Original Research Article

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20173835

Cross sectional study of immunization coverage in urban slum areas of Lucknow region

Priyanka Kesarwani¹, Nripendra Singh¹, S. S. Keshari^{2*}, Sumeet Dixit¹

¹Department of Community Medicine, ²Department of Pharmacology, TSM Medical College and Hospital, Lucknow, Uttar Pradesh, India

Received: 29 June 2017 Accepted: 28 July 2017

*Correspondence: Dr. S. S. Keshari,

E-mail: drsskeshari@gmail.com

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ABSTRACT

Background: Immunization plays an important role of child survival programmes all over the world. Recent data revealed that there are approximately 34 million children are not completely immunized and about 98% are residing in developing countries. The aims and objectives were to assess the immunization coverage and various sociodemographic factors affecting the immunization in urban slum areas of Lucknow.

Methods: A cross-sectional study was carried out at urban slums of Lucknow region. The target study population was of children aged 0-6 years. The immunization status data of the child was collected and analysed.

Results: Majority (79.8%) of children were in the age group of 16-23 months. Majority (79.4%) of children were completely immunized, while 20.6% were partially immunized. Significant association was found between educational status of mother and socioeconomic status of family with immunization status of children.

Conclusions: There was significant association was found between educational status of mother and socioeconomic status of family with immunization status of children. We observed in present study that there are some pockets in slum areas where immunization to children are very poor.

Keywords: Immunization, Children, Urban, Slum, Lucknow

INTRODUCTION

Immunization plays an important role of child survival programmes all over the world. Recent data revealed that there are approximately 34 million children are not completely immunized and about 98% are residing in developing countries. Globally, vaccine preventable diseases account for nearly 20% of all deaths occurring annually among children under five years of age, and immunization has a vital role to play in achieving the goals specified in the Millennium Declaration. The Expanded Program on Immunization (EPI) was introduced in 1978. The current immunization coverage still remains less than expected goal. According to NFHS-III, only 44% of the infants in India are fully

immunized, which is much lesser than the desired goal.⁴ Despite of increased accessibility of health care services in both urban and rural areas; utilization of health care services is still less in different sections of the society. Children of urban slum are highly exposed to outbreaks of vaccine preventable diseases due to high population density and continuous influx of infective agents in migratory population.⁵ Maternal and child health indicators among slum-dwellers revealed that their health is 2-3 times worse than the people living in better urban areas.⁶ The aim of present study was to assess the immunization coverage, and to identify the various sociodemographic factors affecting the immunization coverage in urban slum areas of Lucknow region.

METHODS

A cross-sectional study was conducted from November 2016- January 2017 in urban slums of Lucknow region. Before conducting the survey, verbal consent was taken from participants. The target study population in present study was children of aged 0-6 years. Age was confirmed by birth certificate or immunization card or, when it was not available, by asking the parents or guardian. This study was an interview based study. The data was collected from the parents or guardian of the child using a predesigned and pre-tested questionnaire regarding the immunization status of the child and other factors associated with it. Immunization with BCG was confirmed by checking for the scar on the left upper arm, while for other vaccines, the immunization card was checked. We considered immunization status as following:

- 1. *Complete immunization*: Defined as a child have received one dose of BCG, one dose of Measles, 3 doses of DPT, OPV, Hepatitis B Vaccine within the age of one year (excluding OPV-0).
- 2. Partial/incomplete immunization: Defined as a child who is not fully immunized but has received at least one dose of any vaccine within the age of one year
- 3. *Unimmunized children*: Defined as a child who has not received any vaccine as per National immunization schedule within one year of age.⁷

Data was collected and computed in Microsoft Excel sheet and analysed using software SPSS version 17 and Open Epi version 2.3. Test applied to find out the statistical significance was Chi-square test.

