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Assessment of knowledge and attitude of mothers of under five children regarding Immunization

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Abstract
Children below five years of age are vulnerable and liable to get various diseases and disabilities which may lead to high mortality. Immunization is one of the most successful and cost effective public health interventions against diseases. The current study aimed to assess the knowledge and attitude of mothers of under five children regarding immunization; to determine association of level of knowledge and attitude of mothers of under five children regarding immunization with selected variables; to find out the relationship between knowledge and attitude of mothers of under five children regarding immunization. A quantitative research approach using descriptive research design was adapted for the study. The data was collected among 100 mothers of under five children of Mullana village, Ambala, Haryana by purposive sampling technique and performa of sample characteristics, structured knowledge questionnaire and five point attitude scale were used to collect the data. The findings of the study revealed that 45% of the mothers were in the age group of 26 -31 years. Approximately 34% of mothers had good knowledge, 52% of mothers had highly favorable attitude towards immunization. There is no significant association between knowledge and attitude scores of mothers of under five children with selected variable. The study also revealed no significant correlation between knowledge and attitude of mothers regarding immunization.

Keywords: Under Five Children, Immunization, Mothers, Knowledge and Attitude

1. Introduction

"Children are like buds in a garden and should be carefully and lovingly nurtured, as they are the future of the nation and the citizens of tomorrow." *-Jawaharlal Nehru*

Children below five year of age are vulnerable and liable to get various diseases and disabilities which may lead to high mortality. It is therefore very important to provide comprehensive care services to children in order to promote the optimal health level. The health of children is also very important not only for the asset and future of their families and nation but also because health status, health behavior and the life style thus formed during childhood determine quality of life in the following year of the life [1].

Overall worldwide immunization coverage in the develop world has improve during past decade. From the early 1980's to the early 1990's the reported coverage increase under 20% to approximately 80% and millions of deaths were estimated to have been avoided as a result during this period. Despite these advances, disease that are preventable through immunization still remain a major public health problem in many developing countries [2].

In 2014, the united states experienced a record number of measles cases, with 667 cases from 27 states reported to CDC's National Center For Immunization And Respiratory Diseases (NCIRD): this is the greatest number of cases since measles elimination was documented the U.S. in 2000.In 2015 188 people from 24 states and district of Colombia were reported have measles. In 2016, 70 people from 16 states were reported have measles [2].

In 2011, children below five year of age contributed to 699.1 million population in the world with 158.8 million contributing to the population of India [3]. WHO data showed that number of children under one year of age who did not receive DPT3 vaccine worldwide: 21.8 million in 2013 compared to 22.8 million in 2012. From these 70% children from ten countries: Democratic Republic of the Congo, Ethiopia, India, Indonesia, Kenya, Mexico, Nigeria,

Pakistan, Viet Nam and South Africa [4]. India has the largest number of births in the world - more than 26 million a year - and also accounts for more than 20% of child mortality worldwide [5].

In 2012, nearly one in five infants-22.6 million children missed out on the basic vaccines they need to stay healthy. Low immunization levels compromise gains in all other areas of health for mothers and children. The poorest, most vulnerable children who need immunization the most continue to be the list likely to get it [6].

