

# Assessing The Impact of a Structured Teaching Programme On Maternal Immunization Knowledge for Under Five Children's in Selected Area of Bagalkot

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**Abstracts: Background:** Immunization is probably one of the most cost effective interventions to reduce burden of childhood morbidity and mortality, provided used optimally and judiciously. Currently it is estimated that immunization saves the life of 3 million children a year but 2 million more lives could be saved by existing vaccines. Vaccination is a cornerstone of public health, believed to save an estimated 2-3 million lives annually. Objective: To assess the effectiveness of structured teaching Programme on knowledge regarding immunization among the mothers of under five children in selected area at Bagalkot. **Methods:** A cross sectional study with a sample of 60 mothers of under five children, selected by convenient sampling technique. A structured teaching programme questionnaire was used to assess the data regarding immunization among the mothers of under five children in selected area at Bagalkot. The data was entered in MS excel sheet and transferred to SPSS 18 for analysis. **Results:** 31.6% mothers were between 20 to 22 years of age. The standard teaching programme was effective in improving the knowledge of mothers regarding immunization (t value= 7.65,  $\alpha < 0.05$ ). A significant association was found between knowledge of mothers regarding immunization and their age, occupation and educational status. **Conclusion:** Structured teaching Programme is an effective measure to improve the knowledge regarding immunization among the mothers of under five children.

**Keywords:** Assess, Effectiveness, Knowledge, Immunization, STP, Under Five Children's.

## 1. INTRODUCTION

Immunization perhaps one of the most cost effective interventions to come down the burden of childhood illness and mortality, provided used optimally and judiciously. At present, it is estimated that immunization saves the life of 3 million children a year but 2 million more lives could be saved by existing vaccines. Vaccination is a cornerstone of public health, believed to save an estimated 2-3 million lives annually. Therefore, provision of childhood immunization continuous to be an essential component in reducing morbidity and mortality across the world. India is one of the few countries where universal routine childhood immunization is provided free of charge.<sup>1</sup>

Immunization is defined as the process of inducing the immunity in an individual against a contagious organism or agent, through the vaccination (Satish Gupte 2002). In May 1974, the WHO officially launched a global immunization programme known as Expanded Programme of Immunization (EPI), to protect all the children of the world against six vaccine preventable diseases namely- Diphtheria, Whooping Cough, Tetanus, Polio, Tuberculosis and Measles by the year 2000.<sup>2</sup>

Vaccine is an immunological substance designed to confer specific protection against a given disease. It stimulates immune system (either humoral or cell mediated) to generate specific protection against an infectious agent. Vaccine may be prepared from live modified organisms, inactivated or killed organisms, toxoids, or combination of these. Polio vaccine was invented by Jonas Edward Salk in 1952.<sup>3</sup>

Immunization is vital it protects nearly 3/4<sup>th</sup> of children against major childhood illness. There are several diseases, which can be easily prevented by timely vaccination as a part of routine immunization. Every child has the

right to benefit from the suitable traditional and new life saving vaccinations. All mothers wish good health for their children. Health workers desire all children immunized against vaccine preventable diseases. The government wants them free from progressive diseases<sup>4</sup>

Children are the wealth of tomorrow takes care of them if you wish to have a strong country, ever ready to meet various challenges. Immunization is a tool for controlling and eliminating life threatening six infectious and vaccine preventable diseases like tuberculosis, tetanus, diphtheria, whooping cough and poliomyelitis and is estimated to avert between 2 and 3 million deaths each year. It is one of the most important cost effective health investments with proven strategies that make it accessible to own the most hard to reach and vulnerable population.<sup>5</sup>

A review of immunology and the principles of vaccination provide background knowledge for information pertaining to disease transmission and the current recommended vaccine schedule. The goal of vaccination is to protect the population from disease and decrease the incidence of disease and disease transmission. Immunization is vital it protects nearly 3/4th of children against major childhood illness. The government wants them protected from progressive diseases. But many vaccines do not reach a majority of infants and children. Decreased awareness, patient compliance and cost effectiveness play a major role in limiting the success of vaccine<sup>6</sup>

Prevention of disease is always better than cure. Vaccine is a substance that is introduced into the body to prevent infection or to control disease due to a certain pathogen - a disease- causing organism, such as a virus, bacteria or parasite. The vaccine "teaches" the body how to defend itself against the pathogen by creating an immune response. It is undeniable that vaccines are integral part of health system, which has been proved on the basis of their success in controlling vaccine preventable diseases in several countries in the world. Protection from infectious diseases is one of the greatest benefits that any country can offer to its population<sup>7</sup>

