



punjab geographer



A JOURNAL OF THE APG, INDIA AND ISPER INDIA, PANCHKULA

VOLUME 13

ISSN- 0973-3485

OCTOBER 2017



STATUS OF CHILD IMMUNIZATION IN SLUMS OF HISAR CITY

Kiran Bala
S.P. Kaushik

Abstract

The infectious diseases are the chief cause of morbidity and mortality among children in India. One of the most cost effective and easy methods to control such diseases is the child immunization. Immunization also prevents many more millions from suffering unbearable illness and lifelong disability. Achieving and maintaining high level of immunization among children is necessary for the control and elimination of the major diseases of childhood. Therefore, the present study has been conducted with the aim of analyzing the immunization coverage among children aged 0-5 years and the various socio-demographic factors associated with immunization in slum areas of Hisar city. The study reveals that only two third of the children (65.70 per cent) were fully immunized. Immunization coverage was high for BCG (94.20 per cent) and lowest for measles (74.67 per cent) vaccine. Type of family, level of education and level of income were found to be significantly associated with the immunization status of the children residing in slum areas of Hisar city.

Introduction

Immunization of children against major diseases is very essential and sacred responsibility of the parents. However, it has been found that despite best efforts on the part of the government, full immunization could not be achieved. In a developing country like India, the sheer logistics of the numbers of the target population that stretches across geographically diverse regions make universal immunization of children a herculean task (Sharma and Bhasin, 2008). Infectious diseases are major cause of morbidity and mortality among children. One of the most cost effective and easy methods for the child survival is immunization (Yadav et al., 2006).

Universal Immunization programme was started in India in 1985. It is a cost effective method against vaccine preventable diseases

(Park, 2015). According to the National Family Health Survey conducted in 2005–2006, only 57.60 per cent of children in the urban area were fully immunized (NFHS-3, 2005-06). The Government of India launched Mission Indradhanush in December 2014 to cover children who are unvaccinated or partially vaccinated against the preventable diseases, like diphtheria, whooping cough, tetanus, polio, tuberculosis, measles, and hepatitis B. The goal is to vaccinate all under-fives by the year 2020 (Park, 2015). Despite all the efforts put by the governmental and non-governmental institutes for universal immunization coverage, there are still pockets of low coverage areas (UNICEF, 1990). Urban slums constitute one of the high risk areas for the vaccine preventable diseases (Lodha et al., 2000). A child who had received all doses of vaccine for

which he/she was eligible by the age as per the National Immunization Schedule of India is considered fully immunized, while a child who have received only two or three doses of vaccine for his/her age is considered as partially immunized. Un-immunized is that child who had not yet received any vaccine for the age, though eligible.

Objectives of the Study

Major objectives of the present study are:

- to find out the status of immunization among the slum children aged 0-5 years of Hisar City, and
- to find out various socio-demographic correlates of immunization in slum community of Hisar city.

Study Area

Located at 29° 09' North latitude and 75° 43' East latitude (Fig. 1), Hisar city is one of the industrially developed cities of Haryana with home of many workers working in steel works, textile mills, oil mills etc. The city has an area of more than 50 km² (Kaushik et al., 2002) with a population of 3,01,249 persons according to Census of India, 2011. The approximate population of slum localities is 52,426 persons as notified by the Municipal Corporation, Hisar city. About one-tenth (10.25 per cent) of the total population of Hisar city lives in slums clusters. The slums are characterized by poor sanitation, poverty, overcrowding, congested living and a lack of personal hygiene.

Material and Methods

The study is based on primary data collected from 21 slum clusters of Hisar city in 2013-2014. A pre-designed and pre-tested household schedule is used to elicit relevant information regarding child immunization and socio-demographic parameters of the study

area. A total number of 600 sample households have been selected through proportionate random sampling technique from each cluster covering 379 children of 0-5 years of age group, out of which 192 are boys and 187 are girls. All the data generated were analyzed by using SPSS software. Simple proportions were calculated and statistical tests like chi square and F test were applied to know the level of significance.