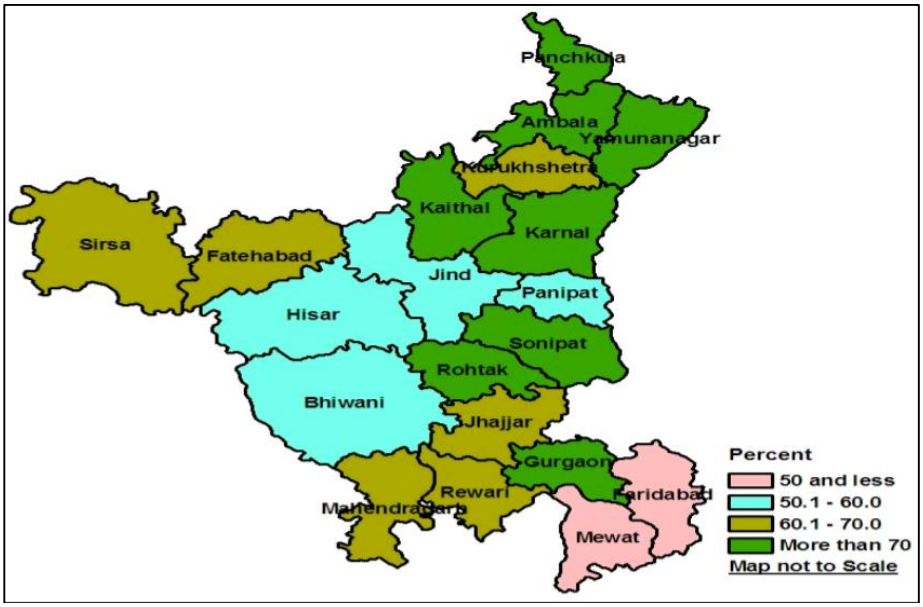
From January 1 to April 22, 2017, 61 people from 10 states (California, Florida, Michigan, Minnesota, Nebraska, New Jersey, New York, Pennsylvania, Utah, and Washington) were reported to have measles [7].

According to the most recent coverage evaluation survey (CES) nation wise survey coverage all state and union territories of India conducted during November 2009 to January 2010 by UNICEF, the national fully immunized (FI) coverage against the six vaccines included in UIP in the age group of 12-13 months old children is 61% whereas it was 54.1% and 47.3% as reported by District level Household facilities survey (DLHS-3) (2007-10) and NFHSIII (2005-06) respectively (18-20) regarding coverage of individual antigen in the similar age group. The CES 2009 reported BCG, OPV and DPT3 doses coverage as 86.9%, 70.4%, 71.5% and 74.1% respectively [8].

Immunization is one of the most successful and cost effective public health interventions in the constant effort of human beings against diseases that affect our wellbeing. Immunization has prevented more deaths in the past years than any other health intervention globally. WHO (2013) also stated that immunization is a proven tool for controlling and eliminating life-threatening infectious disease and has been estimated to alleviate 2 to 3 million deaths each year and further stated that although global vaccination coverage is holding steady but an estimated 22 million infants worldwide are still missing out on basic vaccines [9].

While we feel proud that India has the largest population of youths, it is also true that our country has the dubious distinction of higher mortality rate among children less than 5 years of age. One of the reasons for these is said to be pneumonia. According to latest 'states of world's children report' by UNICEF, more the 1000 children under the age of 5 die of pneumonia every day in India. Of the 2.1 million children die every year in India, 19% are due to pneumonia [10].

In Haryana total numbers of children below five year is 3.26 million [9]. Haryana, among children aged 12-35 months, about half of them (49.4 percent) had received at least one dose of Vitamin-A and only nine percent of children had received 3-5 doses of Vitamin-A supplementation. About one-third (32.9 percent) of children had Hepatitis-B vaccination [11].



(Source: Haryana District Survey 2007-2008**)**

Fig 1: Full immunization coverage of children aged 12-23 months by the District

Figure 1 shows that more than 70% of children aged 12-23 months were fully immunized at Ambala District of Haryana and ≤50% belongs to Hisar, Jind, Panipat and Bhiwani.

Haryana also adopted District Health Information System (DHIS) portal for addressing state-specific data requirements. The reported immunization data captured in the Health Management Information System (HMIS) portal is the most exhaustive database. The reported data is collected from health public facilities across the country and is updated every month. The reported immunization data captured within the health information system have the potential to identify challenges and barriers to improve immunization coverage [12].

Previous research has reported that there is a need to create awareness among the public regarding the vaccine preventable diseases and the importance of childhood immunization [4]. People need to actively seek their child's vaccination and reach the local health centers to increase vaccination coverage [13]. Mothers' knowledge, attitude and practices are a very important factor that influences a child's immunization during the first year of life [14].

