

Original Research Article

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Knowledge regarding immunization among mothers of under-five children in Uttarakhand

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ABSTRACT

Background: Immunization is one of the most impactful and cost-effective health investments globally that helps in reducing the burden of infectious diseases keeping children safe. Mothers are the major role players with regard to their children's immunization.

Methods: A descriptive cross-sectional study was conducted to assess knowledge regarding immunization among mothers of under-five children in the Doiwala block of Dehradun, Uttarakhand. A total of one hundred mothers of under-five children were conveniently selected through door-to-door survey. A structured knowledge questionnaire on under-five immunization was administered through the interview technique to assess the knowledge of the mothers.

Results: Among 100 mothers of under-five children 13% had poor knowledge, 63% had average knowledge and 24% had good knowledge regarding under-five immunization. There was significant association between age, education status and socioeconomic status of mothers with knowledge score regarding under-five immunization.

Conclusions: There is a strong need to increase awareness and knowledge about immunization among children; its benefits and importance. There is also a need to educate people especially mothers regarding harmful consequences of incomplete immunization of children.

Keywords: Knowledge, Mothers, Under five immunization, Uttarakhand

INTRODUCTION

Immunization is a cornerstone of public health and one of the most cost-effective interventions available worldwide that significantly contributes to the decline in childhood morbidity and mortality. It is estimated that, each year worldwide, vaccines prevent up to 3 million deaths.^{1,2} In India universal immunization programme (UIP) is one of the largest public health programmes targeting close of 2.67 crore newborns and 2.9 crore pregnant women annually. It is one of the most cost-effective public health interventions and largely responsible for reduction of vaccine preventable under-5 mortality rate. Under UIP,

immunization is provided free of cost against 12 vaccine preventable diseases: nationally against 9 diseases-diphtheria, pertussis, tetanus, polio, measles, rubella, severe form of childhood tuberculosis, hepatitis B and meningitis and pneumonia caused by hemophilus influenza type B.

Sub-nationally against 3 diseases-rotavirus diarrhoea, pneumococcal pneumonia and Japanese encephalitis; of which rotavirus vaccine and pneumococcal conjugate vaccine are in process of expansion while JE vaccine is provided only in endemic districts. A child is said to be fully immunized if child receives all due vaccine as per

national immunization schedule within 1st year age of child. The two major milestones of UIP have been the elimination of polio in 2014 and maternal and neonatal tetanus elimination in 2015.³

Knowledge, positive attitudes and appropriate perceptions about vaccination hence become one of the main tools to reduce the incidence of vaccine preventable diseases (VPDs) thus reducing childhood mortality and morbidity. The UNICEF coverage evaluation survey for the year 2009 showed that the immunization coverage had improved to 65%. Nevertheless, these figures are way short of the target of 85% coverage. Evidence about inequalities in vaccination practices still exists.⁴

METHODS

The study was a descriptive cross-sectional survey carried out to assess knowledge regarding under-five immunization among mothers of under-five children in Doiwala block of Dehradun, Uttarakhand in August 2022. A total of 100 mothers of under-five children were conveniently selected through door-to-door survey.

Inclusion criteria

Mothers of under-five children were selected who were available at the time of data collection and understands Hindi or English language.

Exclusion criteria

Mothers of under-five children who did not give consent to participate in the study were excluded.

The tool included sociodemographic profile of the mothers of under-five children and self-structured questions related to knowledge regarding under-five immunization. Validity of the tool was established by experts in the field of community medicine department, medical surgical nursing, pediatric nursing and community health nursing. Reliability of the knowledge questionnaire was established by split half method and r value obtained was 0.8 (Cronbach's alpha). The tool was translated to Hindi language with the help of expert. Pretesting was done on 10 samples. Written consent was taken from each sample before data collection. Data was collected through face-to-face interview technique. The data was analyzed by using descriptive and inferential statistics.

RESULTS

Sociodemographic characteristics of the participants

As depicted in Table 1, the study enrolled 100 mothers of under-five children. Of these most 73% were in the age group of 19-31 years and 27% were in the age group of 32-44 years. Among these 93% women were homemakers and 07% were working mothers. 58%

women were intermediate while 42% were graduate and above. Most 64% of women belonged to above poverty line while 36% were below poverty line. Most 73% women had joint family and 27% had nuclear family. The number of children of most of the women 92% were below three. Majority of the women 91% reported that they received information regarding immunization through health care workers.

Table 1: Sociodemographic characteristics of the study participants (n=100).

