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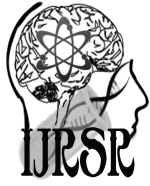
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## Research Article

### KNOWLEDGE, ATTITUDE AND PRACTICE OF MOTHERS OF UNDER FIVE CHILDREN REGARDING IMMUNIZATION IN A SELECTED COMMUNITY, RISHIKESH, UTTARAKHAND

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#### ABSTRACT

**Background:** Immunization is one of the most effective, safest & efficient Public Health Interventions. While the impact of Immunization on childhood morbidity & mortality has been great, its full potential has yet to be reached<sup>1</sup>. As per National Family Health Survey (NFHS-III), 60% of children ages 12-23 months are fully vaccinated against 6 major childhood illnesses; however, most children are at least partially vaccinated; only 9% have received no vaccination at all. Knowledge of vaccine coverage and reasons for poor uptake are essential for the achievement of vaccination coverage.

**Materials and methods:** The present study adopted a cross sectional design, where mothers of under five children from a selected rural community were participated. The subjects' were assessed using the Semi Structured Questionnaire to assess the level of knowledge, the attitude and practice of mothers regarding immunization. The objectives were to study the level of knowledge, the attitude and practice to find the association between knowledge and attitude of the study subjects, and to examine the association between knowledge and practice.

**Results:** The results revealed majority 36(72%) of the subjects mentioned that decision making regarding child's immunization is by both the parents. Almost all of them 48(96%) reported that the source of information regarding immunization is from health care personnel. Information regarding the child's bio social characteristics out of 50 children, majority 23 (46%) of them were of 1-3 years old. Around, 15(30%) of them were between 3-5 years whereas 12(24%) of them were less than one year of age. It was quiet shocking to know that majority 40(80%) of the under five children are partially immunized. Majority 25(50%) had moderately adequate knowledge whereas 16(32%) showed adequate knowledge. About 9(18%) had inadequate knowledge regarding immunization. However, 45(90%) have favourable attitude towards immunization. On the other hand, majority 44(88%) had poor practice whereas 6(12%) demonstrated good practice about their children's immunization. There was significant association was found between subjects' level of knowledge and attitude while no association was found between knowledge and practice of mothers of under five children regarding immunization.

**Conclusion:** It is very clear that the partial vaccination among under five children in Uttarakhand, India warrant special attention. The target should be the entire population, and educational programmes promoting immunization and parental motivation, accessibility, and follow-up should be instituted.

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## INTRODUCTION

Vaccination is one of the most cost-effective interventions to prevent major illnesses that contribute to child mortality in the country, particularly in environments where malnourished children, overcrowding, poverty and illiteracy reign. Knowledge (K), positive attitudes (A) and appropriate perceptions (P) about vaccination hence become one of the

main tools to reduce the incidence of vaccine preventable diseases (VPDs) thus reducing childhood mortality and morbidity. In our society, a large chunk of the population lives in rural areas, where mothers are illiterate and have numerous myths about vaccination; this results in children being unimmunized and susceptible and hence causes a serious policy concern. Evidence about the inequalities in vaccination practices exist even though childhood immunization has been

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an important part of maternal and child health services since the 1940s<sup>2</sup>.

In 2010 it was estimated that 1.7 million children died from vaccine preventable diseases. It was also noted that 19.3 million children had been incompletely vaccinated, leaving them susceptible to vaccine preventable disease mortality and morbidity. Approximately 50% of all under vaccinated children live in three countries, India being one of them<sup>3</sup>.

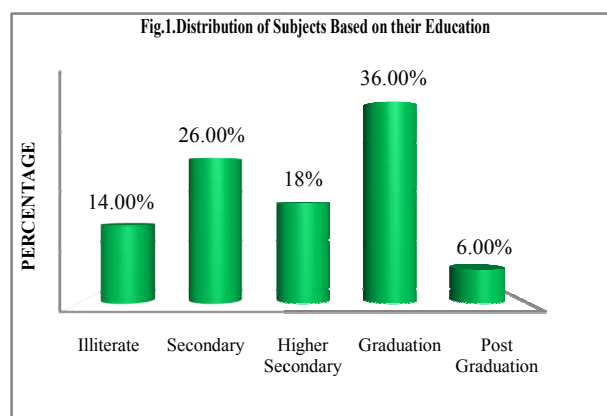
One of the most significant contributions of the medical fraternity to mankind is the advent of vaccines. They are the most powerful, safe and cost-effective measures for prevention/control of a number of diseases.