The mother plays a major role in promoting the health of children. Several misconception, ignorance and inadequacy

of knowledge in relation to optional vaccine is prevalent among mothers especially under five children [15].

2. Aims and objectives

Objectives of the study were.

1. To assess the knowledge and attitude of mothers of under five children regarding immunization in selected rural areas of Ambala District (Haryana).
2. To determine association of level of knowledge and attitude of mothers of under five children regarding immunization with selected variables.
3. To find out the relationship between knowledge and attitude of mothers of under five children regarding immunization.

3. Methodology

A quantitative research approach using descriptive research design was adapted for the study. The data was collected among 100 mothers of under five children of Mullana village, Ambala, Haryana were selected on the basis of inclusion and exclusion criteria by using purposive sampling technique. Mothers who were mentally and physically challenged and were not present at the time of data collection were excluded from the study. Structured tools were used to collect the data from 100 mothers of under five children who were able to understand hindi or English by interview. To ensure the content validity of tools, it was submitted to 7 experts in the field of nursing. Experts were requested to judge the items on the basis of their relevancy, clarity, feasibility and organization of items included in the study.

Pre testing of the structured knowledge questionnaire and attitude scale was done on 15-02-2017 by administering tools to 5 mothers of under-five children in Buddhio village of Ambala district, Haryana. After obtaining the formal approval, the pilot study was conducted from 16-01-2017 to 19-01-2017 at Mullana village, Ambala. A Formal administrative approval was obtained from the Sarpanch of Mullana village for conducting the final study.

Data for the final study was collected from 21-02-2017 to 28-02-2017 which consists of three sections. Section I consists of selected variable like age, education, qualification, occupation, religion, number of children, type of family, and previous knowledge regarding immunization. Section II consists of 28 knowledge questionnaire categorized as very good (>75%), good (61-75%), average (50-60%) and below average (< 50%), score for every right answer was one mark and for every wrong answer, zero mark was given to the respondent. The maximum score for knowledge questionnaire was 28. Section III consist of 18 items which are based on the attitude of mothers of under five children regarding immunization and categorized as highly favorable (>80%), moderately favorable (71-80%) and poorly favorable (< 70%).

The structured knowledge questionnaire and attitude scale were administered and the response of the participants were recorded in the tool at the same time. Twenty five mothers were interviewed per day. On an average it took 40 minutes to collect the data from each subject by interviewed method.

Results

The data was analyzed and interpreted by using descriptive and inferential statistics according to the objectives of the study. The data was organized and presented under the following sections.

Section I: Description of selected variables

Table 1: Frequency and percentage distribution of selected variables, N=100

S. No.	Demographic Variables	f	(%)
1	Age in years		
1.1	20-25	43	43
1.2	26-31	45	45
1.3	32-37	11	11
1.4	38-43	01	01
2	No. of living under five children		
2.1	One	70	70
2.2	Two	30	30
3	Religion		
3.1	Hindu	98	98
3.2	Sikh	02	02
4	Marital status		
4.1	Married	100	100
5	Education status of Mother		
5.1	No formal education	02	02
5.2	Primary	04	04
5.3	Middle	18	18
5.4	Secondary	33	33
5.5	High secondary	29	29
5.6	Graduate and above	14	14
6	Education status of Father		
6.1	No formal education	03	03
6.2	Primary	04	04
6.3	Middle	18	18
6.4	Secondary	39	39
6.5	High secondary	24	24
6.6	Graduate and above	12	12
8	Occupation of Father		
8.1	Unemployed	01	01
8.2	Private employed	42	42
8.3	Self employed/ Business	54	54
8.4	Govt. employed	01	01
8.5	Any other	02	02

Data presented in table 1 shows that 45 (45%) mother were in the age group of 26 -31 years while 70(70%) mother had one living child and 98(98%) mothers belongs to Hindu religions while 95(95%) mother were home maker. About one third of the mother (33%) and father (39%) were educated upto secondary level.

