ORIGINAL ARTICLE

Mothers and vaccination: A study to find the knowledge among the mothers of 12–23 months old children regarding child vaccination as per National immunization schedule in a North Indian district

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Aim: To assess knowledge among mothers of children aged 12–23 months regarding child immunization. **Background:** Child mortality and morbidity in the country not only reflect health status of society but also reflects utilization of health services. As most of child mortality in India is contributed by vaccine preventable diseases, knowledge among mothers of children aged 12–23 months shows efforts of system to create awareness in community to control and prevent child mortality in long term. **Materials and Methods:** Total 3 villages from Bithri Chainpur block of Bareilly district were chosen using staratified random sampling. Mothers of children aged 12–23 months were interviewed regarding vaccines administered under national immunization schedule. **Results:** 63.44% mothers lacked any knowledge regarding total number and schedule of vaccines given to child under national immunization schedule during 1st year. 73.12% mothers lacked any knowledge regarding diseases prevented by vaccines given to child under national immunization schedule during 1st year. 72.58% mothers reported Family/Community members as a source of knowledge regarding child immunization followed by ASHA who gave knowledge to 64.52% mother and ANM (52.15%). **Conclusion:** There is still need for IEC and BCC activities regarding child health and vaccination. For better outcome, training of ASHA and ANM and use of social media campaigns will be better strategies. Involvement of doctors and nursing staff in IEC activities will give long lasting benefits.

KEY WORDS: Vaccination, vaccine preventable diseases, child health

INTRODUCTION

India (24%) and Nigeria (11%) together account for more than one third of under-five deaths worldwide.[1,2] In India, According to Sample registration system 2021, under 5 years mortality rate in India for the year 2019, stands at 30/1000 live births and it varies from 34/1000 live births in rural areas to 20/1000 live births in Urban areas. In Uttar Pradesh, under five mortality rate is estimated at 41/1000 live births and it varies from 44/1000 live births in rural areas to 31/1000 live births in urban areas.[3]

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Immunization has been regarded as the most cost effective intervention for child health promotion by the World Health Organization.[4] Child vaccination against vaccine preventable diseases regardless the efficacy reduces economic burden on parents of treating disease and does reduce poverty in long run. Developing countries not only have good hygienic conditions also have very good coverage and acceptability of children vaccination, whereas in developing countries poor acceptability and poor coverage put more burden on already struggling health

system and pushes families into poverty.[4] Mission Indradhnush and Intensified mission Indradhnush were launched to filling this gap in utilization of Universal Immunization Program. Good knowledge and attitude of parents is one of deciding factor for utilizing child health services and vaccination.

Assessment of knowledge of the mothers regarding various child health issues helps to find out various obstacles in utilization of services and gives clues to improve the utilization. Hence the present study was conducted to determine the knowledge and related factors among mothers of 12–23 months old children regarding vaccination.

MATERIALS AND METHODS

The proposed study was carried out in Bitheri Chanpur Block of District Bareilly which is the rural field practice area attached to the department of Community Medicine, Rohilkhand Medical College, Bareilly.

All the villages of the block were divided in three categories according to the presence of government health facility in the geographical boundaries

i. With Primary health center level facility
ii. With sub center
iii. With no health facility

One village from each category was selected randomly by drawing lottery. These villages were Dharampur (With PHC attach to Rohilkhand medical college), Banjaria (With sub center), Lalpur (With no public health center).

Type of Study

Cross Sectional.

Study Population

All Mothers of 12–23 months old children residing in selected areas.

Study Period

January 2019–December 2019.

Sampling Method

Stratified Random Sampling.

Study Tool

Self-administered Questionnaire.

At the end of the study, the recorded information was compiled and analyzed with the help of Epi info (7.1). Valid conclusions were drawn and practical recommendations were given.

RESULTS

The study was carried out in three villages of Bithri Chanpur Block of District Bareilly. Mothers of children from 12 to 23 months participated in the study. Total 186 mothers were interviewed.

Table 1 shows distribution of study subjects according to place of residence. Out of total 186 mothers, 30.11% belong to Lalpur, 48.39% belong to Banjaria and 21.51% belong to Dharampur. The distance of Dharampur, Banjaria and Lalpur from block headquarter i.e. PHC Bithri Chanpur is 14 km, 18 Km and 5 km respectively.

Table 2 summarizes various socio demographic factors of mothers. None of the mothers was under 18 years age. Majority (86.56%) of mothers were in 18–29 years age group. There was no statistically significant difference in distribution of mothers according to age groups among villages.

Out of total 186 mothers, 95.16% belonged to Hindu religion and 4.84% belonged to Muslim religion. Difference in distribution of mothers according to religion among villages was not found to be statistically significant.