Results and Discussion

Demographic and Socio-economic Characteristics of Households

Table 1 depicts the demographic characteristics of the population residing in slums of Hisar city. Majority of the households (99.21 per cent) belong to Hindu religion, while remaining 0.53 per cent are Muslim and 0.26 per cent belong to Sikh religion. The households practicing nuclear family are higher in percentage (67.81 per cent) than those residing in joint families. It has been found that literate people are higher (64.38 per cent) as compared to illiterate people in the surveyed households. Level of income shows that majority of the households belong to low level of income and remaining one fifth have been found with reasonable level of income. Sex ratio is almost equal in the study area. Interestingly, maximum number of children are born in hospitals (Table 1).

Gender-wise Status of Immunization

Table 2 describes the gender-wise status of immunization among children. It was found that nearly two-third (65.70 per cent) children were fully vaccinated. The above rate of immunization is higher than the rate recorded in the studies conducted by Chaturvedi et al. (2007) in an urban area of Agra (49.70 per cent); Sharma et al. (2009) in Surat city (25.10 per cent) and Singh and Yadav (2001) in

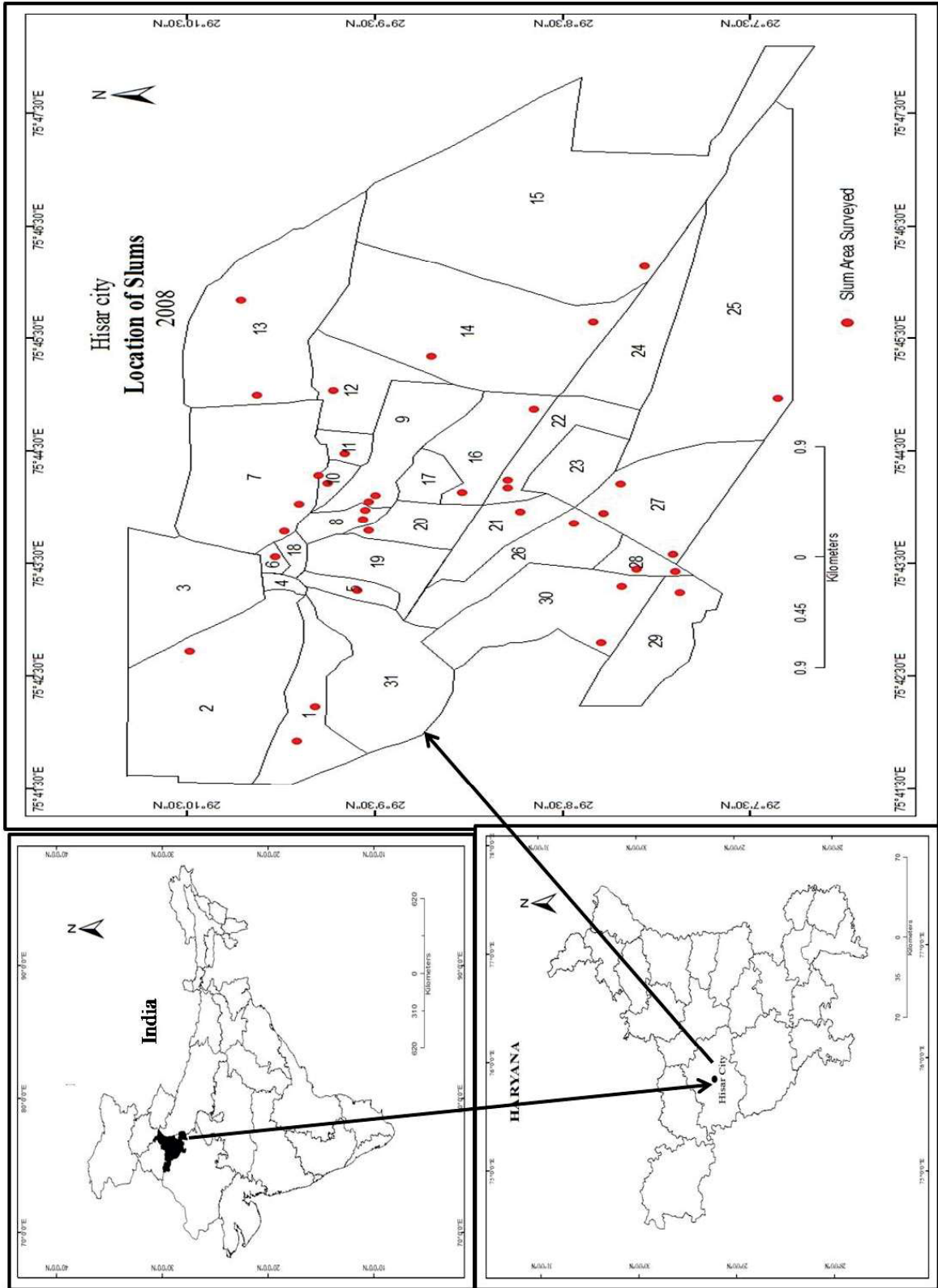


Fig. 1

Source: Municipal Corporation, Hisar City

Table 1
Hisar City: Demographic and Socio-Economic Characteristics
of the Sampled Slum Households

Characteristics of Households	Number	Percentage	
Religion	Hindu	376	99.21
	Muslim	2	0.53
	Sikh	1	0.26
	Total	379	100.00
Type of Family	Nuclear	257	67.81
	Joint	122	32.19
	Total	379	100.00
Caste	SC	176	46.44
	OBC	120	31.66
	General	38	10.03
	Others	45	11.87
	Total	379	100.00
Level of Education of Head of Family	Illiterate	135	35.62
	Literate	244	64.38
	Total	379	100.00
Level of Monthly Family Income in Rupees	<5000	61	16.09
	5000-10000	221	58.31
