immunization failure and awareness about importance of immunization in parents. Most of the children attending Immunoprophylactic centre were immunized, but few are partially or not immunized. The important reasons for immunization failure were found to be obstacles, lack of information, and lack of motivation. Awareness of parents regarding importance of immunization was very high in parents of fully immunized children as compared to parents of partially immunized or not immunized children. The difference observed was highly significant (p < 0.00001). To conclude, the following are the various recommendations of the study:

1. Efforts need to educate the mothers regarding importance of immunization through various mass media.
2. Taking into consideration of socio-cultural practices of Indian community special efforts should be carried out to improve the immunization coverage in female children.
3. For better coverage of immunization, the co-operation of Non-governmental organization should be encouraged.

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