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RESEARCH ARTICLE

AWARENESS, KNOWLEDGE AND PRACTICES ABOUT IMMUNIZATION AMONG CHILDREN IN URBAN SLUMS

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ABSTRACT

Background: Immunization is an essential public health intervention for maintaining good health status in the population. It is not only one of the best indicators to evaluate the health outcomes and services distributed across social spectrum but also one of the most cost-effective intervention to prevent a series of major illnesses, particularly in environments where children are malnourished/ undernourished and die from preventable diseases.
Objectives: (1).To find out the socio demographic profile of selected respondents. (2). To determine the level of Awareness, Knowledge and Practices regarding immunization.
Methodology: The study was conducted in the randomly selected six slums of Kanpur city in U.P. Following an exploratory research design, the respondents were selected using multistage random sampling, and the sample comprised 150 respondents. Data was collected using structured interview schedule.
Results and Discussion: Seventy percent of the respondents were fully aware of the importance of immunization. As regards the immunization schedule, a large majority (96-98 per cent) had BCG and OPV followed by DPT (54.66 per cent). The adoption of other vaccines and booster doses was found to be very low, ranging from 44 per cent to as low as 19 per cent (Hepatitis 'A' vaccine).
Conclusion: Sustained IEC campaigns need to be undertaken to generate high levels of awareness and knowledge about complete immunization schedule among the target groups to induce practices adoption. Grassroots health educators should stress on the criticality of complete immunization for the good health and disease free growth of children in these urban slums.

INTRODUCTION

According to a WHO estimate, roughly three million children die each year of vaccine preventable diseases (VPDs) with a disproportionate number of these children residing in developing countries. Recent estimates suggest that approximately 34 million children are not completely immunized with almost 98 percent of them residing in developing countries. Immunization forms the major focus of child survival programmes throughout the world. In India, immunization against common childhood diseases has been an integral component of mother and child health services since adoption of the primary health care approach in 1978 and further reinforced by the Declaration of National Health Policy in 1983. For the last three decades, the Expanded Programme on Immunization (EPI) has been promoted as one of the most important key elements of child health interventions in developing countries. Immunization is the process of artificially inducing immunity from many diseases. The aim of an immunization program is to reduce the incidence of or to eradicate a particular disease. Immunization is not only one of the best indicators to evaluate the health outcomes and services distributed across social spectrum but also one of the most cost-effective interventions to prevent a series of major illnesses, particularly in environments where children are malnourished/ undernourished and die from preventable diseases. Globally, evidences from studies have shown that of all the child survival interventions, the greatest gains have been achieved in immunization (WHO/UNICEF, 2010). Given the extensive benefits of immunization, any inequities in Knowledge, Attitude and Practices are a cause of serious policy concern (Hamid *et al*., 2012). Immunization is a timely step for prevention of mortality and morbidity due to communicable diseases, and WHO (2000) rates immunization as one of the interventions with a large potential impact on health outcomes. However its impact is not evenly spread throughout countries.

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'In the past few decades immunization coverage rates have improved sufficiently in developed countries, thereby conferring herd immunity, whereas most of the developing countries are still struggling with faltering rates' (WHO, 2007). The delivery systems of child immunization have many inherent problems to which an addition may be made by the people themselves, with their prejudices, conclusions and apathy. Immunization is crucial and an integral part of public health interventions as it provides protection (herd immunity) against many life threatening communicable diseases. It is now routinely administered around the world, based on the common sense principle. According to the WHO (2010), one goal of the Global Immunization Vision and Strategy 2006 to 2015 is for each country to reach at least 90% coverage nationally and 80% in every district or equivalent administrative unit by 2015. In 2009, only 122 member states had reached national-level coverage of 90%. However, philosophically as well as strategically, it is better to stop the people from falling ill rather than to treat them once they are ill. Consequently, immunization against communicable diseases has been, and continues to be, one of the most important public health intervention supported by the government as well as other health care agencies. Immunization reduces mortality as well as morbidity besides reducing the strain on health care delivery system thereby saving lots of money which could otherwise be spent on development initiatives.

Immunization has proved its effectiveness in controlling and even eradicating many diseases. Although new research has widened the bouquet of vaccines available for new and emerging diseases, the universal immunization programme's focus on Tuberculosis, Diphtheria Pertusis Tetanus (DPT), Measles and Polio, has significantly reduced the prevalence of these disease in the population which used to acquire epidemic proportions in earlier decades. Expanded programme on immunization and the global alliance for control/ eradication of vaccine-preventable disease have provided impetus, funding and technical expertise that have helped increase immunization coverage and the number of vaccines provided. However, favourable public attitude and understanding of its benefits as well as the desirability of offering their children for vaccination is essential for achieving the projected goals of universal immunization. In spite of several efforts, the level of awareness, knowledge and understanding about the need for immunization has remained low, particularly in the disadvantaged sections of the population, especially in the low income groups and people living in the slums or periphery of urban centre as well as in rural areas. This poses a challenge for health services providers as well as policy makers.

