Original Article

A study of immunization coverage in the rural field practice area

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Abstract

Introduction: Infectious diseases are a major cause of morbidity and mortality in children. One of the most cost-effective and easy methods for the healthy well-being of a child is immunization. **Aims and Objective:** To Study Immunization Coverage in the Rural Field Practice Area. **Methodology:** It was a community based cross sectional study at the Rural health training Centre during one year period January 2015 to January 2016 attending Immunization OPD. Children between 12 to 23 months of age, the immunization status of the children was categorized as: Fully Immunized, Partially Immunized, Not Immunized: The statistical analysis done by Chi-square test. **Result:** Coverage of BCG was 98.23 %, DPT 1 was 96.67 %, DPT 2 was 92.45 %, DPT 3-86.72 %, Measles-92.23 %, DPT /OPV -76.43 %, Dropout rate between 1st and 3rd doses OPV and DPT -9 Full Immunization Coverage was (12-23 months). 85.65 %. Overall prevalence of Partially /Non-immunized was 10.45 %. The proportion of Partially /Non-immunized was significantly more in Females i.e. 14.61 % as compared to Males 6.67 % ($P<0.01$, $\chi^2 = 6.266$, df= 1). The Reasons for Partially /Non-immunized was Lack of Information 16 (41.02%) Lack of Motivation by Health Worker 18 (46.15%), Obstacles - 15 (38.46%). **Conclusion:** It can be concluded from our study that Full Immunization Coverage was (12-23 months) 85.65 %. The common Reasons for Partially /Non-immunized were Lack of Motivation by Health Worker followed by Lack of Information and Obstacles.

Key Words: Immunization Coverage, Reasons for Partially /Non-immunization.

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INTRODUCTION

Infectious diseases are a major cause of morbidity and mortality in children. One of the most cost-effective and easy methods for the healthy well-being of a child is immunization. The goal of immunizing children against Tuberculosis, Polio, Diphtheria, Pertussis, Tetanus, Hepatitis B, and Measles, responsible for child mortality and morbidity, is indeed a noble one.[1] The most important indicators mentioned in the Millennium Development Goals (MDGs) for which India is a signatory, are the under-five mortality rate (U5MR), Infant Mortality Rate (IMR), and proportion of one-year-old children immunized against measles (P1MV). About one-quarter or 25% of the under-five mortality is due to vaccine-preventable diseases.[2] In May 1974, the World Health Organization (WHO) officially launched a global immunization program known as the Expanded Program of Immunization (EPI), to protect all the children of the world against six vaccine-preventable diseases, by the year 2000. EPI, launched in India in January 1978, was re-designated as the Universal Immunization Program (UIP). UIP has been able to avert many deaths because of the six childhood diseases since 1985.[3] The UIP was started in India with the aim of achieving at least 85% coverage of the primary immunization of infants, that is, with three doses of Diphtheria, Pertussis, Tetanus (DPT) and Oral Polio Vaccine (OPV), one dose of Bacillus Calmette–Guérin (BCG), and one dose of measles, by the year 1990. According to the National Population Policy (NPP) universal immunization of children against all vaccine-preventable diseases should be achieved.[4] Despite all the efforts put in by the governmental and

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non-governmental institutes for 100% immunization coverage, there are still pockets of low coverage areas. In India, immunization services are offered free in public health facilities, but despite rapid increases, the immunization rate remains low in some areas. According to the National Family Health survey (NFHS-3),[5] In India only 44% of the children of age one to two years have received the basic package. According to DLHS-3 (2007-2008)[6] rural area of Maharashtra, 67.8% children were fully immunized, 1.2% of the children were unimmunized, while the total rates in the state of Maharashtra were 69.1 and 1.1, respectively. Data of NFHS-3 revealed that the percentage of children between 12 and 23 months of age, in Maharashtra, with full immunization (BCG, measles, and three doses each of polio/DPT) was 58.8% and in the rural area of Maharashtra it was 49.8%. The WHO recommended a 30 cluster sample survey for estimating the immunization coverage among infants, and it has been found to be very useful by the public health administrators in developing countries, because it is rapid, operationally convenient, and cost-effective.[7]

