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Original Research Article

Assessment of immunisation status of infants in an urban area of North Karnataka

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ABSTRACT

Background: Still over 2 million children die each year from the six vaccine preventable diseases, some of which can be eradicated and all of which are preventable.
Methods: Cross sectional study done on 385 infants residing in Urban Health Centre, Khasbag, Karnataka, India.
Results: The study revealed that 373 (96.88%) of the infants were fully immunized, 9 (2.34%) were partially immunized and 3 (0.78%) were unimmunized. There were multiple reasons for partial and non-immunization. The main causes were unaware of need for immunization, unaware of need to return for 2nd and 3rd dose and wrong ideas about contraindications. Other causes were postponement of immunization for another time and the major obstacles were illness of child, mother too busy and family problems.
Conclusions: Child illness and lack of information are major causes of non-immunization and partial immunization.

Keywords: Immunization, Infants, UIP, Urban area

INTRODUCTION

Infectious diseases are major cause of morbidity and mortality in children. Immunization is one of the most cost-effective and easy method for their survival. In May 1974, the World Health Organization (WHO) officially launched a global immunization programme known as Expanded Programme of Immunization (EPI) to protect all the children of the world against six vaccine preventable diseases by the year 2000. The EPI was launched in India on 1978 and was renamed since 1985 as Universal Immunization Programme (UIP).[1] UIP has been able to prevent many deaths because of six diseases namely Polio, Measles, Tuberculosis, Whooping Cough, Tetanus and Diphtheria. Now, with the achievement of the 80% goal, the lives of about 300 million children are being saved annually, which means one child every 10 seconds. But in a developing country like India the sheer logistics of the number of the target population that stretches across geographically diverse regions make universal immunization of children a Herculean task.

In September 1990, World summit for children, was held and set a number of goals in the field of immunization, the goals include: the eradication of Poliomyelitis, reduction by 95% in the number of deaths from measles, currently the largest killer of children among vaccine preventable disease, the elimination of neonatal tetanus and achievement and maintenance of 90% immunization rate for the six diseases for infants.[2] Despite all the efforts by the governmental as well as non-governmental institutions for 100% immunization coverage, there are still pockets of low coverage areas present. So what could be the possible hindrances that hamper the success of

immunization programme: is it lack of information or lack of motivation or other obstacles. The present study was carried out to find out utilization of preventive child health service in the form of coverage of immunization and factors responsible for partial and non-immunization.

METHODS

The present cross-sectional study was carried out in Khasbag, which is an urban field practice area of the Department of Community Medicine, Jawaharlal Nehru Medical College, Belgaum, Karnataka, India.

Sample

Universal sample, the total population of Khasbag is 13,173, percentage of infants to the total population is 2.92%, therefore, n = 13173 × 2.92 ≅ 385.

Inclusion and exclusion criteria

All the infants, i.e. from age 1 month to 1 year, were included in the study. The exclusion criteria were age less than 1 month or greater than 1 year.

Data collection

House to house survey method was employed to assess the immunization status of the infants using Coverage Survey Household Form of Universal Immunization Programme as a proforma with some modifications. Informed consent was obtained from either of the parent. Immunization coverage of the child was assessed through checking of immunization card, presence of BCG scar and interview. If immunization card was not available, then information was sought from the mother or any other responsible or reliable person in the family of the child. Reasons for partial or non-immunization were also asked from mothers.

Data analysis

The data was analysed and expressed as percentages. Chi –square test was used to evaluate the association between variables.

