Research Article

# Immunization coverage among the children aged 12-23 months attending OPD at government medical college, Latur

Kendre V N[1*], Shekde Sachin[2]

[1]Assistant Professor, [2]PG, Department of Community Medicine, Government Medical College, Latur, Maharashtra, INDIA.
**Email:** varsharanimunde@yahoo.in, drsachinshekde@gmail.com

## Abstract

**Introduction:** The prevention of child mortality through immunization is one of the most cost-effective public health interventions in resource-poor settings. Immunization forms a critical component of primary health care and ensures nations health security. Although international agencies such as World Health Organization, UNICEF and now GAVI provide extensive support for immunization activities, the success depends on local realities and national policies. This is particularly true for a nation like India with population more than 1 billion and 25 million new births every year. **Aim and objective:** To assess immunization coverage levels of children aged 12-23 months in an immunization O.P.D at Government medical college, Latur. **Materials and Method:** Children in the age group 12-23 months coming to the Government Medical College, Latur for immunization or attending the other OPD services were included in the study. Detail information about the selected child was recorded on a pre-tested and pre-structured proforma. Information regarding head of the family, type of family, education and occupation of mother and father, socioeconomic status of the family was recorded on proforma. The child's immunization status was ascertained using the immunization cards. In children where the immunization cards were not available, mothers or responsible informants were enquired for the relevant history of immunization such as the age of administration, route of administration and site of administration of the vaccine or if Vitamin A dose was given or not. The collected data was entered in Microsoft excel and was analyzed and presented with appropriate graphs and tables. **Results:** In the present study total of 510 children were surveyed out of which 269 (52.7%) and 241 (47.3%) were males and females respectively. Among the study population 422(82.75%) children were fully immunized, 88(17.25%) were partially immunized. No unimmunized child was observed in the study. The percentage of coverage for BCG was found to be the highest and Measles being the lowest. The main reason for non vaccination of the child was child being ill and not brought to hospital (15.90%) and the child being to native place (15.90%) followed by postponed till another time (13.60%), unaware of need of immunization (12.50%), mother too busy (12.50%) and fear of side effects (10.22%). **Conclusion:** We conclude from our study that the Primary immunization coverage was 82.74% in children attending the Government Medical College, Latur. Hence the efforts to sustain the immunization coverage levels need to be maintained.

**Keywords:** Primary immunization coverage, partial immunization.

[*]**Address for Correspondence:**
Dr. Kendre V N, Assistant Professor, Community Medicine, Government Medical College, Latur, Maharashtra, INDIA.
**Email:** varsharanimunde@yahoo.in

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## INTRODUCTION

The prevention of child mortality through immunization is one of the most cost-effective public health interventions in resource-poor settings[1]. Immunization forms a critical component of primary health care and ensures nations health security. Although international agencies such as World Health Organization, UNICEF and now GAVI provide extensive support for immunization activities, the success depends on local realities and national policies. This is particularly true for a nation like India with population more than 1 billion and 25 million new births every year[2]. In 1985, Universal Immunization Programme was started in India with an

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aim of achieving at least 85% coverage of Primary immunization of infants with 3 doses of DPT and OPV, one dose of BCG and one dose of Measles by 1990[3]. As per National Family Health Survey (NFHS) III data, only 44 % of infants in India are fully immunized which is much less than desired goal of 85% and is slightly higher than the coverage as per NFHS II (42%) [4]. Primary immunization coverage in Maharashtra was 58.8 %( NFHS-3)[5]. As per the District Level Household Survey (DLHS) III Primary immunization coverage in Latur urban district was 82.6%[6]. In the present study we tried to estimate the immunization coverage among the children aged 12 -23 months and attending the OPD at government medical college, Latur.

## AIM AND OBJECTIVE

To assess immunization coverage levels of children aged 12-23 months in an immunization O.P.D at Government medical college, Latur.