Among total mothers, majority (61.83%) belonged to schedule caste followed by general (31.18%) and backward caste (6.99%). Majority of mothers in Lalpur and Dharampur belonged to scheduled caste i.e. 62.50% and 70% respectively. Statistically, distribution of population of Banjaria village is significantly different from other villages as majority belonged to general caste (52.50%).

According to kuppuswamy Scale, out of total 186 mothers, majority were in upper lower class (58.60%) followed by upper middle class (27.96%). The scenario was similar in all three villages with slight difference. Statistically, difference in distribution according to socio economic class among three villages was not significant. Majority of mothers belonged to joint families (70.97%) and rest were in nuclear families (29.03%). Statistically, difference in the distribution according to type of family among the three villages was not significant.

Majority of mothers (29.57%) who participated in the study were illiterate followed by high school (22.83%), Primary school (20.97%), Middle school (12.9%), Intermediate (11.83%) and graduate (2.15%). Pattern of distribution according to educational status of mothers was found to be same in all three villages.

Table 3 explains that 63.44% mothers lacked any knowledge regarding total number and schedule of vaccines given to child

Table 1: Distribution of mothers according to place of residence

Place of residence	No. of participants		Distance from PHC
	No.	%	
Lalpur	56	30.11%	5 Km
Banjaria	40	48.39%	18 Km
Dharampur	90	21.51%	14 Km
Total	186	100%	

Table 2: Socio demographic characteristics of mothers in the study sites (*n*=186)

	Lalpur		Banjaria		Dharampur		Total		*P* value
	%	No.	%	No.	%	No.	%	No.	
Age of mothers									
<18 Years	0	0%	0	0%	0	0%	0	0%	>0.05
18–24 Years	22	39.29%	16	40.00%	42	46.67%	80	43.01%	
25–29 Year	28	50.00%	22	55.00%	31	34.44%	81	43.55%	
30–34 Years	6	10.71%	0	0%	13	14.44%	19	10.22%	
>34 Years	0	0%	2	5.00%	4	4.44%	6	3.23%	
Religion									
Hindu	53	94.64%	37	92.50%	87	96.67%	177	95.16%	>0.05
Muslim	3	5.36%	3	7.50%	3	3.33%	9	4.84%	
Caste									
General	18	32.14%	21	52.50%	19	21.11%	58	31.18%	<.05
Backward Caste	3	5.36%	2	5.00%	8	8.89%	13	6.99%	
Scheduled Caste	35	62.50%	17	42.50%	63	70.00%	115	61.83%	
Scheduled Tribe	0	0%	0	0%	0	0%	0	0%	
Socio – Economic Status									
Upper Middle	16	28.57%	16	40.00%	20	22.22%	52	27.96%	>0.05
Lower Middle	10	17.86%	3	7.50%	9	10.00%	22	11.83%	
Upper Lower	30	53.57%	19	47.50%	60	67.67%	109	58.60%	
Lower	0	0.00%	2	5.00%	1	1.11	3	1.61%	
Type Of Family									
Joint	37	66.07%	33	82.50%	62	68.89%	132	70.97%	>0.05
Nuclear	19	33.93%	7	17.50%	28	31.11%	54	29.03%	
Education Status Of Mothers									
Graduate OR Post Graduate	1	1.79%	1	2.50%	2	2.22%	4	2.15%	>0.05
Intermediate/Diploma	5	8.93%	6	15.00%	11	12.22%	22	11.83%	
High School	10	17.86%	12	30.00%	20	22.22%	42	22.58%	
Middle School	8	14.29%	4	10.00%	12	13.33%	24	12.90%	
Primary School	14	25.00%	4	10.00%	21	23.33%	39	20.97%	
Illiterate	18	32.14%	13	32.50%	24	26.67%	55	29.57%	

under national immunization schedule during 1st year. In Lalpur, 14% mothers had knowledge regarding total numbers of vaccines and schedule given to child under national immunization schedule. 40% mothers of Banjaria and 42.22% mothers of Dharampur had knowledge regarding total numbers and schedule of vaccines given to child under national immunization schedule.

73.12% mothers lacked any knowledge regarding diseases prevented by vaccines given to child under national immunization schedule during 1st year. In Lalpur, 16.07% mothers whereas 30% mothers of Banjaria and 32.22% mothers of Dharampur had knowledge regarding vaccine preventable diseases covered under national immunization schedule.