RESULTS

Out of 385 children studied, 214 (55.58%) were males and 171 (44.42%) were females. Majority of the study participants were Hindus 341 (88.57%) and 44 (11.43%) were Muslims. The main occupation among infant's fathers was weaving 187 (48.56%). The other occupations noted in our study were: 55 (14.28%) labourers, 28 (7.26%) private employees, 44 (11.48%) government employees, 34 (8.82%) businessmen, etc. The BCG vaccination coverage in the study area was 382 (99.22%), 379 (98.44%) of the children had received all the three doses of DPT and OPV vaccine. On further analysis, 382 (99.22%) of the children had received 1ST dose of DPT and OPV, 381 (98.96%) of them had taken 2ND dose of DPT and OPV. Compared to other vaccines, measles vaccination had slightly less coverage 373 (96.88%). The study revealed that 373 (96.88%) of the children were fully immunized (Table 1). Only 161 (42.08%) of the mothers had maintained the immunization card and there were multiple reasons for partial immunization and non-immunization (Table 2). There was no statistically significant association between the immunization status and sex ($\chi 2$= 1.89, p =0.169), religion ($\chi 2$=2.25, p=0.133) and father's occupation ($\chi 2$=1.49, p=0.474) of the infant.

Table 1: Immunization status of study participants.

Immunization status	Number	Percentage
Fully immunized	373	96.88
Partially immunized	9	2.34
Unimmunized	3	0.78
Total	385	100

Table 2: Reasons for partial immunization and non-immunization.

Reasons	Number of infants
Lack of information	
Unaware of need for immunization	5
Unaware of need to return for 2nd-3rd dose	3
Wrong ideas about contraindications	2
Lack of motivation	
Postponed till another time	8
No faith in immunization	1
Obstacles	
Place of immunization too far to go	1
Time of immunization inconvenient	2
Mother too busy	4
Family problem including illness of mother	3
Child ill, not brought	6
Child ill, brought but not given	2

DISCUSSION

The study revealed that, out of 385 children studied, 55.58% were males and 44.42% were females. The main religion of the study area was Hinduism and the major occupation was weaving. In the present study 96.88% of the children were completely immunized, 2.34% were partially immunized and 0.78% was non-immunized. The BCG coverage was 99.22%, DPT 3 and OPV3 was 98.4% and Measles was 96.88% respectively. A Study on immunization status of children of India done by Indian Council of Medical Research (ICMR) showed that 63.3% children were completely immunized, 27.1% were partially immunized and 9.6% were non-immunized.[3] Whereas evaluation of primary immunization coverage of

infants under UIP in urban area of Bangalore city showed that 92.11% were completely immunized, 6.58% were partially immunized and 1.31% were non-immunized. BCG coverage was 98.68%, DPT and OPV 94.73% and measles was 92.11% respectively.[4] In our study 162 (42.08%) had their immunization card, whereas evaluation of immunization coverage in urban slums of Jamnagar city showed that 74.28% children had their immunization cards with them.[5]

In our study, there was no association between child's sex, religion and father's occupation with the immunization status of child. Whereas study on primary immunization status of children in slum areas of South Delhi undertaken by PGIMER shows no significant effect of sex of child, parent's occupation and religion to child's immunization status.[6] Evaluation of immunization coverage in urban slums of Jamnagar city and ICMR study showed that percentage of fully immunized children was more for male than female children. Partially immunized and un-immunized children were more females than males.[3,5] The main reasons for partial and non-immunization in our study were lack of information, motivation and obstacles. Study on immunization status of children in India done by ICMR revealed that main reason was lack of information[3] whereas evaluation of immunization status in urban slums of Jamnagar showed that the main reasons of partial and non-immunization were ignorance and inconvenience.[5] A study on evaluation of primary immunization coverage of infants under UIP in urban areas of Bangalore city reveals main reasons for dropouts and non-immunization being lack of information, motivation and lack of education and communication.[4]

Limitations of the study

Vitamin A solution supply was not available, so we could not evaluate that part and because of language barrier we were unable to take the complete details on literacy status of parents and socio-economic status.

CONCLUSION

Immunization status of 96.88% in Urban Health Centre, Khasbag is a significant achievement. Near total awareness about the immunization programme and availability of vaccine has led to this unprecedented success. It is evident from the study that multiple factors including lack of appropriate information and child illness are the main hurdles for 100% success of primary immunization.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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