RESULTS

In the present study, out of 549 children; there were 286 (52.1%) boys and 263 (47.9%) girls. Majority (79.8%) of children were in the age group of 16-23 months (Table 1). Majority (79.4%) of children were completely immunized, and 20.6% were partially immunized (Table 2). Most of the parents in present study had primary and high school education. 41.3% of families under study were from class II (BG Prasad Social Classification Scale-2017). Among the partially immunized children, 61.1% did not receive OPV and Hep B, and 20.4% each did not receive either only OPV or Hep B. In present study we observed that the most common reasons for not immunizing the child were: busy schedule of mother (43.4%), family problem, including illness of the mother (20.3%), lack of awareness about need of 2nd and 3rd dose (8.8%) (Table 3). Statistically significant association was observed between educational status of mother and socioeconomic status of family with immunization status of children (Table 4 and 5).

Table 1: Distribution of the children according to the age in study population.

Age of the children	N	Percentage (%)
0-6 months	6	1.1
7-12 months	5	0.9
13-15months	72	13.1
16-23 months	438	79.8
24 months and above	28	5.1

Table 2: Distribution of children according to age group and immunization status.

Immunization status	N	Percentage (%)
Complete	441	79.4
Incomplete/partial	113	20.6
Unimmunised	0	0

Table 3: Factors responsible for partial/incomplete immunization.

Factors for partial/incomplete immunization	N	Percentage (%)
Lack of awareness about immunization	3	2.6
Lack of awareness about 2nd and 3rd dose	10	8.8
Religious belief	8	7.1
Fear of side effect of vaccination	6	5.3
Busy schedule of mother	49	43.4
Family problem	23	20.3
Child illness	9	8.0
Child not vaccinated at immunization centre due to illness	5	4.4

Table 4: Distribution of children according to educational status of mother and immunization status.

Educational status of mother	Partially Immunized (N=113) (%)	Fully Immunized (N=436) (%)	Total	Test of Significance
Illiterate	6 (10.5)	51 (89.5)	57	
Primary school	63 (55.7)	50 (44.2)	113	χ2=109.021
High school	26 (14.1)	159 (86.9)	185	df=3
Intermediate and above	18 (9.3)	176 (90.7)	194	p<0.001
Total	113	436	549	

Table 5: Distribution of children according to socio-economic status and immunization status.

Socioeconomic status of family	Partially immunized (%)	Fully immunized (%)	Total	Test of significance
Class I	22 (20.7)	84 (79.2)	106	2-0.010
Class II	34 (15.0)	193 (85.0)	227	$\chi 2=8.819$ df=2
Class III	57 (26.4)	159 (73.6)	216	- $01=2 p<0.05$
Total	113	436	549	p<0.03

DISCUSSION

Immunization is one of the most cost effective public health interventions, which is directly or indirectly responsible to prevent the bulk of mortalities in underfives.⁸ Immunization reduces the morbidity and mortality in children. Present study was carried out to find out the factors responsible for partial immunization. In the present study, we observed that in case of partial immunization, most of mothers (40.6%) were either illiterate or having education up to primary school. This result was in accordance to previous studies.^{7,9} In present study, we observed that most of the children were from class II and III. This was in accordance to previous study done by Baliga et al.8

In present study, most of children (79.4%) were completely immunized, this data is slightly lower than the expected goal of 85% coverage. Reports of NFHS-III revealed that only 54.7% of the urban children are fully vaccinated. 10 In present study, we observed that 20.6% children were partially immunized and this was in accordance to previous studies.^{8,11} In present study, we observed that most common reasons for nonimmunization of child were: busy schedule of mother (43.4%) followed by family problem (20.3%). This was in accordance to previous studies. 4,9,11,12 Statistically significant association was observed between the educational status of mother and socioeconomic status of families of children regarding the immunization status of children. Previous studies revealed that there was significant association of mother's education, religion, socioeconomic status in respect to the immunization status of children.^{7,9}

CONCLUSION

In present study, most (79.4%) of children were completely immunized. There was significant association between educational status of mother and socioeconomic status of family with immunization status of children. In present study, we observed that there were some pockets in slum areas where immunization to children was very poor. We have opinion that there should be re-review of current strategies of immunization in country like India to ensure complete immunization coverage to each and every child.

Funding: No funding sources Conflict of interest: None declared

Ethical approval: The study was approved by the

Institutional Ethics Committee

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Cite this article as: Kesarwani P, Singh N, Keshari SS, Dixit S. Cross sectional study of immunization coverage in urban slum areas of Lucknow region. Int J Community Med Public Health 2017;4:3310-3.