The historical success of eradicating the dreaded disease, Smallpox, prompted World Health Organization (WHO) to ask its member countries to launch immunization against six vaccine preventable diseases in its national immunization schedule. In May 1974, the WHO launched the Expanded Immunization Programme (EPI) globally, with focus on prevention of 6 vaccine-preventable diseases by the year 2000. In India, EPI was launched in 1978 and it was re-designated as the Universal Immunization Programme (UIP) in 1985, with a goal to cover at least 85% of infants.

The National Family Health Survey (NFHS) shows a marginal improvement in the vaccination coverage of India over the years. NFHS-1 conducted in 1992-93 reported a vaccination coverage of 35.4%, which rose to 42% in NFHS-2 conducted in 1998-99. The latest NFHS-3 conducted in 2005-06 reported vaccination coverage of 43.5%.

The UNICEF coverage evaluation survey for the year 2009 showed that the immunization coverage had improved to 61%. Nevertheless, these figures are way short of the target of 85% coverage<sup>4</sup>.

**There has been an increase in full vaccination coverage between NFHS-2 (41%) and NFHS-3 (60%).** The coverage of each of the vaccines has increased by 1-18 percentage points between NFHS-2 and NFHS-3. In spite of the Pulse Polio Campaign which is attempting to eradicate the disease in India, one-fifth of children in Uttarakhand still have not received three doses of polio vaccine<sup>5</sup>.



## MATERIALS AND METHODS

A cross sectional design, was used for conducting the study. Convenient sampling was adopted where 50 mothers of under five children who attended the PHC in Rishikesh were selected.

**Table 1** Frequency and Percentage Distribution of Subjects Based on Their Personal Profile (n=50)

Sl.No	Sample characteristics	Frequency	Percentage	
1.	Age	21-25 Years	10	20%
		26-30 Years	30	60%
		31-35 Years	10	20%
2.	Religion	Hindu	40	80%
		Muslim	07	14%
		Others	03	6%
		Illiterate	07	14%
3.	Education	High School	13	26%
		Pre degree	09	18%
		Graduation	18	36%
		Others	03	6%
4.	Type of family	Nuclear	25	50%
		Non-nuclear	25	50%
		Housewife	31	62%
		Govt Employed	03	6%
5.	Occupation	Self employed	10	20%
		Housemaid	05	10%
		Others	01	2%
		>Rs.5000	07	14%
6.	Monthly Family Income	Rs.5001-10,000	08	16%
		Rs.10001-Rs.20,0000	27	54%
		>Rs.20000	08	16%
7.	Socio Economic Background	Rural	50	100%
		Urban	0	-
8.	Decision Maker (Immunization regarding)	Mother	06	12%
		Father	08	16%
		Both	36	72%
		Others	0	-
		Neighbours	0	-
9.	Source of information	Health care Personnel	48	96%
		Media	02	4%
		Others	0	-

Ethical guidelines like confidentiality, anonymity, informed consent were followed throughout the study. The research tool consists of socio demographic profile for mother and child, (age, religion, education, occupation, monthly family income, decision making regarding immunization, source of information, child's age, sex, birth order, immunization status) and semi structured questionnaire consisting dichotomous questions measuring knowledge, attitude and practice of mothers of under five children regarding immunization were used. Nominal variables were summarized as counts and percentages. Chi square test was used for association between the knowledge, attitude and practice.

## RESULTS

Analyses in the socio demo graphic data revealed information regarding personal profile like the age, religion, education, type of family, occupation, monthly family income, socio economic back ground, decision maker regarding immunization, source of information. Among 50 subjects 10(20%) of them were 21-25 years, 30(60%) of them were between 26-30 years old whereas 10(20%) of the mothers of under five children were 31-35 years old. Majority 40 (80%), of the study subjects were Hindus, 7(14%) of them were Muslims while 3(6%) of them belong to other religion. out of 50 subjects 18 (36%) of them graduates. The secondary and higher secondary (Pre degree) school attendees were about 13(26%) and 9(18%) of them respectively. However, 7(14%) mothers were illiterates and 3(6%) of them had post graduation. Subjects belong to nuclear family and non nuclear family have equal percentage 25 (50%) in each. Most of the mothers of under five children 31 (62 %) are housewives, and 10 (20%) of them doing self employment, 5(10%) of them work as housemaids while 3 (6%) of them work in govt sectors.