Roy *et al.* (1998) while studying the extent of awareness and knowledge of immunization among a group of acceptors observed that awareness was related to the age, education and occupation of the respondents. Awareness was measured with respect to four vaccines BCG, Polio, DPT, and Measles used in universal immunization programme. Colle and Rassania (2006) while studying awareness regarding immunization, reported low levels of awareness about the importance of the immunization and its adoption among the Muslim women. Considering the fact that immunization plays a critical role in maintaining good health status, we need to study the levels of awareness, knowledge and adoption of immunization in different segments of population. Central/ State governments have been actively engaged in generating desired awareness and knowledge among the population and also ensures its adoption. Recent surveys and research studies have pointed out the urgent need for increasing the immunization levels in rural areas as well as in urban areas, especially slums which lacks proper sanitation and hygienic facilities. Besides, the poor and low income groups are more vulnerable as they have low purchasing power. Further, difference in the understanding of men and women about the need for immunization complicates the efforts aimed at inducing adoption.

Against this backdrop, the present study was undertaken with the following objectives:

- To find out the socio demographic profile of selected respondents.
- To determine the level of Awareness, Knowledge and Practices regarding immunization.

MATERIALS AND METHODS

In the present study, an exploratory research design was used. *Sampling Procedure*: The *multi stage random sampling* was adopted for the research study. However, in this sampling design the selection of sample was done at every stage randomly: *Selection of State*: Research study was undertaken in Uttar Pradesh. *Selection of District*: One district (Kanpur) was selected purposively. *Selection of City*: Kanpur city is divided in to two areas- Kanpur urban and Kanpur rural. Kanpur urban is divided into three areas- Nagar Nigam, Nagar Panchayat and Nagar Palika. Nagar-Nigam represents Kanpur city. Out of these, Kanpur city was selected for the purpose of the study. *Sample Selection:* From six selected slum areas, a list of those mothers was prepared who had children below the age of 5 years as this is the period when the immunization schedule is completed except the booster dose. From this list, 25 mothers were selected randomly from each slum area making a total of 150 respondents.

A pre-tested structured interview schedule was used which consist of two parts: *General information*- i.e. information about the slum, family, socio-economic status etc.; and *Specific information:* This section consisted of four parts and classified into 5 categories. Awareness about different types of vaccine like BCG, DPT, MMR, and Vitamin 'A' etc. Knowledge consisted following aspects such as vaccination of children like BCG, OPV, DPT, MMR, Hepatitis 'B' and Hepatitis 'A' vaccine, knowledge about correct time-table, time of 1st and 2nd booster dose and optional doses according to immunization schedule. The data collected was analysed using inferential statistics using SPSS 17.0 programme.

RESULTS AND DISCUSSION

The findings of the study are presented below

1. **Profile Characteristics of the Respondents:** Socio-economic characteristics possessed by respondents are presented in the following table:

Table 1. Distribution of the respondents according to their personal characteristics

N = 150			
S.No.	Variables	Categories	Frequency
1.	Age	20-35	128 (85.34)
		36 and above	22 (14.66)
2.	Religion	Hindu	95 (63.33)
		Muslim	53 (35.33)
		Christian	2 (1.34)
3.	Caste	General Caste	84 (56.00)
		Backward Caste	24 (16.00)
		Scheduled Caste	42 (28.00)
4.	Education of women	Illiterate	15 (10.00)
		Literate	5 (3.34)
		Primary	35 (23.33)
		Secondary	20 (13.34)
		High school	27 (18.00)
		Intermediate	26 (17.33)
		Graduate and above	22 (14.66)
5.	Respondent's Occupation	Manual Labour	26 (17.34)
		Job Work	44 (29.34)
		Service	16 (10.66)
		Non-Working	64 (42.66)
6.	No. of Children	Up to 3 Children	112 (74.66)
		More than 3 children	38 (25.34)
4.	Income per annum	4800-6600 (Low Range)	113 (75.33)
		6600-8400 (Middle Range	23 (15.34)
		8400-10200 (High- Range)	14 (9.33)
3.	Level of Husband's Education	Illiterate	4 (2.66)
		Literate	-
		Primary	32 (21.34)
		Secondary	28 (18.66)
		High school	26 (17.34)
		Intermediate	20 (13.34)
		Graduate and above	40 (26.66)

Note: Figures in parenthesis are percentage.