MATERIAL AND METHODS

It was a community based cross sectional study at the Rural health training Centre during one year period January 2015 to January 2016 attending Immunization OPD. Children between 12 to 23 months of age, Children whose parents/guardians are willing to participate in the study included into study while Children below 12 months and above 23 months' age, Children whose parents/guardians are not willing to participate in the study were excluded from the study. The entire population was divided in to 30 clusters. From each cluster, seven children aged 12-23 months were interviewed (total 210) using a pre-designed and pre-tested questionnaire. The immunization status of the children was categorized as: Fully Immunized: When the child had received BCG, Three doses of DPT and three doses of OPV and Measles vaccine by the age of one year. Partially Immunized: When the child had received some but not all vaccines. Not Immunized: When the child had not received any of the vaccine by the age of one year. The statistical analysis done by Chi-square test.

RESULT

Table 1: Distribution of the Children as per the Vaccination Coverage

Vaccine Coverage	Rural (%)
BCG (Children aged ≥ 2 months)	98.23 (n=892)
DPT 1 (Children aged ≥ 5 months)	96.67 (n=768)
DPT 2 (Children aged ≥ 5 months)	92.45 (n=768)
DPT 3 (Children aged ≥ 5 months)	86.72 (n=768)
Measles (Children aged ≥ 10 months)	92.23 (n=850)
DPT /OPV booster (children aged ≥ 24 months)	76.43 (n=350)
Dropout rate between 1st and 3rd doses OPV and DPT	9
Full Immunization Coverage (12-23 months)	85.65 (n=390)

Coverage of BCG was 98.23 %, DPT 1 was 96.67 %, DPT 2 was 92.45 %, DPT 3-86.72 %, Measles-92.23 %, DPT /OPV -76.43 %, Dropout rate between 1st and 3rd doses OPV and DPT -9 Full Immunization Coverage was (12-23 months). 85.65 %.

Table 2: Distribution of the Children as per Sex and Immunization Status

Sex	Fully Immunized	Partially /Non-immunized	Total
Male	182 (93.33)	13 (6.67)	1959(100)
Female	152(85.39)	26(14.61)	178(100)
Total	**334(89.30)**	**39(10.45)**	**373(100)**

($P<0.01$, $\chi^2 = 6.266$, df= 1)

Overall prevalence of Partially /Non-immunized was 10.45 %. The proportion of Partially /Non-immunized was significantly more in Females i.e. 14.61 % as compared 6.67 % ($P<0.01$, $\chi^2 = 6.266$, df= 1)

Table 3: Reasons for Partial Immunization /Non-immunization (n=39)

Reasons		No	Percentage (%)
Lack of Information 16 (41.02%)	Unaware of need of immunization	5	12.82
	Unaware of need to return for 2nd and 3rd Dose	2	5.13
	Fear of side reactions	6	15.38
Lack of Motivation by Health Worker 18 (46.15%)	Wrong ideas about immunization	3	7.69
	Postponed until another time	7	17.95
	No faith in immunization	11	28.21
Obstacles 15 (38.46%)	Time of immunization inconvenient	3	7.69
	Vaccinator absent	2	5.13
	Mother too busy	5	12.82
	Child ill- not brought	2	5.13
	Child ill- brought but not given vaccine	2	5.13
	OPV only considered a vaccine	1	2.56.