	10000-15000	38	10.03
	>15000	59	15.57
	Total	379	100.00
Sex of Child	Male	192	50.66
	Female	187	49.34
	Total	379	100.00
Place of Birth of the Child	Home	60	15.83
	Hospital	319	84.17
	Total	379	100.00

Source: Field survey, 2013-14.

Table 2
Hisar City: Immunization Status of the Slum Children by Gender

Status	Male (Per cent)	Female (Per cent)	Total (Per cent)	P value
Fully Vaccinated	67.71	63.64	65.70	Df = 2 $\chi^2 = 1.495$ P>0.05
Partially Vaccinated	30.73	33.16	31.93	
Not Vaccinated	1.56	3.20	2.37	
Total	100.00	100.00	100.00	

Source: Field Survey, 2013-14.

BIMARU states of India (48.00 per cent). However, higher coverage of full immunization (73.33 per cent, 84.09 per cent, and 93.25 per cent) has been reported by Yadav et al. (2006) in urban slums of Jamnagar city; Punith et al. (2008) in Bangalore city and Chopra et al. (2007) in urban area of Meerut city, respectively. Gender-wise, gap illustrates that proportion of fully immunized children was higher among male (67.71 per cent) than female (63.64 per cent) children (Table 2). While Sharma et al. (2009) reported 51.70 per cent of partial immunization and 23.10 per cent of non-immunization in the slums of Surat city which is much higher than the present study recording (31.93 per cent) of partial immunization and only 2.37 per cent of non-immunization. However, Punith et al. (2008), Chopra (2007), Chaturvedi et al. (2007) and Yadav and Singh (2004) have reported a low percentage of (14.09, 5.25, 29.70 and 27.70 per cent, respectively) partially immunized children as compared to the present study (31.93 per cent). It has also been noted that the proportion of partially vaccinated children is high among female (33.16) than males (30.73 per cent). Similarly, 3.21 per cent female and 1.56 per cent male children are not vaccinated at all. The results of chi-square (χ^2) show that male-female differentiation in immunization is statistically not significant (Table 2).

