

# Social Determinants of Child Immunization in Urban Slums in Delhi

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**Abstract**—Immunization against childhood disease is one of the most cost effective public health interventions available and it prevents the lives of millions of children from suffering lifelong disability. As immunization services are integral part of RCH program, the utilization of these service facilities among the slum residents has been resulted from the critical and complex relationship between the social determinants and prevailing RCH practices in the slum settings. At the same time it has been evident that the killer diseases susceptible to the children can easily be prevented through proper vaccination. The main objective of this study is to assess the utilization pattern of immunization services provided to the children below 2 years of age in slum area of South Delhi district. On this account, data were collected from 310 respondents having children zero to two years during one year reference period. Collected data were analyzed using SPSS version 20. According to the findings 96.8 per cent children below the age of zero to two years received immunization. 71.3% children were fully immunized. The rate of full immunization was varied with the social and occupational status of the respondents and their husbands. The rate of full immunization is higher among forward social class compared to SC, ST, and others. For example, all dosages of vaccines were 93.3 per cent among the forward social class respondents whereas the corresponding figures for the OBC and SC were the 79.3 per cent and 66.2 per cent, respectively. The rate of full immunization was also varied with educational status of the respondents as well as their husband's education. It means that social determinants were playing important role of utilization of child immunization in the sample slum in Delhi.

**Keywords:** Utilization of immunization services, Slum, Social Determinants etc

## 1. INTRODUCTION

The poor health conditions among slum dwellers that comprise a large section of our growing cities need to be addressed on a priority basis. The health and productivity of this section of the population are vital as they play an imperative role in the economic activities of cities which in turn contribute to the economic growth of the country. In fact, Government has acknowledged the non-availability as well as substantial under utilization of available primary health care facilities in urban areas along with an overcrowding at secondary and tertiary care centers. Maternal and Child Health

services to the urban poor have been recognized as important thrust area by the government under the National Population Policy-2000, National Health Policy-2002, RCH II and the Tenth Five Year Plan.

For maternal and child health various health facilities of deferent levels have been made available and accessible in Delhi but the coverage of immunization service has not been accomplished as per the objectives and targets set in the RCH program. As immunization services are integral part of RCH program, the utilization of these service facilities among the slum residents has been resulted from the critical and complex relationship between the social dynamics and prevailing RCH practices in the slum settings. The NFHS data showed an increasing trend in “fully immunized” children from 36.1% (1992-93) to 51.8% in 2005-06, Delhi slum. (NFHS-3)

Although immunization coverage has increased substantially in recent years, large numbers of slum dwelling children remain incompletely immunized. (WHO 2003). The urban slum dwellers suffer from adverse health outcomes which do not get reflected in commonly available health statistics. Most sources of health information which provide for urban desegregation mask the inequalities which exist within the various economic groups. This study was formulated with the objective of assessing the utilization pattern of immunization services provided to the children below 2 years of age in slum area of south Delhi.

## 2. MATERIAL AND METHODS

The objective of this paper was to assess the utilization pattern of Immunization services provided to the children below 2 years of age in slum of south Delhi. The study was conducted in two urban slum clusters i.e., Indira Camp and Sunlight Colony II randomly selected out of 8 clusters that were legally notified as slums in the South Delhi District having about 50,046 populations.

The sample size of the study consisted of 400 respondents which included both pregnant and lactating mothers having zero to 2 years children during one year reference period. On

this account data have been made available from 310 responses of the respondents having zero to 2 years children during one year reference period. These respondents were randomly selected for in-depth interview. The techniques employed of data collection were mainly interview and observation. The data was analyzed using SPSS and Microsoft Office software. Cross tabulation and simple percentage had been used for data analysis and presentation of results. The results of the study have been presented below.

### 3. RESULTS

The present paper focuses on child immunization in order to prevent morbidity and mortality in selected slums area of Delhi city. Some of the killer diseases susceptible to the children can easily be tackled through proper vaccination at proper time frame. Utilization of immunization services among the slum dweller shown in table 1.

As per table 1, 96.8 % children below zero to 2 years have received immunization, only 3.2% mothers have said no about the immunization of their children below 2 years of age. It further shows the linkage between the accesses to child immunization facilities with the education level of mothers. As observed, 100% immunization has been reported among the mothers whose education is higher secondary and above whereas illiterate mothers reported only 93.2 percentage of immunization rate. It means that for fulfillment of the target of 100% immunizations the Government has emphasized on the higher education among the slums dwellers in urban India. There is no significant correlation between the rate of immunization and the social and the occupational status of the respondents.