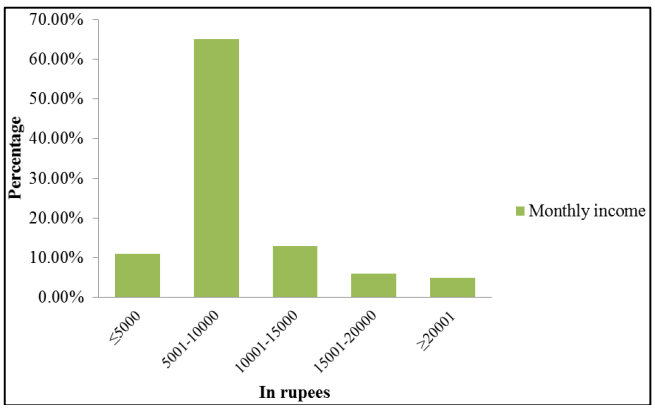


Fig 2: Bar diagram showing distribution of mothers of under five children according to monthly income of family

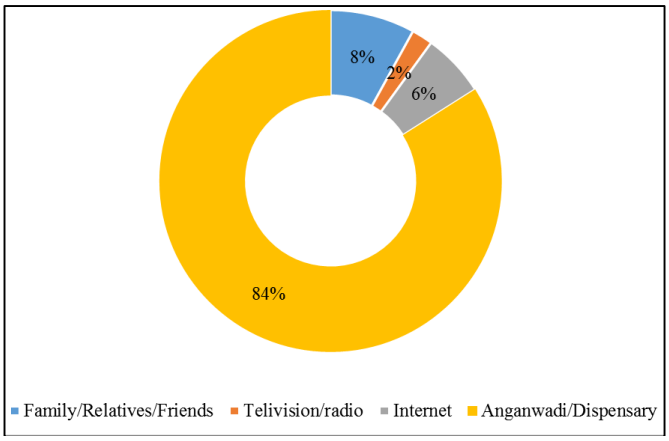


Fig 3: Doughnut diagram showing distribution of mothers of under five children according to source of previous knowledge regarding immunization

Section II: Descriptionof knowledge of mothers of under five children regarding immunization

Table 2: Mean, median and standard deviation of mother of under five children in terms of knowledge, N=100

Test	Mean+ SD	Median
Knowledge	16.93+3.87	17

Minimum possible score=00
Maximum possible score=28

The date presented in the table 2 reveals that the mean, standard deviation and median of knowledge of mothers of under five children regarding immunization were 16.93%, 3.87%& 17 respectively.

Table 3: Frequency and percentage distribution of mothers of under five children in terms of knowledge, N=100

S. No	Level of knowledge	f (%)
1.	Very good (≥75%)	14 (14%)
2.	Good (61-75%)	34 (34%)
3.	Average (51-60%)	23 (23%)
4.	Below average (≤50)	29 (29%)

Minimum Score=0
Maximum Score=28

Data presented in table 3 depicts that only 14% and 34% of the mothers of under five children had very good and good knowledge respectively regarding immunization while 23% of mother had average and 29% of the mothers had below average knowledge regarding immunization.

Section III: Description of attitude scale of mothers of under five children regarding immunization.

Table 4: Median, mean and standard deviation of mothers of under five children in terms of attitude N=100

Test	Mean+SD	Median
Attitude	74.77+ 3.46	74

Minimum possible score=18
Maximum possible score = 90

The data presented in table 4 indicates that the mean, median and standard deviation of attitude scores of mothers of under five children regarding immunization were 74.77, 74 & 3.457 respectively.

