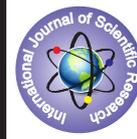


## A study to assess the immunization status of children 12 to 23 months and its determinants in urban slum area of Guwahati



### Medicine

#### KEYWORDS:

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### ABSTRACT

**Background:** Immunization against childhood diseases is one of the most important public health interventions against major childhood diseases. This effective intervention which has saved millions of lives of children. **Materials and methods:** A cross sectional study was conducted among 125 children of 12 to 23 months old in the slum area under Urban Health Training Centre from October to December 2015. Data analysis was done using SPSS 16.0. A p value of < 0.05 was considered statistically significant. **Results:** Out of 125 children, 76.8% were fully immunized and 23.2% partially immunized. The most common reason for partial immunization was fear of side effects. Partial immunization was significantly associated with female gender and Muslim religion. **Conclusion:** Continuous IEC activities to promote awareness on beneficial effects of immunization along with interpersonal communication is necessary to improve immunization coverage.

Immunization is considered as a core component of the human right to health along with individual, community and governmental responsibility. Vaccination prevents an estimated 2.5 million deaths every year. Children who are immunized have a better opportunity to thrive and a better chance of realizing their full potential.<sup>[1]</sup> Immunization against childhood diseases is one of the most cost effective public health interventions available and has saved the lives of millions of children.<sup>[2]</sup>

Though the prevalence of fully immunized children in Assam has improved from 31.4% (NFHS 3)<sup>[3]</sup> to 47.1% (NFHS 4)<sup>[4]</sup> but it has remained grossly underutilized which definitely calls for further studies to find out the factors contributing to its underutilization. Coincidentally, Assam has got a significantly high infant mortality rate of 49 per 1000 live births which is the second highest in the country.<sup>[5]</sup> Therefore, achieving and maintaining high level of immunization among children is necessary for the control and elimination of the major preventable diseases of childhood which can definitely curb the infant mortality in the state.

This study is, therefore, carried out with the objectives to assess the immunization status of 12 to 23 months old children in the slum area under Urban Health Training Centre, Guwahati city and to explore the reasons of missed immunization and identify the factors influencing them.

### Materials and methods

A cross sectional study was conducted in the slum area under Urban Health Training Centre of Gauhati Medical College, Guwahati on children aged 12 – 23 months from October to December 2015. We used the NFHS 3 data to determine the sample size as it was available during the study period. Taking the prevalence of fully immunized children in Assam as 31.4% according to NHFS 3, allowable error, L = 20% of P, and the number of 12 to 23 months old children in the urban slum areas under UHTC, N = 279, the formula  $(4PQ/L^2 + 4PQ/N)$  has been used to determine the sample size which came out to be 124 and it was rounded off to 125.

A sampling frame of the eligible children was made followed by their selection by simple random sampling method. Information was collected on sociodemographic factors, immunization status and the reasons for partial or non immunization of the children. The mothers of the children were interviewed by using a structured schedule after obtaining their informed consent. The immunization cards of the children were tracked to know about the details of immunization status. The socioeconomic status was ascertained by modified BG Prasad classification.

Data collected was entered in Microsoft excel and data analysis was done using INSTAT Graph pad. Categorical variables were

summarized using frequency and percentages. The chi-square test was used for association between categorical variables. A p value of < 0.05 was considered statistically significant.

The child was considered as **fully immunized** if he/she had received BCG, three doses of OPV, three doses of Pentavalent vaccine and one dose of Measles vaccine by his / her first birthday. Children who missed any one of the vaccines out of the above mentioned primary vaccines were described as **partially immunized**.

### RESULTS:-

A total of 125 children were enrolled in the study, out of which 71 were males and 54 were females. 65.6% children were Hindus and 34.4% were Muslims. 51.2% of the children were from nuclear family while the remaining 48.8% children lived in a joint family. With regard to literacy status of the parents, 56.8% of the fathers and 48.8% of the mothers were literate. Majority of the children, i.e 40% belonged to SES Class IV, 28.8% belonged to Class II, 28% belonged to class III and 3.2% were from Class I. { Table 1 }

**Table 1 :** Sociodemographic characteristics of the children between 12 – 23 months

Socio demographic characteristics	No (125)	%
<b>Gender</b>	71	56.8
Male	54	43.2
Female		
<b>Type of family</b>		51.2
Nuclear	64	48.8
Joint	61	
<b>Religion</b>		65.6
Hindu	82	34.4
Muslim	43	
<b>Literacy of father</b>		56.8
Literate	71	43.2
Illiterate	54	
<b>Literacy of mother</b>		48.8
Literate	61	51.2
Illiterate	64	
<b>SES</b>		
Class I	4	3.2
Class II	36	28.8
Class III	35	28.0
Class IV	50	40.0

The immunization status was recorded from the immunization cards . Table 2 shows the immunization status of the children . Out of 125 children 76.8% were fully immunized and 23.2% were partially immunized .

