Original Research Article

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Determinants of awareness regarding immunization among parents of children residing in an urban slum of a metro city

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ABSTRACT

Background: Many families lack accurate information and knowledge about need for immunization, the need for subsequent dose(s), and the importance of completing the entire immunization schedule. Considering this fact present study was undertaken to identify the factors influencing knowledge of parents regarding immunization.

Methods: It's a cross sectional study conducted for a period of one year in an urban slum area of Malad, Mumbai. Children aged 12-24 months in the study area were included and their parents interviewed using semi structured questionnaire which was validated with the help of a pilot study.

Results: Ninety seven percent respondents had heard about immunization. Only 2.8% of them were not aware about immunization. Total 30.5% of respondents could correctly identify the purpose of immunization i.e. protection of child from disease. Almost 65.2% of them did not know vaccines given under national immunization program. Fever (72.3%) was commonest side effect reported by respondents followed by swelling (38.3%). Reasons for lack of knowledge were ignorance about immunization (31.0%), followed by enough information was not received from health providers (24.1%).

Conclusions: Knowledge regarding immunisation is very poor among the residents of urban slums of Mumbai. IEC material regarding immunization should be displayed in waiting areas of immunization clinic and several strategic places in the community. There is a need for additional training or capacity building of health workers to improve their attitudes towards clients, and to strengthen their ability to counsel regarding immunization.

Keywords: Immunisation, Urban slum, Knowledge

INTRODUCTION

Immunization forms the major focus of child survival programs throughout the world. Roughly 3 million children die each year of vaccine preventable diseases 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 % of them residing in developing countries. Vaccination coverage in India is also far from complete despite the long-standing

commitment to universal coverage. While gains in coverage proved to be rapid throughout the 1980s, taking off from a below 20% coverage to about 60% coverage for some VPDs, subsequent gains have been limited. 1,2

Many families lack accurate information and knowledge about need for immunization, the need for subsequent doses, and the importance of completing the entire immunization schedule.^{3,4} In fact, this is often the primary obstacle to achieving full immunization of children who have good access to services. They often do

not know when and where immunizations are available or when the next vaccination is due. They are often unaware that if they miss a scheduled immunization date, they can be still be immunized; so they should come as soon as they can. Many parents felt that they were not provided with enough information.

Considering the above facts, the present study was undertaken to identify the factors influencing knowledge of parents regarding immunization.

Objectives

- To assess the knowledge of immunization among parents.
- To identify the factors influencing their knowledge of immunization.

METHODS

It's a cross sectional study conducted for a period of one year (April 2014 to May 2015) in an urban slum area of Malad, Mumbai. Children aged 12-24 months in the study area were included and their parents interviewed using semi structured questionnaire which was validated with the help of a pilot study. Children whose parents were not present in home or could not be contacted excluded from the study.

Sample size is estimated using formula,

$$n = z^2 \times p \times q \times N / e^2 (N-1) + z^2 \times p \times q$$

Where,

p=proportion of children aged 12-24 months who are either partially or not vaccinated (as per the record obtained local health authority) i.e. 12%.

The estimated sample size for a given study was 145.

Sampling method

Simple random sampling method

Total population of slum was 115200 as per records obtained from local health authority. This slum consists of 4 areas depending upon the geographical demarcations. All the 4 areas were selected for this study.

Principle of "proportionate to population size" was used while selecting number of children from each area to avoid sampling error. Then children were selected by random number method in each area. Ethical clearance was obtained from the Institutional Review Board. & then data collection was initiated.

Informed written consent was obtained from the parents after explaining the purpose of the study. Parents were taken into confidence and assured that the information provided by them would remain confidential.

Data entry was done using Microsoft excel software 2010 version. Statistical analysis was done using Open epi software version. Statistical tools like means, median, range, proportions and chi-square etc. were used appropriately

Operational definitions

- A child who had received BCG, three doses of DPT, three doses of OPV and a measles vaccine up to 1 one year of age was classified as "Fully immunized".
- A child who had missed any of the vaccine given under the National Immunization Program till one year of age was classified as "Partially immunized"
- A child who had not received any vaccine up to one year of age or received only pulse polio immunization were classified as "Non-immunized".