## MATERIALS AND METHOD

The present cross sectional study was undertaken to determine the Immunization coverage of children aged 12-23 months attending O.P.D at Government Medical College, Latur. The duration of study was one year i.e. From December 2013 to November 2014. Children in the age group 12-23 months coming to the Government Medical College, Latur for immunization or attending the other OPD services were included in the study. Expecting primary immunization coverage by the end of twelve months, this age group of 12-23 months was considered for study. The informant was either of the parents. Thus a total of 510 children in the age group 12-23 months were enrolled in the study. Detail information about the selected child was recorded on a pre-tested and pre-structured proforma. Information regarding head of the family, type of family, education and occupation of mother and father, socioeconomic status of the family was recorded on proforma. The child's immunization status was ascertained using the immunization cards. In children where the immunization cards were not available, mothers or responsible informants were enquired for the relevant history of immunization such as the age of administration, route of administration and site of administration of the vaccine or if Vitamin A dose was given or not. Age of the child was ascertained by available record e.g. immunization card. In children where records were not available it was ascertained from history from the mother and using a calendar of local events that was prepared. In our study Hepatitis B vaccination information was documented and was considered under primary immunization. Every child was examined for presence of BCG scar on its left upper arm. The collected data was entered in Microsoft excel and was analyzed and presented with appropriate graphs and tables.

## RESULTS

**Table 1:** Distribution of the children according to age and sex

| Age (months) | Sex of the child | | Total |
|---|---|---|---|
| | Male No. (%) | Female No. (%) | |
| 12-14 | 87(48.9) | 91(51.1) | 178 |
| 15-17 | 67(54.5) | 56(45.5) | 123 |
| 18-20 | 53(55.2) | 43(44.8) | 96 |
| 21-23 | 62(54.9) | 51(45.1) | 113 |
| **Total** | **269(52.7)** | **241(47.3)** | **510** |

In the present study total of 510 children were surveyed out of which 269 (52.7%) and 241 (47.3%) were males and females respectively. It was found that majority of the children (178) were in the age group of 12-14 months.

**Table 2:** Distribution of the children according to socio-demographic features

| Variable | | Frequency (n=510) | Percentage (%) |
|---|---|---|---|
| Respondent | Mother | 469 | 92.0 |
| | Father | 41 | 8.0 |
| Religion | Hindu | 409 | 80.2 |
| | Muslim | 64 | 12.5 |
| | Buddhist | 37 | 7.3 |
| Socio- economic status | Lower middle | 56 | 10.98 |
| | Upper lower | 354 | 69.41 |
| | Lower | 100 | 19.60 |
| Family type | Nuclear families | 301 | 59.0 |
| | Joint families | 209 | 41.0 |
| Birth order | 1 | 212 | 41.6 |
| | 2 | 183 | 35.9 |
| | 3 | 88 | 17.3 |
| | >4 | 27 | 5.3 |
| Immunization card | Available | 322 | 63.1 |
| | Not available | 188 | 36.9 |

| | | | |
|---|---|---|---|
| Education of father | illiterate | 212 | 41.57 |
| | Primary | 46 | 9.02 |
| | Middle | 143 | 28.04 |
| | High school and above | 109 | 21.37 |
| Education of mother | illiterate | 237 | 46.47 |
| | Primary | 82 | 16.08 |
| | Middle | 151 | 29.61 |
| | High school and above | 40 | 7.84 |
| Occupation of father | Un skilled | 340 | 66.67 |
| | Semi skilled | 135 | 26.47 |
| | Skilled | 29 | 6.86 |
| Occupation of mother | Housewife | 484 | 94.90 |
| | Employed | 26 | 5.10 |

Majority i.e. 469(92%) informants were mothers, followed by fathers 41(8.0%). It was observed that majority of the children (80.2%) were Hindus followed by Muslims (12.5%) and Buddhist (7.3%). Modified Kuppuswamy classification was adopted for socioeconomic classification, 354(69.41%) belonged to upper lower class followed by 100(19.60%) lower and 56 (10.98%) belonged to lower middle class. It was observed that 301 (59.00%) families were nuclear families and 209(41.0%) were Joint families. Joint families include three generation families also. Two hundred and twelve children (41.6%) were of the first birth order and 183(32.9%) were of the second birth order, only 27(5.3%) were found to be of the birth order 4 and more. It was observed that 322(63.1%) parents had immunization card at the time of study. Hence the immunization status could be confirmed for these children whereas 36.9% parents were not having the immunization card with them. It was observed that father and mother of majority of the children were illiterate (41.57% and 46.47% respectively). 66.67% of fathers were unskilled workers whereas 26.47% were semiskilled and 6.86% were skilled workers. 94.90% mothers of the children were home makers.