Immunization Coverage by Types of Vaccine

Table 3 shows the immunization coverage by type of vaccine. It has been found that the coverage level was highest for BCG vaccine (94.20 per cent) and lowest for measles (74.67 per cent). The coverage for OPV1 and DPT1 was the same (91.29 per cent) while, the coverage level of OPV3 and DPT3 was found to be 88.65 per cent and 87.86 per cent, respectively. The consistent declining trend in coverage rate from first to third dose was

observed in DPT and OPV (Table 3). Whereas in a study conducted by Sharma et al. (2009) in Surat, the rates of BCG, OPV3, DPT3 and measles (75.10, 48.60, 47.90 and 29.90 per cent, respectively) were much lower than the present study. Similarly, Chaudhary et al. (2010) also obtained lower vaccination rates BCG (92.86 per cent); OPV3 (65.72 per cent); DPT3 (65.72 per cent) and measles (62.38 per cent) in Bareilly than the present study of Hisar (Table 3). The coverage level of measles vaccine recorded in this study is very low (74.67 per cent) as compared to other vaccines. The gender gap is marginal but the coverage level for all vaccines was low among females. Traditional patriarch society, poverty and unawareness about the vaccine schemes may be the probable factors for low immunization among females than males.

Immunization Coverage by Socio-economic and Demographic Characteristics

Table 4 displays the association of immunization coverage by socio-economic and demographic characteristics of households with immunization status of the children. It has been found that more than two-third (71.31 per cent) children of joint family are fully immunized as compared to (64.60 per cent) of nuclear family. Level of education is positively associated in this regard. On the other hand, illiteracy shows the barrier of the immunization status of the child because parents have not sufficient knowledge about the vaccine schemes. Secondly, these poor casual labourers do not find sufficient time to attend to their children and remained occupied with their work. Therefore, the un-immunized children are found more (5.93 per cent) in illiterate and under privileged low income group households (8.20 per cent). A great majority (86.44 per cent) of the children were immunized in households whose income level is more than

Table 3
Hisar City: Immunization Coverage of Slum Children by Type of Vaccine

Type of Vaccine	Male (Per cent)	Female (Per cent)	Total (Per cent)
BCG	95.83	92.51	94.20
OPV1	91.67	90.91	91.29
OPV2	90.63	90.37	90.50
OPV3	89.06	88.24	88.65
DPT1	91.67	90.91	91.29
DPT2	90.63	89.84	90.24
DPT3	88.02	87.70	87.86
Measles	78.13	71.12	74.67

Source: Field survey, 2013-14.

Table 4
Hisar City: Immunization Coverage of Slum Children according to Socio-demographic Characteristics of Sample Households

Characteristics of Households		Fully Immunized (Per cent)	Partially Immunized (Per cent)	Un-immunized (Per cent)	Total (Per cent)
Type of Family	Nuclear	64.60	32.68	2.72	100.0
	Joint	71.31	27.05	1.64	100.0
	P-values	0.238	0.444	0.712	P>0.05
Education Level of Head of Family	Illiterate	62.22	31.85	5.93	100.0
	Literate	70.49	29.10	0.41	100.0
	P-values	0.036	0.001	0.002	P<0.05
Level of Monthly Income (Rs.)	<5000	50.82	40.98	8.20	100.0
	5000-10000	67.42	31.22	1.36	100.0
	10000-15000	76.32	21.05	2.63	100.0
	>15000	86.44	13.56	0.00	100.0
	P-values	0.000	0.006	0.157	P<0.05
Caste	SC	61.36	36.93	1.71	100.0
	OBC	71.67	26.67	1.66	100.0
	General	84.21	13.16	2.63	100.0
	Others	55.56	37.76	6.67	100.0
	P-values	0.308	0.111	0.058	P>0.05

Source: Field survey, 2013-14.

Rs. 15,000 per month. Taking caste into account, it has been observed that rate of full immunization is highest among the children of general caste (84.27 per cent) followed by OBC (71.67 per cent) and scheduled castes (61.36 per cent). On the other hand, 36.93 per cent children of scheduled caste, 23.67 per cent of OBCs and 13.16 per cent of general class were partially immunized (Table 4). The study reveals that education level and level of income of the household are significantly affecting the immunization status of the children ($P < 0.05$). On the other hand, type of family and caste of the households are not significant factor in the status of immunization ($P > 0.05$). The study reflected lowest status of immunization among scheduled castes (61.36 per cent) followed by backward class (71.76 per cent) and general class (84.21 per cent) categories of the households (Table 4).