Personal characteristics of respondent given in table-1above reveals that maximum number of respondent (85.34 per cent) were 20-35 years of age. As regards the religion, majority of them (63.33 per cent) were Hindus followed by Muslims (35.33 per cent) while only 1.34 per cent were Christian. Caste-wise break-up shows that 56 per cent respondents belonged to general caste, 28 per cent respondents were from backward caste, while remaining (16 per cent) belonged to scheduled caste. The educational level of respondent shows that only 15 per cent of the respondents were illiterate whereas a large majority of them (85%) were literate having different educational attainments (varying from primary to graduate).

Further, regarding occupation of the respondent, 42.66% were of non-working status and thus not involved in any profession, and 29.34 per cent were engaged as casual labour (job work), 17.34 per cent doing manual labour, and only 10.66 per cent respondents were from service class. In respect to number of children, 74.66 per cent respondents had up to 3 children, while 25.34 per cent had more than 3 children. A careful perusal of husband's education shows that only 2.66 per cent were illiterate, while rest of them were literate, belonging to various educational categories ranging from primary to graduate. Analysis of per capita per annum income of families indicate that 75.33 per cent families were from low income group range followed by 15.34 per cent families were from middle income group range and only 9.33 per cent families were from high income group range.

2. Awareness, Knowledge and Practices regarding immunization among children

(i). Awareness about immunization of children

Immunisation focused mass media publicity and community mobilsation drives have been undertaken to educate the target clients about the importance of immunisation among the children all over India. The following Table-2 gives the awareness about children immunisation among the target population.

Table 2. Distribution of respondents according to their awareness regarding vaccination/immunization (N= 150)

S. No.	Awareness about	Fully aware	Not aware
2.	Importance of vaccination	137 (91.34)	13 (8.66)
4.	Vaccination for children	145 (96.66)	5 (3.34)
5.	Vaccination schedule for protection against diseases	134 (89.34)	16 (10.66)
6.	Time for giving vaccination against		
	• Tuberculosis	139 (92.66)	11(7.34)
	• DPT Vaccine.	115 (76.66)	35 (23.34)
	• DPT Vaccine (booster dose)	97 (64.66)	53 (35.34)
	• Measles/ MMR Vaccine.	109 (72.66)	41 (27.34)
7.	Oral Polio Vaccine	124 (82.66)	26(17.34)
8.	Vitamin 'A'	98 (65.34)	52 (34.66)
9.	Hepatitis 'B' Vaccine	86 (57.34)	64(42.66)
10.	Hepatitis 'B' Vaccine (booster dose)	80 (53.34)	70 (46.66)
11.	Haemophilus Influenzae Type 'b' Vaccine.	81 (54.00)	69 (46.00)
12.	Hepatitis 'A' Vaccine (booster dose)	76 (50.66)	74 (44.34)

Note: Figures in parenthesis are percentages.

A careful perusal of the results presented in the above table reveals high awareness levels about 'general importance of vaccination' and 'vaccination for children' (91.34% and 96.66 %, respectively); and 89.34% reported that they were aware of the 'schedule of vaccination against six vaccine-preventable diseases'. Further, awareness about the time for giving vaccine for protection against the six diseases was found to be quite high in case of Tuberculosis (92.66%) but in case of other disease, it was low (76.66 % for DPT; 64.66 % for DT Booster and 72.66% for Measles/ MMR). As regards awareness regarding Polio, it was 82.66%; and in case of Vitamin-A, 65.34%. The levels of awareness about other vaccines such as Hepatitis A, B and Haemophilus Influenza (which are optional and are not part of the Government's Universal Immunisation Programme) were quite low, between 50-60% only. Similar findings have been reported Bhatia (1997), Essien (2006), Rajeshwari *et al.* (1994) and Jain. (1998) emphasizing that 90-99 per cent of women respondents were fully aware of the children immunization against BCG, DPT, OPV and Measles diseases etc.

(ii) Knowledge about immunization of children

It has been learnt from various surveys that people are generally aware of various things but lack complete knowledge about them, which is often cited as a barrier to its adoption. Respondent's knowledge about immunisation of children against the six vaccine preventable disease was ascertained and the results obtained are given in Table-3 below.