Status of immunization was determined by the history and whenever possible, it was confirmed by immunization card.

RESULTS

Above table shows that, 39.3% of total study participants were in the age group of 12 to 15 months followed by 37.2% in the age group of 20-24 months. Mean age of study participants was 17.3 months with SD 3.9. Out of 145 study participants, 58.6% were males and 41.4% females. It is observed that 70.4% study participants were in the Open category. 55.2% children belonged to Muslim religion, 40% belonged to Hindu religion and 4.8% were Buddhist. 50.3% fathers had completed middle school & mothers of most children (48.3%) had studied up to the middle school. About 31.7% fathers were unskilled workers, 31.0% semi-skilled workers, 21.4% skilled workers, 13.8% shop owners or clerks in office and 1.4% of them were unemployed. Only 0.7% were professional, Total 87.6 % mothers were housewives. As per the modified Kuppuswamy's socioeconomic status scale, it was observed that 50.3% respondents belonged to class IV, 35.9% to Class III and 13.8% to Class II. None of the respondents belonged to Class I and V.

Table 2 shows that, 97.2% respondents had heard about immunization. Only 2.8% of them were not aware about immunization. Total 30.5% of respondents could correctly identify the purpose of immunization i.e. protection of child from diseases & 18.4% of respondents did not know the purpose of immunization for children. Almost 65.2% of them did not know any of the vaccine given under national immunization program. Only 5.0% respondent correctly answered for age of completion of immunization i.e. 16 to 18 years while 39.7% respondents were unable to state the age at which immunization complete.

Table 1: Sociodemographic distribution of study participants.

Factors	Description	Frequency
ractors	Description	(%)
Age in months	12-15	57 (39.3)
	16-19	34 (23.5)
	20-24	54 (37.2)
Sex	Male	85 (58.6)
Sex	Female	60 (41.4)
	Open	102 (70.4)
Caste	OBC	36 (24.8)
	SC-ST	07 (4.8)
	Muslim	80 (55.2)
Religion	Hindu	58 (40)
	Buddhist	07 (4.8)
	Illiterate	19 (13.1)
	Primary	11 (7.6)
Education of	Middle	73 (50.3)
Father	High School	20 (13.8)
	Higher Secondary	12 (8.3)
	Graduate	10 (6.9)
	Illiterate	28 (19.3)
	Primary	16 (11)
Education of	Middle	70 (48.3)
Mother	High School	18 (12.4)
	Higher Secondary	04 (2.8)
	Graduate	09 (6.2)
	Unemployed	02 (1.4)
	Unskilled worker	46 (31.7)
Occupation of	Semi-skilled worker	45 (31)
Father	Skilled worker	31 (21.4)
	Clerical, shop owner	20 (13.8)
	Profession	01 (0.7)
Occupation of	Housewife	127 (87.6)
	Unskilled worker	15 (10.3)
Mother	Semi-skilled worker	02 (1.4)
	Skilled worker	01 (0.7)
Kuppuswamy's	Class II	20 (13.8)
Socioeconomic	Class III	52 (35.9)
status scale	Class IV	73 (50.3)
E9 4	Nuclear	117 (80.7)
Family type	Joint	28 (19.3)
	3	15 (10.4)
Family size	4-6	94 (64.8)
	>6	36 (24.8)
	1 st	55 (37.9)
Birth order of children	2 nd	48 (33.1)
	3 rd	38 (26.2)
	>3 rd	04 (2.8)
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Multiple responses were obtained for all the above mentioned side effects following immunization. fever (72.3%) was the most common side effect reported by respondents followed by swelling (38.3%). 5.7%

responded that there are no side effects of immunization and 7.0% did not know the side effects of immunization.