**Table 3:** Distribution of the children according to immunization status

| Primary immunization status | Frequency | Percentage |
|---|---|---|
| Fully immunized | 422 | 82.75 |
| Partially immunized | 88 | 17.25 |
| **Total** | **510** | **100.0** |

Among the study population 422(82.75%) children were fully immunized, 88(17.25%) were partially immunized. No unimmunized child was observed in the study.

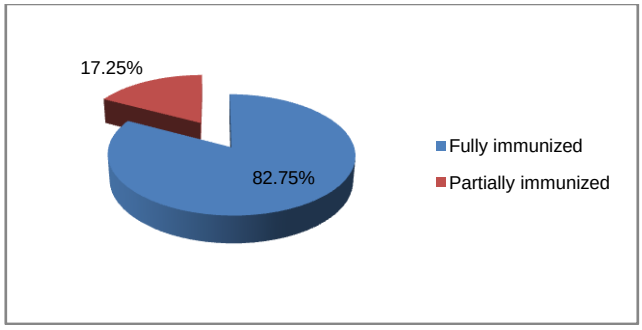



**Figure 1:** Distribution of the children according to immunization status

**Table 4:** Distribution of the children according to various vaccinations received

| Vaccine received | Frequency (n=510) | Percentage |
|---|---|---|
| BCG | 510 | 100 |
| OPV 0 | 510 | 100 |
| DPT 1 | 492 | 96.5 |
| OPV 1 | 492 | 96.5 |
| Hep B 1 | 492 | 96.5 |
| DPT 2 | 471 | 92.4 |
| OPV 2 | 471 | 92.4 |
| Hep B 2 | 471 | 92.4 |
| DPT 3 | 450 | 88.2 |
| OPV 3 | 450 | 88.2 |
| Hep B 3 | 450 | 88.2 |
| Measles | 421 | 82.5 |

It was evident that the percentage of coverage for BCG was found to be the highest and Measles being the lowest. It was found that the coverage of immunization decreases from BCG to Measles.

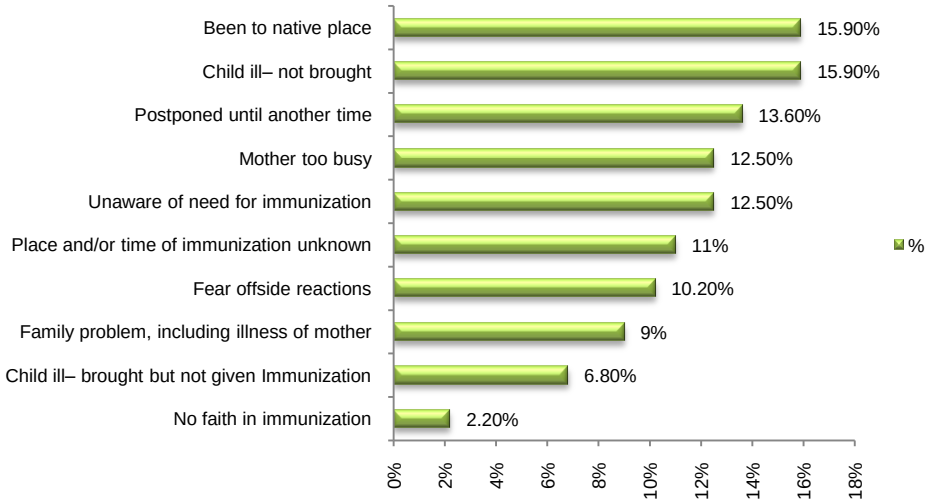
**Table 5:** Distribution of children according to Reasons for partial immunization

| Reason | | Frequency (n=88) | Percentage (%) |
|---|---|---|---|
| Lack of information | Unaware of need for immunization | 11 | 12.5 |
| | Place and/or time of immunization unknown | 1 | 11 |
| Lack of motivation | Fear of side effect | 9 | 10.2 |
| | Postponed until another time | 12 | 13.6 |

| | | | |
|---|---|---|---|
| Obstacles | No faith in immunization | 2 | 2.2 |
| | Mother too busy | 11 | 12.5 |
| | Family problem, including illness of mother | 8 | 9.0 |
| | Child ill– not brought | 14 | 15.9 |
| | Child ill– brought but not given Immunization | 6 | 6.8 |
| Others | Been to native place | 14 | 15.9 |

It was observed in our study the main reason for non vaccination of the child was child being ill and not brought to hospital (15.90%) and the child being to native place (15.90%) followed by postponed till another time (13.60%), unaware of need of immunization (12.50%), mother too busy (12.50%) and fear of side effects (10.22%).