Demographic variable	N	Percentage (%)
Age (in years)		
19-31	73	73
31-44	27	27
Occupation of mother		
Homemaker	93	93
Working mother	7	7
Education status of mothers		
Up to intermediate	58	58
Graduate and above	42	42
Type of family		
Joint	73	73
Nuclear	27	27
Socioeconomic status		
Above poverty line	64	64
Below poverty line	36	36
Number of children		
<3	92	92
3 and above	8	8
Source of information about immunization		
Health workers	91	91
Others	9	9

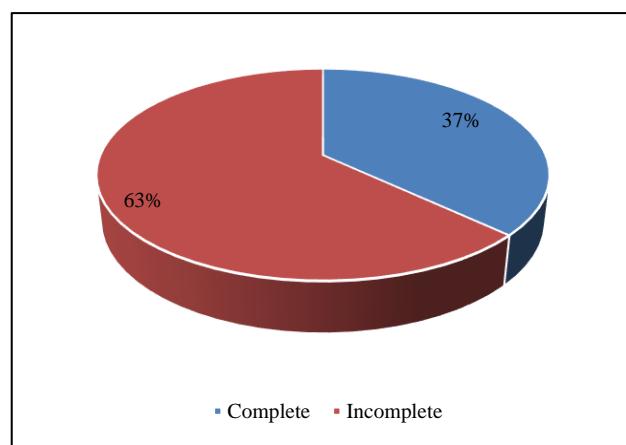


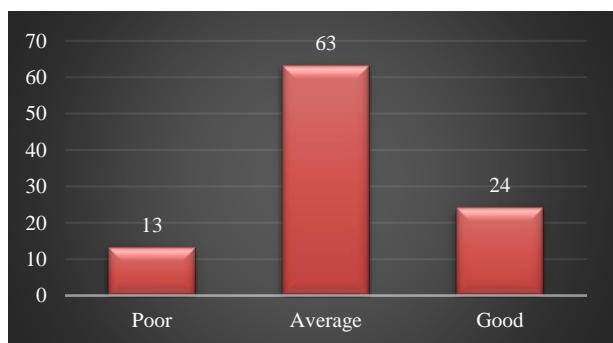
Figure 1: Immunization coverage among under-five children (n=100).

Knowledge regarding under-five immunization

The total score of the knowledge questionnaire was 24. The lowest range of scores was 04 and the highest range of score was 17. The mean and standard deviation of knowledge score was 11.27 ± 2.94 .

Table 2: Mean, standard deviation, median, range of knowledge score of mothers regarding under five immunization (n=100).

Variables	Maximum score	Range of score (max/min)	Median	Mean±SD
Knowledge score	17	4-17	12	11.27±2.94

**Figure 2: Knowledge score of mothers regarding under-five immunization.**

Among one hundred mothers of under-five children thirteen percentages had poor knowledge, sixty-three percentages had average knowledge and twenty-four percentages had good knowledge regarding under-five immunization.

Association of knowledge score with demographic variables

Table 3 shows that there was significant association between age, education status of mothers and socioeconomic status with knowledge score regarding under-five immunization.

Table 3: Association of knowledge score with selected demographic variables (n=100).

Demographic variables	<Median	≥ Median	Chi square	P value
Age (in years)				
19-31	50	23		
31-44	12	15	4.97	0.0278
Occupation of mother				
Homemaker	58	35		
Working mother	4	3	0.0167	0.8972*
Education status of mothers				
Up to intermediate	42	16		
Graduate and above	20	22	6.3565	0.0116
Type of family				
Joint	46	27		
Nuclear	16	11	0.1179	0.7313
Socioeconomic status				
Above poverty line	34	29		
Below poverty line	28	9	4.6621	0.03084
Number of children				
<3	56	37		
3 and above	16	7	0.6847	0.4079
Source of information about immunization				
Health workers	57	34		
Others	5	4	0.0033	0.9540

*Yates correction df=1; p<0.05.

DISCUSSION

The present reported that 73% were in the age group of 19-31 years and 27% were in the age group of 32-44 years. The similar findings also found in study conducted by Mereena on knowledge and attitude regarding vaccines among mothers of under five children in which the majority of mothers belonged to 26-30 years old.⁵ The present study also reported that 58% women were intermediate while 42% were graduate and above. The findings were similar to Nnemba et al where most of the mothers had tertiary or secondary education.⁶ In present

study majority of the women 91% reported that they received information regarding immunization through health care workers. Similar findings were also mentioned in the study conducted by Soundarya et al and Bofarraj in which paramedical worker was found to be major source of information regarding immunization.^{7,8}

The study evaluated the knowledge of mothers of under-five children regarding immunization. The maximum score of the knowledge questionnaire was 17 and the range of score was between 4-17, median was 12, mean was 11.27 with standard deviation 2.94. The findings of

the study revealed that 13% had poor knowledge, 63% had average knowledge and 24% had good knowledge regarding under-five immunization. Similar results found in study conducted by Jisy et al in which 30% of mothers had poor knowledge, 43.4% of mothers had average knowledge, 23.4% of mothers had good knowledge regarding under-five immunization.⁹

The study also reported that there was significant association between age and education status of mothers and socioeconomic status with knowledge score regarding under-five immunization. Similar findings were seen in a study done by Vikram et al that showed significant association between maternal education and child immunization status.¹⁰

The limitation of this study was the small sample size; hence, it is recommended to conduct further studies using larger sample size.

CONCLUSION

The study concluded that majority (63%) of the mothers had average knowledge whereas 13% had poor knowledge regarding immunization. According to this data there is a strong need to increase awareness and knowledge about immunization among children; its benefits and importance. There is also a need to educate people especially mothers regarding harmful consequences of incomplete immunization of children.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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