Table 2: Knowledge regarding immunisation.

Variables	Description	Frequency (%)
Heard about Immunisation	Yes	141 (97.2)
	No	04 (2.8)
Purpose of Immunisation	protect child	
	from disease	43 (30.5)
	Cure illness	35 (24.8)
	Stay Healthy	29 (20.6)
	Helps in growth	08 (5.7)
	Don't know	26 (18.4)
	OPV	32 (22.7)
	BCG	30 (21.3)
Vassimas musuidad	Measles	21 (14.9)
Vaccines provided under UIP	TT	12 (8.5)
	DPT	09 (6.4)
	HBV	02 (1.4)
	Don't know	92 (65.2)
Visits required for	<4	35 (24.8)
immunization of	4-5	62 (44)
child below one year of age	>5	44 (31.2)
	12 months	07 (5)
Age of completion of immunisation	15-18 months	05 (3.5)
	2-3 years	04 (2.8)
	5 years	40 (28.4)
	10 years	22 (15.6)
	16-18 years	07 (5)
	Don't know	56 (39.7)

Table 3: Distribution of study participants as per the knowledge regarding side effects after vaccination (n=141).

Knowledge regarding side effects	Frequency	Percentage (%)
Fever	102	72.3
Swelling	54	38.3
Pain	39	27.7
Child becomes irritable	11	7.8
Abscess	6	4.3
No side effects	8	5.7
Don't know	10	7.0

Table 4 shows that health workers/doctors (70.2%) were the main source of information for the respondent about immunization, followed by Community (26.3%).

Main reasons for lack of knowledge were ignorance about immunization (31.0%), followed by enough information was not received from health providers (24.1%).

Table 4: Distribution of respondents according to source of information (n=141).

Source of Information	Frequency	Percentage (%)
Health worker/doctor	99	70.2
Community (neighbour/relative/ friend)	37	26.3
Electronic media (TV/Radio)	4	2.8
Print media (newspaper/poster)	1	0.7
Total	141	100.0

Table 5: Distribution of respondents according to reasons for lack of knowledge (n=145)

Reasons for lack of knowledge	Frequency	Percentage (%)
Ignorance about immunization	45	31.0
Not received enough information from health worker	35	24.1
Forgot the information given	21	14.5
Did not know where to get information	18	12.4
Indifferent attitude of health worker	17	11.7
Language difficulty	7	4.9
Lack of access to media	2	1.4
Total	145	100.0

DISCUSSION

In the current study, 39.3% children were in the age group of 12-15 months. Mean age was 17.3 months with SD 3.9.

In the present study, it was observed that 97.2% respondents had heard about immunization. Only 2.8% of them were not aware about immunization.

In a study by Etana et al, from the total respondents about 96% of the heard about vaccination and vaccine preventable disease while 4% did not aware about immunization 39. Mapatano et al, study shows that 98.8% mothers had heard of immunisation. These findings were similar with the present study. 5.6

In the present study, it was observed that 30.5% of respondents could correctly identify the purpose of immunization i.e. protection of child from diseases. 24.8% responded to cure illness, 20.6% mentioned it is for staying healthy and 5.7% said it helps growth. 18.4% of respondents did not know the purpose of immunization

for children. In a study by Banerjee, 57% of women could correctly identify the purpose of immunization to prevent disease/to protect their child from infection. But 43% did not know or had incorrect Knowledge.⁷

In a study by Etana et al, majority of the respondent (79.5%) mentioned the objective immunization is to prevent disease, 12.1% responded it is for healthy child, 7.8% said they do not know and 0.6% mentioned it is for other reason like for diarrheal disease. The knowledge of respondents was better in this study as compared to present study.⁵