**Distribution of children according to Reasons for partial immunization**




## DISCUSSION

The present study was conducted to in the government medical college, Latur to study the immunization coverage among the children between the age group of 12 – 23 month of age. Total of 510 children were enrolled in the study duration, out of which 269(52.7%) and 241(47.3%) were males and females respectively. Similar findings with respect to distribution of genders were found in a study by Kulkarni *et al*[7] showed that 55.4% of the children surveyed were male and 44.6% were females. In another study done by Mahyavanshi *et al*[8] showed that the percentage of male children surveyed were 57.62% and females were 42.38%. Total of 510 children were surveyed out of which 269(52.7%) and 241(47.3%) were males and females respectively. Similar findings with respect to distribution of genders were found in a study by Kulkarni *et al*[7] showed that 55.4% of the children surveyed were male and 44.6% were females. In another study done by Mahyavanshi *et al*[8] showed that the percentage of male children surveyed were 57.62% and females were 42.38%. It was observed that Majority i.e. 469(92%) informants were mothers, followed by fathers 41(8.0%). Mother's involvement in the upbringing of the child is high; most of them others were accompanying with the children when the study was done. Mothers had a better track of medical history of the child. It was observed that among the study population 82.75% children were fully immunized and 17.25% were partially immunized. No unimmunized child was observed in the study. Similar immunization coverage was observed in study done by Kulkarni SV *et al*[7] (88.07%), Dalal *et al*[9] (85.3%), Mahyavanshi DK *et al*[8] (70.47%). However as compared to our study, low coverage was observed by Baashir *et al*[10] (65.1%), Singh *et al*[11] (63.3%) and Yadav *et al*[12] (47.8%). When Immunization coverage for individual vaccine was studied it was observed that the coverage of immunization decreased from BCG to Measles. The percentage of coverage for BCG was found to be the highest (100%) and Measles being the least (82.5). It was found there was a decreased percentage of children who have received DPT 3 to measles due to the long time gap between DPT 3/OPV 3/HepB 3 and administration of measles vaccine that is given at the end of the ninth month. Similar trend was observed in studies by Chaudary *et al*[13], Chabra *et al*[14] and Bhatia *et al*[15].

Various reasons have been observed for partial immunization of the child. It was observed that child being ill and not brought to hospital in 15.90% children and the child being to native place in 15.90% followed by postponed till another time in 13.60%, unaware of need of immunization in 12.50%, mother too busy in 12.50% and fear of side effects in 10.22% children. Malini kar *et al*[16] stated that mothers lack of knowledge was the major cause of non immunization visit to native place, carelessness (11.7%), apprehensiveness due to sickness of child or a sibling were the reasons for partial immunization. In the study done by Mathew *et al*[17] the major reasons for non-immunization of the children were: migration to a native village (26.4%); domestic problems (9.6%); the immunization center was located too far from their home (9.6%); child was unwell when the vaccination was due (9%). About 12% of the mothers could not give any reasons for non-immunization. These variations in reasons for non immunization in different areas and different studies might probably be due to variations in the literacy, socio demographic variation in different geographical locations, availability of health facility, efficiency of immunization services, lack of supervision and health monitoring systems across the country. The parents also perceived that illness of the child was a contraindication for immunization of the child and hence the child did not receive immunization. Parents in their preoccupation to earn their livelihood postponed the immunization to suit their requirements and immunization of the children was not given priority.

## CONCLUSION

We conclude from our study that the Primary immunization coverage was 82.74% in children attending the Government Medical College, Latur. Hence the efforts to sustain the immunization coverage levels need to be maintained.

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