Only one (2%) mentioned other jobs. All 50(100%) of the subjects belong to rural community. Majority 36(72%) of the subjects mentioned that decision making regarding child's immunization is by both the parents. Around 8(16%) of them quoted father is the decision makers whereas 6(12%) of them reported mothers are decision makers regarding immunization. Almost all of them 48(96%) of the mothers reported that the source of information regarding immunization is from health care personnel and only 2(4%) of have received information through media. Information regarding the child's bio social characteristics like age, gender birth order and immunization status also studied. Among 50 children, majority 23 (46%) of them were of 1-3 years old. Around, 15(30%) of them were between 3-5 years whereas 12(24%) of them were less than one year of age. Regarding gender 28(56%) of them were females while 22(44%) of them were male children. almost 25(50%) of them are second child while 22(44%) of them first born. About 3(6%) of their birth order is third and above. Majority 40(80%) of the under five children are partially immunized whereas only 10(20%) of them are fully immunized.

Majority 25(50%) had moderately adequate knowledge whereas 16(32%) showed adequate knowledge. About 9(18%) had inadequate knowledge regarding immunization. Regarding subject's attitude towards immunization, majority 84% of the mothers felt vaccination is important while 16% of them did not realise the importance.

**Table 2** Frequency and percentage distribution of subjects based on the bio social characteristics of child (n=50)

Sl.No	Sample characteristics	Frequency	Percentage	
1	Age	<1 year	12	24%
		1-3 Years	23	46%
		3-5 Years	15	30%
2	Gender	Male	22	44%
		Female	28	56%
3	Birth order	First	22	44%
		Second	25	50%
		Third & Above	03	6%
4	Immunization Status	Fully Immunized	10	20%
		Partially Immunized	40	80%

**Table 3** Frequency and percentage distribution of subjects based on the level of attitude scores regarding immunization (n=50)

Sl.No	Category	Frequency	Percentage
1	Favourable (3-4)	45	90%
2	Unfavourable (0-2 )	05	10%

**Table 4** Frequency and percentage distribution of subjects based on the level of scores in practice regarding immunization (n=50)

Sl.No	Category	Frequency	Percentage
1	Good practice(3-4)	06	12%
2	Poor practice(0-2 )	44	88%

**Table 5** Association between knowledge and attitude of the study subjects

Sl.No	Knowledge score	Attitude		Chi square value	p value
		Favourable	Unfavourable		
1.	Adequate	15	1	14.892	0.0006(S)
2.	Moderately adequate	25	0		
3.	Inadequate	05	04		