Conclusions

It is evident from the present study that the immunization status among the slum children of Hisar city is very low and only about two-thirds of the children have been covered under full immunization because the parents of these children are casual labourers, illiterate and do not have sufficient awareness about the immunization schemes. Consequently, some of them expressed apprehension about the side effects of these vaccines even though these are available free of cost. It is particularly low in the case of measles. Gender gap still persists but it is only marginally favoring male child. Overall, results may depict rosy picture viz a viz other similar studies but still there is a great need to improve the immunization status in the study area. For improving the situation, efforts should be made to have information, education and communication to aware the targeted groups about the importance of vaccination. But this can be done when the level of education

increases, especially, in case of females.

References

- Chaturvedi, M., Nandan, D. and Gupta, S.C. 2007. Rapid assessment of immunization practices in Agra district. *Indian Journal of Public Health*, 51(2): 132-134.
- Chaudhary, V., Kumar, R., Agarwal, V.K., Joshi, H.S. and Sharma M. 2010. Evaluation of primary immunization coverage in an urban area of Bareilly city using cluster sampling technique. *NJIRM*, 1(4):10-15.
- Chopra, H., Singh, A.K., Singh, J.V., Bhatnagar. M., Garg, S.K. and Bajpai, S.K. 2007. Status of routine immunization in an urban area of Meerut, *Indian Journal of Community Health*, 19(1): 19-22.
- Kaushik, A., Kumar, K., Kanchan, Taruna and Sharma, H.R. 2002. Water quality index and suitability assessment of urban ground water of Hisar and Panipat in Haryana, *Journal of Environment Biology*. 23 (3): 325-333.
- Lodha, R., Dash, N.R., Kapil, A. and Kabra, S.K. 2000. Diphtheria in urban slums in north India. *Lancet*, 355 (9199): 204.
- NFHS International Institute for Population Sciences (IIPS) and Macro International. 2008. *National Family Health Survey (NFHS-3)*, 2005-06. Mumbai: IIPS, India: Vol. 1: 234.
- Park, K. 2015. *Park's Textbook of Preventive and Social Medicine*, Banarsidas Bhanot, India: 122-125.
- Punith, K., Lalitha, K., Suman, G., Pradeep, B.S. and Jayanth Kumar, K. 2008. Evaluation of primary immunization coverage of infants under universal immunization programme in an urban area of Bangalore city using cluster sampling and lot quality assurance sampling techniques, *India Journal of Community*

- Medicine*, 33(3): 151-155.
- Sharma, R. and Bhasin, S. 2008. Routine immunization: do people know about it? a study among caretakers of children attending pulse polio immunization in East Delhi. *Indian Journal of Community Medicine*, 33(1): 31-34.
- Sharma, R., Desai, V.K. and Kavishar, A. 2009. Assessment of immunization status in the slums of Surat by 15 clusters multi indicators cluster survey technique, *Indian Journal of Community Medicine*, 34(2): 152-155.
- Singh, P. and Yadav, R.J. 2001. Immunization status of children in BIMARU states, *Indian Journal of Pediatrics*, 68(6): 495-500.
- UNICEF, 1990. *The Invisible Child: A Look at the Urban Child in Delhi*. UNICEF-MNIO Publishers, New Delhi: 10.
- Yadav, R.J. and Singh, P. 2004. Immunization status of children and mothers in the state of Madhya Pradesh, *Indian Journal of Community Medicine*, 29(3): 147-148.
- Yadav, S., Mangal, S., Padhiyar, N., Mehta, J.P. and Yadav, B.S. 2006. Evaluation of immunization coverage in urban slums of Jamnagar city, *Indian Journal of Community Medicine*, 31(4):300-302.

Kiran Bala, Research Scholar,
Email: geographykiran2014@gmail.com
(Author for correspondence),

S.P. Kaushik, Professor,
Department of Geography,
Kurukshetra University,
Kurukshetra, Haryana