**TABLE 2 :** Immunization status of the children between 12 to 23 months

Immunization status	No ( 125)	%
Fully immunized	96	76.8
Partially immunized	29	23.2

Table 3 depicts the reasons of partial immunization . Majority ( 51.7%) were partially immunized due to fear of side effects and 20.6% did not receive full immunization as they were out of station . The remaining children were deprived of full immunization due to lack of awareness of the parents and illness .

**Table 3 :** Reasons for partial immunization of the children according to respondents

Reasons of partial immunization	No (29)	%
Fear of side effects	15	51.7
Out of station	6	20.7
Lack of awareness	4	13.8
Illness of the child	4	13.8

Table 4 discusses the association of various sociodemographic factors with partial immunization . In our study , female child and Muslim religion were significantly associated with partial immunization .

**Table 4 :** Relation of immunization status with various socio demographic factors

	Fully immunized No (%)	Partially immunized No (%)	P value
Gender	61 (85.9)	10 (14.1)	0.0106
Male	35 (64.8)	19 (35.2)	
Female			
Maternal literacy	42 (68.9)	19 (31.1)	0.0653
Literate	54 (84.4)	10 (15.6)	
Illiterate			
Religion	73 (89)	9 (11)	<0.0001
Hindu	23 (53.5)	20 (46.5)	
Muslim			
SES	4 (100)	0 (0)	0.4059
Class I	24 (66.7)	12 (33.3)	
Class II	25 (71.4)	10 (28.6)	
Class III	39 (78.0)	11 (22.0)	
Class IV			

**DISCUSSION**

The present study found the prevalence of fully immunized children to be 76.8% which is higher than the both the NFHS 3 and NFHS 4 findings of Assam, i.e. 31.4% and 47.1% respectively. [3,4] Our study finding also showed a better coverage upon comparison with the NFHS 4 finding in urban areas of Assam which is 70.9 % . [4] In contrast to other studies , the present study finding is comparable to that of Gupta P et al conducted in Lucknow where the prevalence was 74.7% . [6] The present study showed a much better coverage than other findings reported by Chaturvedi R et al [7] in Kanpur, Phukan RK et al [8] in upper Assam and Baghel PS et al [9] (52.38%, 62.2 % and 64.17% respectively)

The current study also found that 23.2% of children were partially

immunized and similar findings were reported by Baghel PS et al [9] , Chaturvedi R et al [7] and Wadgave HV et al [10] . One of the salient features of our study was that none of the children was found to be non immunized unlike other study by Chaturvedi R et al [7] , Baghel PS et al [9] .

In the present study , the most common reason for partial immunization was fear of side effects ( 51.7%) which is similar to other studies reported by Yadav S et al [11] and Ray et al [12] . The other reasons mentioned for partial immunization in the present study were travelling out of station at the time of immunization ( 20.6%) , lack of awareness of subsequent doses and illness of the child ( 13.7%) . In a different study by Baghel PS et al [9] , the most common reasons cited for partial immunization were illness of the child followed by fear of side effects and family problems . Gupta PK et al [13] reported that inconvenient timing of immunization was the most common cause of partial immunization followed by illness of the child .

In the present study , we found that partial immunization was significantly associated with female gender This highlights that female children are still marginalized and deprived of basic health care . Our study finding is in agreement with that of Yadav S et al [11] , but Baghel PS et al [9] and Wadgave HV et al [10] did not report any such association . A significant proportion of children belonging to Muslim religion , i.e 47% was found to be partially immunized which proved to be an important determinant . Similar finding was also documented in a study conducted by Nath B et al [14] in Lucknow and Kulkarni SV et al [15] . However , maternal literacy and socio economic status did not influence the immunization status of the children in the present study .

**Conclusion**

The present study reveals a relatively better coverage of immunized children but it still lags behind the ideal target . This necessitates the need of continuous IEC activities to promote further awareness about the beneficial effects of immunization . Besides this , interpersonal communication also needs attention to do away with the myths and fears regarding side effects of vaccination .

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