Table 5: Frequency and percentage distribution of mothers of under five children in terms of attitude, N=100

S. No	Attitude	f(%)
1.	Highly favourable (81-100%)	52 (52%)
2.	Moderately favourable (70-80%	48 (48%)

Minimum score=18
Maximum score=90

Data presented in table 5 shows that 52% of mothers had highly favourable attitude while 48% of mothers had moderately favourable attitude towards immunization.

Section IV: Association between the level of knowledge and attitude scores with selected variables.
Chi square values of knowledge and attitude scores of mothers of under five children with all selected variable were found to be statistically non- significant at 0.005 level of significance.

Section V: Correlation between the knowledge and attitude scores of mothers of under five children regarding immunization

Table 6: Correlation between the knowledge and attitude of mothers of under five children regarding immunization, N=100

Test	Mean+ SD	R
Knowledge	16.93+ 3.87	0.162^{NS}
Attitude	74.77+ 3.46	

r(98)=0.197, ^{NS}-Not significant (p≤0.05)

The finding of the table 6 revealed that the correlation between knowledge and attitude scores of mother of under five children regarding immunization was 0.162 suggesting no correlation between knowledge and attitude of mothers regarding immunization.

4. Discussion

The result of the present study revealed that 45(45%) of the mothers were in the age group of 26 -31 years and 98(98%) mother's belongs to Hindu religions. Majority 95(95%) mother were home maker. Majority 78(78%) of the mother's of under five children belongs to joint family. The findings of the study were consistent to study conducted by M.M. Angadi *et al.* [16] on knowledge, attitude and practices on immunization of children in urban slums of Bijapur city, Karnataka, India. Overall results had shown that 55.48% mothers were in the age group of 21-25 years, majority of the mothers were housewives (85.16%) and 50.32% mothers were illiterate. A lack of information and motivation among the parents is the main reason for this dismal scenario that needs to be rectified.
The results of the present study revealed that only 14% and 34% of the mothers of under 5 children had very good and good knowledge while 23% and 29% of mother had average and below average knowledge regarding immunization. Chi square values of knowledge and attitude scores of mothers of under five children with all selected variable were found to be statistically non-significant at 0.005 level of significance. The findings of the study were similar to study conducted by Jose *et al.* [17] on awareness on immunization among mothers of under five children in selected hospital at Mangalore. Overall result had shown that 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. There is no significant association between knowledge score and selected demographic variables such as age of mother ($\chi 2$= 1.28), educational status ($\chi 2$= 7.03), monthly income ($\chi 2$= 0.65).

The present study results revealed that 80% of the mothers of under five had highly favorable attitude and 20% mothers had moderately favourable attitude regarding immunization. The findings of the study were consistent to the study conducted by Ms. Mereena *et al*. [18] on knowledge and attitude regarding vaccines among mother's of under five children in selected hospitals at Mangalore. Findings of the study showed that the majority 89.7% mother's had good attitude and 10.3% mothers had average attitude regarding vaccines.

5. Conclusion

The findings of the study revealed that approximately 34% of mothers had good knowledge regarding immunization, 29% of mothers had below average knowledge regarding immunization, 52% of mothers had highly favorable attitude towards immunization. Chi square values of knowledge and attitude scores of mothers of under five children with all selected variable were found to be statistically non-significant at 0.005 level of significance and no correlation between knowledge and attitude of mothers regarding immunization.

6. Delimitations

The study is delimited to one time assessment of knowledge and attitude of mothers of under five children regarding immunization.

7. Recommendation

On the basis of findings of the study, the similar study can be conducted to identify the learning needs of parents regarding immunization and develop strategies to enhance the knowledge of parents. A true experimental study can be undertaken to assess the effectiveness of various teaching programmes to enhance the knowledge and improve the attitude of mothers and caregivers regarding immunization. A study can be conducted to identify the barrier of immunization and develop strategies to overcome the barriers. The same study can be conducted on a large sample at urban areas also for generalization of the findings and also to assess the impact of reinforced teaching programme on knowledge and attitude of care givers toward immunization.

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