*Multiple responses

Lack of Information was in 16 (41.02%) in that Unaware of need of immunization were 12.82%, Unaware of need to return for 2nd and 3rd Dose were 5.13%, Fear of side reactions were 15.38%, Wrong ideas about immunization was in 7.69%. Lack of Motivation by Health Worker 18

(46.15%) in that Postponed until another time -17.95 and no faith in immunization was in 28.21%, Obstacles was 15 (38.46%) in that Time of immunization inconvenient was 7.69% and Vaccinator absent in 5.13%, Mother too busy in 12.82%, Child ill- not brought in 5.13%, Child ill- brought but not given vaccine in 5.13%, OPV only considered a vaccine was in 2.56%.

DISCUSSION

In 2008, the World Health Organization estimated that 1.5 million of deaths among children under five years were due to diseases that could have been prevented by routine vaccination, representing 17% of global total mortality in children under 5 years of age [7]. In the United States immunization has reduced the incidence of childhood vaccine preventable diseases by 98 – 100% [8]. The effective control of vaccine preventable diseases depend on the extent of immunization coverage achieved hence the estimation of the success of routine immunization by assessing the coverage rate. In Nigeria, the findings of the National Demographic Health Survey along with UNICEF showed a decline in the immunization coverage between 1990 and 1999 from about 30% to 17% and a further gradual decline to 13% in 2003 [9,10]. The reasons adduced for this included poor coordination and planning, political instability, and continuing economic recession [11,12]. In our study we have found that Coverage of BCG was 98.23 %, DPT 1 was 96.67 %, DPT 2 was 92.45 %, DPT 3-86.72 %, Measles-92.23 %, DPT /OPV -76.43 %, Dropout rate between 1st and 3rd doses OPV and DPT -9 Full Immunization Coverage was (12-23 months). 85.65 %. This was similar to Gneyaa S Bhatt *et al* they found [13]32.8 %, 96.7%, 95.3%, 90.2%, 85.8%, 87.6%, 74%, 10, 83.4% Coverage of BCG, DPT 1, DPT 2,DPT 3, Measles, DPT /OPV, Dropout rate between 1st and 3rd doses, Full Immunization respectively. Overall prevalence of Partially /Non-immunized was 10.45 %. The proportion of Partially /Non-immunized was significantly more in Females i.e. 14.61 % as compared 6.67 % ($P<0.01$, $\chi^2 = 6.266$, df= 1) this was similar to Gneyaa S Bhatt *et al* [13], more proportion of Un-immunization or partial immunization was found in females may because of psychology of the peoples to take less care as compared to males this also reflect in the immunization services they fail to receive immunization at subsequent follow-ups.

The reasons Partial Immunization /Non-immunization were Lack of Information was in 16 (41.02%) in that Unaware of need of immunization were 12.82%, Unaware of need to return for 2nd and 3rd Dose were 5.13%, Fear of side reactions were 15.38%, Wrong ideas about immunization was in 7.69%. Lack of Motivation by Health Worker 18 (46.15%) in that Postponed until another time -17.95 and no faith in immunization was in 28.21%, Obstacles was 15 (38.46%) in that Time of immunization inconvenient was 7.69% and Vaccinator absent in 5.13%, Mother too busy in 12.82%, Child ill-not brought in 5.13%, Child ill- brought but not given vaccine in 5.13%, OPV only considered a vaccine was in 2.56%. This was similar to Laxmi Nidhi Pandey *et al* [14] - Reasons of partial immunization were postponed until another time (20.6%), child ill- not brought to the centre (19.9%), fear of side reactions (19.9%), no faith in immunization(16.2%), unaware of need of immunization (8.1%), unaware of need to return for 2nd and 3rd dose (5.1%), mother too busy (4.4%), polio was considered the only vaccine (2.2%), time of immunization inconvenient (1.5%), wrong ideas about immunization (0.7%), also lack of motivation (36.8%), lack of information (33.8%) and various obstacles (29.4%)

CONCLUSION

It can be concluded from our study that Full Immunization Coverage was (12-23 months) 85.65 %. The common Reasons for Partially /Non-immunized were Lack of Motivation by Health Worker followed by Lack of Information and Obstacles.

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