S- Significant; NS-Not Significant

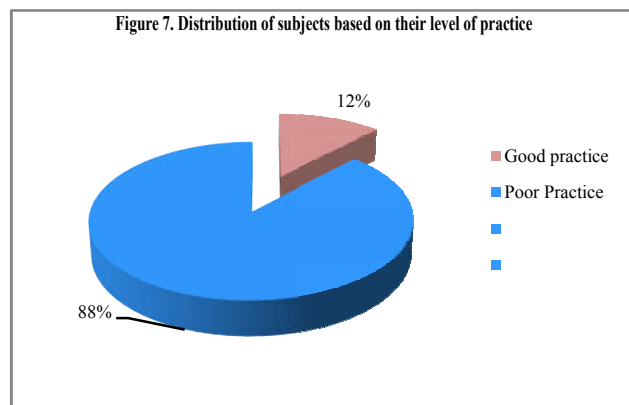
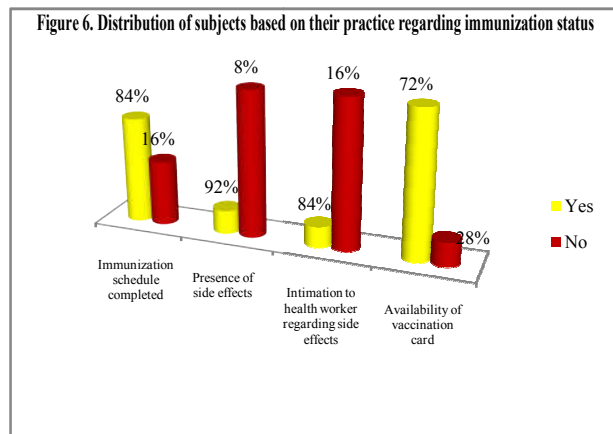
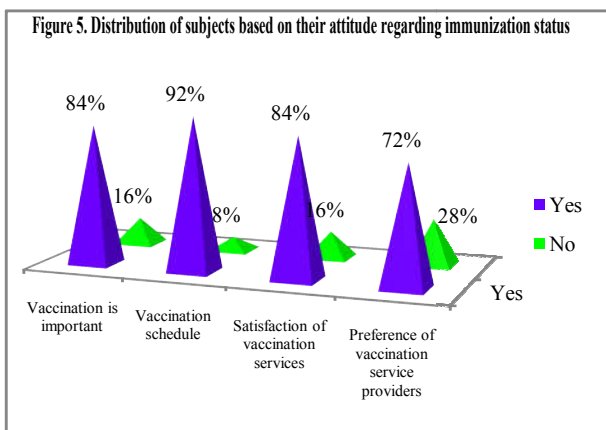
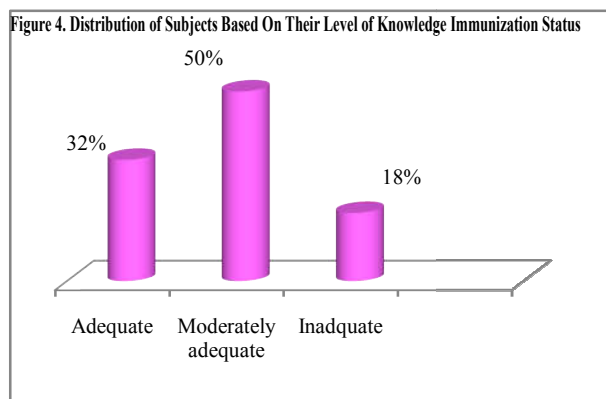
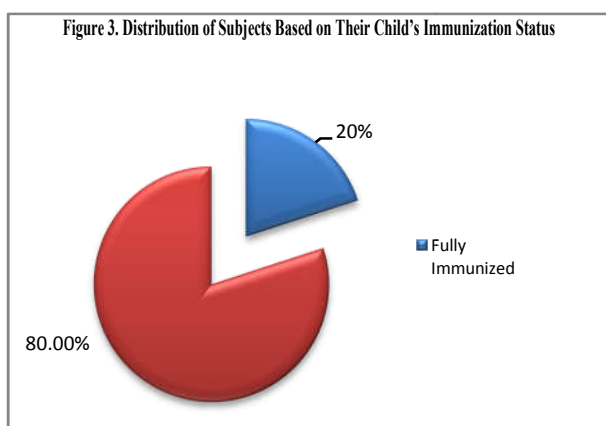
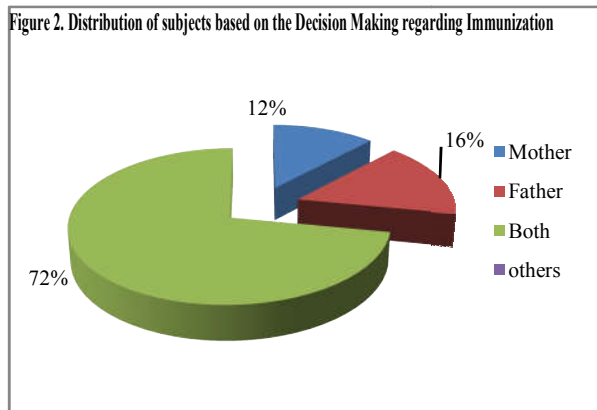
**Table 6** Association between knowledge and practice of the study subjects

Sl.No	Knowledge score	Practice		Chi square value	p value
		Good	Poor		
1.	Adequate	3	13	3.096	0.2127(NS)
2.	Moderately adequate	01	24		
3.	Inadequate	02	07		