**Table 1: Immunization service utilization among the slum dweller\***

Aspects	Levels	Yes		No		Total	
		N	%	N	%	N	%
Household Income (Rs.)	Below 5000	24	92.3	2	7.7	26	100
	5000-10000	184	97.4	5	2.6	189	100
	10000-15000	45	97.8	1	2.2	46	100
	Above 15000	47	95.9	2	4.1	49	100
	Total	300	96.8	10	3.2	310	100
Education of Respondent	Illiterate	69	93.2	5	6.8	74	100
	Primary	107	98.2	2	1.8	109	100
	Middle	45	97.8	1	2.2	46	100
	Secondary	42	95.5	2	4.5	44	100
	Sr.Secondary and above	37	100	0	0	37	100
	Total	300	96.8	10	3.2	310	100
Education of Husband	Illiterate	27	87.1	4	12.9	31	100
	Primary	70	93.3	5	6.7	75	100
	Middle	60	98.4	1	1.6	61	100
	Secondary	95	100	0	0	95	100
	Sr. Secondary	48	100	0	0	48	100
	Total	300	96.8	10	3.2	310	100

The present study also tries to correlates the household educational Status with the rate of utilization of child immunization services. Surprisingly, no specific correlation is found between the household educational status (education of respondents and husbands) and child immunization rate in the sample slums. It represents that successfulness of immunization of children does not depend much on the educational status of the household/respondents. Perhaps, immunization programme of Govt. has been successful among the surveyed slums due to well functioning of grass root level health workers. Therefore, immunization programme has been universalized irrespective of the educational status of the household. It is because of higher degree of awareness regarding immunization programme among the slum dwellers.

Table 2 shows that there is no specific relationship between the caste background as social status of households and child immunization rate among the surveyed slums. As observed 100% general castes, 96.3% OBCs, 96.5% SCs, and 100% STs have utilized the immunization services for their children in the slum areas. It means that social status of the respondent is not the determinant of utilization of child immunization in the sample slum in Delhi.

**Table 2: Immunization service utilization between caste and occupational groups\***

Aspects	Level	Immunizations for children					
		Yes		No		Total	
		N	%	N	%	N	%
Caste	General	15	100	0	0	15	100
	OBC	79	96.3	3	3.7	82	100
	SC	194	96.5	7	3.5	201	100
	ST	12	100	0	0	12	100
	Total	300	96.8	10	3.2	310	100
Occupation of Respondent	House wife	221	97.8	5	2.2	226	100
	Private Service	6	100	0	0	6	100
	Domestic Servant	64	92.8	5	7.2	69	100
	Petty Business	9	100	0	0	9	100
	Total	300	96.8	10	3.2	310	100

On the contrary, household employment status is found to be correlated with the utilization rate of child immunization services. Those respondents are doing job either in private sector (100%) or petty business (100%) have demonstrated cent percent utilization rate of child immunization compared to the other professions. If the respondents who are housewives (97.8%) or domestic servant (92.8%) are less likely to utilize child immunization services in the slums.

Table 3 indicates the extent of full immunization (all dosages of vaccines) across the household background characteristics. It is found that 71.3 percent immunization cases were full dosages in the selected sample slums in Delhi. The level of fully immunization also varies with the economic class of the households. It is found that the occurrence of full

immunization is relatively higher among the richer households as compared to others, For example, the highest income groups reported 75.5 percent full immunization whereas the poorest classes reported only 53.8%. It means the rate of full immunization depends on health care infrastructure and manpower especially in the public sector. The rate of full immunization also varies with educational status of the respondents. It is noted the full immunization rate is 100 percent among the respondents those who are higher educated that is whose level of education is senior secondary or above. It represents that the level education of the respondent mothers is highly correlated with the rate full child immunization in selected urban slums.

The rate of full immunization also varies with the social and occupational status of the respondent. The rate of full immunization is higher among forward social class compared to SC, ST and others. For example, all dosages of vaccines were 93.3 percent among the general respondents where the corresponding figures for the OBC and SC are the 79.3% and 66.2% respectively. It represents that the rate of immunization is lower among the backward social class in Delhi Slums. It is also found that the rate of full immunization is higher among the respondent those who are engaged in private job compared to the housewife and the domestic servants.

**Table 3: Steps followed for availing the immunization services\***

Aspects	Levels	All (1st, 2nd, 3 <sup>rd</sup> ) dosages of vaccination for the children					
		Yes		No		Total	
		N	%	N	%	N	%
Household Income (Rs.)	Below 5000	14	53.8	12	46.2	26	100
	5000-10000	135	71.4	54	28.6	189	100
	10000-15000	35	76.1	11	23.9	46	100
	Above 15000	37	75.5	12	24.5	49	100
	Total	221	71.3	89	28.7	310	100
Education of Respondent	Illiterate	28	37.8	46	62.2	74	100
	Primary	75	68.8	34	31.2	109	100
	Middle	40	87.0	6	13.0	46	100
	Secondary	41	93.2	3	6.8	44	100
	Sr.Secondary and above	37	100	0	0	37	100
	Total	221	71.3	89	28.7	310	100
Caste	General	14	93.3	1	6.7	15	100
	OBC	65	79.3	17	20.7	82	100
	SC	133	66.2	68	33.8	201	100
	ST	9	75	3	25	12	100
	Total	221	71.3	89	28.7	310	100
Occupation of Respondent	House wife	167	73.9	59	26.1	226	100
	Private Service	5	83.3	1	16.7	6	100
	Domestic Servant	40	58	29	42	69	100
	Petty Business	9	100	0	0	9	100
	Total	221	71.3	89	28.7	310	100

As per Table 4 it is found that only 13.3% mothers have received immunization for their children from private health

institutions but 86.7% mothers have immunized their children by ANMs/AWWs/Doctors from government health institutions. 49.3% of immunization services provided by local ANMs. But, the slum were provided by AWWs (16.8), Government doctor/Hospitals (20.8) and 13.3% NGOs/private doctor which also played important role for immunization services in slums. The level of utilization of immunization services varies with the household background characteristics such as family income, education, employment status of the respondent.