In a study by Ahmad et al, it was observed that apart from polio, knowledge of vaccine preventable diseases among all women was low.8 73% were aware that vaccinations can protect a child against polio, just 35-39% were aware that vaccinations can also protect a child against tetanus and measles. Less than 20% of women were aware that vaccinations can protect a child against whooping cough, TB and diphtheria. In a study by Qidwai et al, immunization exists against tuberculosis, polio and tetanus according to 95%, 99% and 95% respondents, respectively. Immunization exists against hepatitis and malaria according to 36% and 10% respondents, respectively.9 In present study only 30.5% of respondents could correctly identify the purpose of immunization i.e. protection of child from diseases & 18.4% of respondents did not know the purpose of immunization for children. Almost 65.2% of them did not know any of the vaccine given under national immunization. Only 22 percent can identify the BCG and OPV is given under national immunization schedule.

In the present study, 44% of respondent answered correctly for number of visit required below one year of age i.e. 4 or 5. 31.2% respondent answered more than 5 and 24.8% answered less than 4 visits required below one year of age.

In a study by Etana et al, 31.9% answered 3 sessions needed to complete immunization, 25.6% said 4 and 23.4% responded do not know. 25.6% respondents answered correct answer for session needed to complete immunization i.e. four. ⁵ In a community based survey Freeman et al, it was observed that 48% did not know how many times the child should be immunized in the first year of life. ¹⁰

In present study, only 5.0% respondents correctly answered for age of completion of immunization i.e. 16 to 18 years while 39.7% respondents were unable to state the age at which immunization is to be complete. In a study by Etana et al, on age complete immunization, 67.5% could answer correctly the age at which immunization is to be complete i.e. nine months, followed by 21.1% said they do not know, 4.1% said one year, 2.1% five year and 5.2% of them answered others.⁵

In the present study, multiple responses were obtained from respondents about knowledge regarding side effects following immunization. It was found that fever (72.3%) was the most common side effect reported by respondents followed by swelling (38.3%), pain (27.7%), irritability (7.8%) and abscess (4.3%). 5.7% responded that there are no side effects of immunization and 7.0% did not know the side effects of immunization. In the report of third evaluation of expanded programme immunization in Punjab, common side effects reported by parents were fever (34.2%), redness where the needle was given (20.2%), irritability (7.7%) and crying (1.0%). Al-Zahrani conducted a cross sectional study which shows that fever was the most commonly reported adverse effect of vaccination by parents (74.2%) followed by pain (48.6%). 11 Skin rash and convulsions were reported by only 4.9% and 4.1% of the respondents, respectively. Skin rash and convulsions were not reported by the respondents in the present study.

In the current study, it was observed that health workers/doctors (70.2%) were the main source of information for the respondent about immunization, followed by Community (26.3%). The other sources of immunization were electronic media (2.8%) and print media (0.7%). Following studies also mentioned health worker as the main source of information for respondents. In the study by Al-Zahrani, physicians were the main source of information (77.7%) for the parents about immunization, followed by TV (37.6%), Internet (21.7%) and newspapers (13.3%).

Devkota et al conducted study on parents' knowledge and practices to childhood immunisation in Nepal. In this study, 40% of the respondents tagged health workers as their main source of information. 35.2% respondent received information from the TV.¹² It has been found that 24.2% relied on family members and relatives for information on childhood-related immunisation. 22.5% had received such information from teachers and development workers as their major source of information. Newspapers and internet were not perceived as important means of communication on immunisation issues. Eaheem et al study shows that the main sources of information were health workers (72.7%), town announcers (10.3%), radio (5.1%), family members (4.9%) and friends (3%).¹³

CONCLUSION

Present study stated that the knowledge regarding immunisation is very poor among the residents of urban slums of Mumbai and to achieve the complete immunization in slum areas extra steps are needed. IEC material regarding immunization should be displayed in waiting areas of immunization clinic and several strategic places in the community. Sharing experiences with satisfied beneficiaries- as "satisfied customer is the best salesman". There is a need for additional training or

capacity building of health workers to improve their attitudes towards clients, and to strengthen their ability to counsel regarding immunization.

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Institutional Ethics Committee

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