S- Significant; NS-Not Significant

Likewise, when asked to the mothers whether it was important to follow and complete the schedule, 8% of them answered it was not needed to adhere a schedule. Most mothers and 84% were satisfied about the vaccination services. Around 28% of them preferred to go a private health facility for vaccination while 72% of them preferred government centres. Majority 45(90%) have favourable attitude whereas only 5(10%) demonstrated unfavourable attitude towards immunization. Around 84% of them reported that immunization schedule is completed as on age while 16% of them had incomplete vaccination. Most of them (92%) gave history of side effects followed by vaccination. However, 16% of the mothers did not intimate about the side effects to health workers. It is also found that 28% of the rural mothers of under five children did not possess a vaccination card. Majority 44(88%) had poor practice whereas 6(12%) demonstrated good practice about their children's immunization. There was significant

association found between knowledge and attitude of the study subjects with the p value of 0.006.



## DISCUSSION

Worldwide studies report that successful immunization of children depends highly on mothers existing knowledge and positive attitude<sup>5</sup>. In this section, an attempt is made to highlight the important findings of the present study and to discuss them by comparing and contrasting with findings of the earlier studies. Among the participants two third of mothers were between the age of 26-30 years old. The similar findings also found in Mereena study in which the majority belong to 26-30 years old<sup>6</sup>. About educational status of the mothers 36% of them were graduates and 26 % of them had higher secondary education. This seemingly high literacy level may have influenced of knowledge of vaccination. It is studied that Parental knowledge as well as maternal educational level have been documented to influence immunization uptake. The findings were similar to [Rachana Kapoor and Nnenna TB et al](#) were most of the mothers had tertiary or secondary education<sup>7,8</sup>.

In the present study majority 36(72%) of the subjects mentioned that decision making regarding child's immunization is by both the parents. However, [Soundarya M et al](#) study reported that mothers were the main decision makers regarding vaccination of the child in both urban and rural setup<sup>3</sup>. Almost all of them 48(96%) of the mothers reported that the source of information regarding immunization is from health care personnel. Similar finding also mentioned in [Soundarya M et al](#) and [Bofarraj A.M.](#) study in which anganwadi worker and/or the paramedical worker was found to be the major source of information regarding immunization<sup>3,9</sup>.

It was shocking to know that majority 40(80%) of the under five children are partially immunized whereas only 10(20%) of them are fully immunized. The immunization coverage found by this study was comparable to M.M. Angadi study in which about 34.84% were fully immunized, 62.58% were partially immunized and 2.58% were unimmunized<sup>4</sup>. The results were however, much lower as compared to the DLHS-3 reported NFHS-III (2005-06), 60% of children in Uttarakhand, aged 12-23 months are fully vaccinated most children are at least partially vaccinated; only 9% have received no vaccination at all<sup>6</sup>.

Around two third of mothers had moderate to adequate knowledge concerning immunization. Similar results found in Jisy Jose *et al* study where 30% of mothers had poor knowledge, 43.4% of mothers had average knowledge, 23.4% of mothers had good knowledge and 3.33 mothers had excellent knowledge<sup>10</sup>.

The present study showed majority 45(90%) of the mothers had favourable attitude whereas only 5(10%) demonstrated unfavourable attitude towards immunization. There was also significant association found between knowledge and attitude of the study subjects. On the contrary, majority of the mothers 44(88%) had poor practice about their children's immunization. Similarly, Nisar N *et al* concluded that the knowledge of mothers about vaccination was found inadequate with strong positive attitude and limited practices<sup>6</sup>.

#### Implications

The study findings indicate that nurses should take initiative in organising and conducting mass education programme at different levels of health care system. It is essential for nurses to not only impart knowledge as well as practice.

#### Limitations and recommendations

As study adopted non probability convenient sampling, hence generalization of findings outside the study sample is limited. Long term, multiple point follow up is needed. Qualitative research can be carried out to understand the various reasons for poor practice about children's immunization.

#### CONCLUSION

There is a need to increase awareness and knowledge about the benefits and importance of vaccination, as well as the harmful consequences of non-complete immunization. A planned educational programme is needed; the educational level of the parents needs to be taken into consideration when the programme is planned, especially as regards those with a lower educational level.

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