Table 3. Distribution of respondents according to their knowledge regarding Children's immunization (N=150)

S. No.	Knowledge about	Correct	Incorrect
1.	Importance of vaccination for children?	89 (59.33)	61 (40.67)
2.	Initial age for vaccinating the child	87 (58.00)	55 (36.66)
3.	How many vaccines (doses) are given	81 (54.00)	69 (46.00)
4.	Vaccination related to Diseases:		
	(a). Tuberculosis	22 (14.67)	128 (85.33)
	(b). Diphtheria	12 (8.00)	138 (92.00)
	(c). Pertusis/ Whooping Cough	10 (6.66)	140 (93.34)
	(d). Tetanus	17 (11.33)	133 (88.67)
	(d). Measles	32 (21.33)	118 (78.67)
	(e). Polio	63 (42.00)	37 (58.00)
	(f). All of the above	32 (21.33)	118 (78.67)
5.	Time of mandatory vaccination of children	83(55.34)	67 (44.66)
	(i). BCG : At birth	48(32.00)	102 (68.00)
	(ii). DPT-1: Six Weeks/ 1.5 Months	45(30.00)	105 (70.00)
	(iii). DPT-2: Ten Weeks/ 2.5 Months	53 (35.33)	97 (64.67)
	(iv). DPT-3: 14 Weeks/ 3.5 Months	46 (30.67)	104 (69.33)
	(v). Measle/ MMR: 9-12 Months	62 (41.33)	88 (58.67)
	(vi). Polio (OPV): At Birth and PPI days		

Note: Figures in parenthesis are percentages; PPI refers to Pulse Polio Immunisation Days

Above table 5 depicts that 63.34 per cent of the respondents knew correctly, whereas 36.66 per cent of the women respondents did not know about vaccination of children. Study reveals that very few of the respondents (33.34 per cent) knew about all the diseases related to vaccination, and rest 29 per cent (total of Tuberculosis, Polio, Diphtheria, Measles and Tetanus diseases) had incomplete knowledge, whereas 38.66 per cent did not know at all about diseases related to vaccination. According to data collected, study reveals that majority (54 per cent to 58 per cent) of the women respondents had correct knowledge, while the rest (approximate 36 per cent to 46 per cent) of the women respondents did not knew about initial age of vaccination, how many vaccines and number of total doses of vaccines are given to children.

(iii) Practice about immunization of children

It is presumed that awareness and knowledge of an idea/ practice will naturally lead to its adoption/ use. Despite sufficient understanding of criticality of immunisation of children for ensuring their good health/ survival, it is generally seen that people neglect them owing to various reasons. Adoption of immunisation practices in respect of children immunisation was studied and the results are given in Table-4 below.

Table 4. Distribution of respondents regarding Practices about children immunization

S. No.	Practices about immunization	Yes
1.	Complete vaccination (5 doses+ Booster dose)	64 (42.67)
2.	Partially complete (3-4 doses)	73 (48.67)
3.	Incomplete/ No vaccination (Only 1-2 dose)	13 (8.67)
4.	OPV (Oral Polio Vaccine)	122 (81.34)
5.	Other Vaccines/ Doses) (Hepatitis A, B; Haemophilus Influenzae, Varicella for chicken pox, Tetanus, Vit. A, etc)	24 (16.0)

Note: Figures in parenthesis are percentages.

The results presented above reveal that only 42.67 % children were fully immunized, i.e. they had been administered all the five shots of vaccine along with OPV. Further, about half of the children (48.67%) were partially immunized and only 8.67% children were not immunized or had incomplete immunisation. The situation is worrisome as UIP has called for achieving the immunisation coverage levels to the tune of 85%. Despite all the efforts undertaken by central/ state governments as well as various international agencies (UNICEF, WHO), the situation has not changed much. This could be the cause of high morbidity and mortality observed among the children in urban slums.

DISCUSSION

Despite all the efforts taken by the Government of India and various international agencies, the proportion of unimmunized and partially immunized children remain quite high and we lag far behind the National socio-demographic goal of 85% coverage of all the vaccines. Thus, there is an urgent need to increase the coverage of UIP (Universal Immunization Programme) vaccines. This necessitates the various stakeholders to actively pursue the goal of improving the existing Knowledge, Attitude and Practices (KAP) in the society with respect to the different aspects of immunization. The present study therefore provides us an important insight into the existing level of awareness among the people and the areas that need attention of policy makers and health professionals. This would require appropriate information dissemination, aggressive campaigning and family involvement as crucial to the success of the programme. The insufficient knowledge of the people requires sincere efforts on the part of the health professionals and the policy makers to plan and execute the IEC (information, education & communication) initiatives. There should be also regular updates (CMEs) for improving the knowledge of doctors and the paramedical staff. Emphasis needs to be on the specific target groups, i.e. the families having children below five years of age besides the newly married couples and adolescents, especially girls. It is also suggested that health education campaigns should specifically target mothers to achieve the targets of UIP. Moreover the role of media in providing information needs to be improved.

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