**Table 4: Immunization Services received by slum dwellers from the health care providers\***

Aspects	Level	Local ANMs	Local AWWs and ANMs	Doctors of Govt. hospital	Doctors of Private hospital/ others
		%	%	%	%
Household Income	Below Rs. 5000	26.3	18.4	21.1	10.2
	5000-10000	52.1	15.8	20.8	11.3
	10000-15000	58.7	9.5	20.6	11.1
	Above 15000	42.4	27.1	20.3	34.2
	Total	49.3	16.8	20.8	13.3
Education of Respondent	Illiterate	48.9	8.5	20.2	22.3
	Primary	48	17.6	18.9	15.5
	Middle	56.9	15.7	19.6	7.8
	Secondary	56.4	20.0	14.5	9.1
	Sr.Secondary and above	38.5	26.9	34.6	0
Total	49.3	16.8	20.8	13.3	
Caste	General	45.5	13.6	36.4	4.5
	OBC	48.1	17.6	29.6	4.6
	SC	49.8	17.0	15.8	17.4
	ST	52.9	11.8	17.6	17.6
	Total	49.3	16.8	20.8	13.3
Occupation of Respondent	House wife	49.8	18.7	21.1	10.4
	Private Service	33.3	16.7	50	0
	Domestic Servant	45.7	11.1	18.5	24.7
	Petty Business	64.3	7.1	14.3	14.3
	Total	49.3	16.8	20.8	13.3

As per information collected from the field, 26.3% poor respondents have received immunization services that are provided by local ANMs while the correspondent figure for the richer section is 42.4%. It is also found that 48.9% respondents belonging to illiterate section expressed their views that local ANMs have provided the immunization services. The corresponding figure for the higher educated respondents is only 38.5%.

The caste of the respondents and the expression of views over the type of health providers are not significantly correlated. As far as employment characteristics are concerned it is noted 64.3% respondents have pointed out that local ANMs are the main providers of immunization services. On the other hand 45.7% respondents have recorded their views that locals

ANMs are the main providers of immunization in the sample slum. 50% respondents those who are from private service backgrounds have stated about the doctors of government hospital for the major contributors of immunization services. However, most of the respondents expressed their opinion that they have received immunization services from the local level health workers such as ANMs and AWW who are the main providers of immunization services in the surveyed slums in Delhi.

#### 4. DISCUSSION

Study reveals that 96.8 % children below zero to 2 years have received immunization, only 3.2% mothers have said no about the immunization of their children below 2 years of age. As observed, 100% immunization has been reported among the mothers having higher secondary and above education levels whereas illiterate mothers have reported only 93.2% for the same.

There is no significant correlation between the rate of immunization and the social and the occupational status of the respondents. Only 13.3% mothers have received immunization for their children from private health institutions but 86.7% mothers have immunized their children by ANMs/AWWs/Doctors from government health institutions. 71.3% mother have stated all (1st, 2nd & 3rd ) dosages of vaccination for their children while 28.7% mothers have not pointed out all dosages of vaccination for their children. Similar finding of 69% have been found in a study of Kar M, et al, (2001), 60% in the study by Agarwal S. et.al, (2005), 61.9% full immunization in the study of Chaudhary et.al. (2010), NFSH III data showed 51.7 % fully immunization in Delhi Slum. It means present study area has got better percentage of full immunization coverage than NFSH-3(2005-06) data. However, higher coverage of full immunization has been reported by various other slum studies of Yadav S et.al.(2006),73.33%, Punith K et.al.(2008), 84.09%, and Chopra H et.al.(2007) 93.25%).

The rate of full immunization also varies with educational status of the respondents and their husbands. It has been observed that the full immunization of the children have been achieved up to 100 percent among the respondents having higher education that is those whose level of education is up to senior secondary or above. Moreover, it is found that higher the education level of husband; higher is the mother's preference for existing immunization services available in the locality for child's better health. The same are close association between parental educations has also been documented by other studies of Yadav RJ, Singh P, (2004) and Sreedhar M, et al. (2013). Thus, the study finding reveals that the level education of the respondents and their husband is highly correlated with the rate of full child immunization in selected urban slums in Delhi.

#### 5. CONCLUSION AND RECOMMENDATIONS

Despite immunization coverage has increased over the years, still the gap exists with the present levels far behind the target of MGD 4 and thus the vaccine preventable diseases persist to a large degree in the community. There is an urgent need to strengthen the existing immunization programme among the marginalized communities like urban slum dwellers. More awareness should be generated among the people living in urban slums to immunize their children and to prevent the morbidity and mortality from VPDs. IEC activities should be directed towards further improving the immunization status of the slum community.

#### 6. ACKNOWLEDGEMENTS

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