Table 4 shows distribution of mothers according to source of knowledge regarding child immunization. Out of total 186 mothers, 72.58% mothers reported Family/Community members as a source of knowledge regarding child immunization followed by ASHA who gave knowledge to 64.52% mother, ANM (52.15%), Other health functionary (27.42%) like nurses or obstetric attendant of any health professional, private practitioner (3.76%), and AWW (1.08%). ANM gave education to 64.29% mothers in Lalpur, 60% mothers in Sagahna and 41.11% mothers in Dharampur. ASHA was source of education for 28.57% mothers in Lalpur, 50% mothers in Banjaria and 93.33% mothers in Dharampur. Anganwari worker educated 3.57% mothers in Lalpur. Private practitioners were reported as source of knowledge by 5% mothers in Banjaria and 5.56% mothers in Dharampur. Other Health functionaries educated 64.29% mothers in Lalpur, 35% mothers in Banjaria and 1.11% mothers in Dharampur.

It was observed that ASHA worked better in village near RHTC, whereas family persons were major guiding force in village with sub center. This difference in distribution was statistically significant.

Table 3: Distribution of mothers according to knowledge about vaccine during 1st year of life under national immunization schedule (*n*=186)

	Lalpur		Banjaria		Dharampur		Total		*P* value
Knowledge regarding vaccines schedule and number of vaccines									
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	
Yes	14	25%	16	40%	38	42.22%	68	36.56%	>0.05 (Fisher exact test)
No	42	75%	24	60%	52	57.78%	118	63.44%	
Total	56	100.00%	40	100.00%	90	100.00%	186	100%	
Awareness about diseases prevented by vaccines given under NIS									
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	
Yes	9	16.07%	12	30.00%	29	32.22%	50	26.88%	>0.05 (Fisher exact test)
No	47	83.93%	28	70.00%	61	67.78%	136	73.12%	
Total	56	100.00%	40	100.00%	90	100.00%	186	100%	

Table 4: Distribution of mothers according to source of knowledge regarding child immunization (*n*=186)

Source of education	LALPUR		BANJARIA		DHARAMPUR		TOTAL		*P* value
	No	**%**	**No**	**%**	**No**	**%**	**No**	**%**	
ANM	36	64.29%	24	60%	37	41.11%	97	52.15%	>0.05
ASHA	16	28.57%	20	50%	84	93.33%	120	64.52%	< 0.05
AWW	2	3.57%	0	0%	0	0%	2	1.08%	>0.05
Private Practitioners	0	0%	2	5.00%	5	5.56%	7	3.76%	>0.05
Other Health Functionary	36	64.29%	14	35%	1	1.11%	51	27.42%	< 0.05
Family/Community Member	44	78.57%	36	90%	55	61.11%	135	72.58%	<0.05

*multiple responses

DISCUSSION

The objective of this study was to provide information about the knowledge of mothers regarding vaccination. Indeed, since many factors may influence vaccination coverage, important differences should be taken into account, such as prevalence of vaccine preventable diseases, availability of vaccination centers, level of knowledge and information about vaccination, and different methods used to measure immunization status.

Coverage data are traditionally considered as the best indicator of an immunization program's performance because they reflect the management of, access to, and utilization of services.

In our study, overall ASHA was the most common source of knowledge among health functionaries regarding immunization followed by ANM. It was observed that ASHA reported as source of knowledge more in villages with health center than village without any health center in the geographical boundaries.

Presence/proximity of Center from the village may be a contributing factor for this difference. Presence of Center helps as a supplementary to ASHA's effort. Closed supervision is also possible due to proximity of center. ASHA was one of the motivating factors for utilizing vaccination service. Better functioning of ASHA ensures more motivation to utilize this facility by more chances of creating awareness among mothers regarding vaccination benefits to children and society.

Similar finding were revealed by a study in Lucknow by Nath et. al (2005) that ANM were source of knowledge regarding childhood immunization in 52% mothers. However, ASHA, a new worker was added at grass root level after 2005.[5]

In a study conducted by Lamiya *et al*. in kerala showed that around 64% mothers had knowledge about doses and schedule of DPT, BCG and Measles but other these old vaccines knowledge of newly introduced vaccine was very poor.[6]

Similar finding were there in study conducted by Mugada *et al*. in Andhra Pradesh where 87.27% mothers were aware about vaccination schedule and doses.[7]

CONCLUSION

There was no difference in awareness of mothers in different villages regarding vaccination schedule as well as diseases prevented, therefore distance from health centers and availability of doctors and other qualified health personals didn't affect knowledge as thereafter utilization of immunization services. As family members and community health workers like ASHA were reported as source of information by majority mothers therefore investment on ASHA training and mass communication methods like television, radio, social media campaigns will be more fruitful to create awareness in the present scenario.

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