Mothers are the important aspects in taking health decision makers of their children, their Knowledge, Attitude and Practices regarding immunization in general have a great impact on immunization status of their child. Several studies on immunization status of children conducted in various countries have revealed that increasing parents' knowledge regarding vaccination improves immunization status and affects success of immunization programme. Education status and other socioeconomic status of parents have a great impact on their decision regarding vaccination.<sup>8</sup>

The physical health of a child is important because it is associated with the mental and social development of a child. Mothers are the first care providers of their children, is needed to reduce the under five mortality rate. One of the ways to achieve reduction of under five mortality is to educate the mothers on matters pertaining to child care.<sup>9</sup>

A study conducted to determine the relationship between the literacy status and immunization coverage on Bihar. The analysis revealed a fairly low immunization coverage (<33%) for all vaccines and it was found that literacy status of mothers had a significant influence on the immunization level. Lack of awareness and motivation was cited as the main reason for non-immunization. Education of mothers improves their knowledge which in turn changes their attitude.<sup>10</sup>

This area of study has been selected because even today the mortality of under five children is high and it is mainly due to diseases that can be prevented. Hence, the need was felt to identify the learning needs of mothers and educate them regarding immunization by introducing structured teaching programme and promoting health of under five children which in turn reduces mortality among under five children.<sup>11</sup>

In 2003 some of researchers reported multiple reasons were cited by the women for poor immunization. These included long distance to the nearest public health facility, after effects of vaccination like fever, swelling, and pain and strong belief that polio vaccine can cause sterility in their children and lack of knowledge about the vaccination and serious consequences of vaccine preventable diseases.<sup>12</sup>

In 2006-2007 the UNICEF reported that measles vaccine coverage was 90.4% and tetanus immunization. So far the new vaccination for hepatitis B and encephalitis coverage was less reported. The lapse in vaccination coverage is due to lack of knowledge about the vaccine preventable diseases and its complications.<sup>13</sup>

A study was conducted to investigate the knowledge of nursing mothers about vaccines preventable diseases, their causes and benefit of childhood vaccination among 69 nursing mother's ages 21-50 years with secondary education to a self administered questionnaire .Result showed that 78.57% of mothers had identified poliomyelitis is a disease preventable by routine childhood immunization and 85.1% knew the organism. Tetanus was identified by only 5.7% and not agreed that vaccination was the best prevention against them. <sup>14</sup>

Measles continued to be an important cause of childhood morbidity and mortality in many states in India and between 100,000 and 160,000 children die from measles. The extremely low rates of routine immunization in large parts of the country remain a matter of serious concern.<sup>15</sup>

Nurse working in community has an important role in immunization programme and to have the mother to develop knowledge, attitude and for such mothers nurse can well plan an organize programme and nurses have greater opportunity to assess knowledge and attitude of mothers and to prevent many communicable diseases. <sup>16</sup>

**Methods:** It was a cross sectional study with an aim to assess the knowledge of immunization among the mothers of under five children. in selected area of Bagalkot with a view to develop STP.A sample of 60 mothers were selected by Convenient sampling technique. The data was collected by using Knowledge questionnaire and attitude scale in order to identify the knowledge and attitude of immunization among the mothers of under five children in selected area at Bagalkot. First week survey was conducted to identify the under five children mothers in selected area. Each week 60 subjects was planned to conduct pre test and the structured intervention was given to the mothers. After one week post test was conducted to the 60 mothers, hence the data obtained from 60 mothers was considered for final analysis. The data was entered in MS excel sheet and transferred to SPSS 18 for analysis.

**Study participants:** The study participants were the under five mother's .The sampling criteria included the under five children in selected area of bagalkot, who can understand Kannada, available at the time of data collection and working in bank since at least one year. The mothers feeling sick and not able to provide data, who are not willing to participate in the study and suppose to move out at the time of data collection, were excluded from enrolment in study sample.

### **Sample size calculation**

The sample size was calculated using ROASOFT online sample size calculator.

The sample size was calculated considering the following criteria,  $Z = 1.96$  (95% confidence level), margin of error (e)=5%(0.05), Population proportion (P) = 0.5.The calculated sample size was 60. The researcher enrolled 60 subjects. Data was obtained from 60 subjects.

**Setting of the study:** The study was conducted in the physical location and condition in which data collection takes place. ( Polit and Hungler, 1999). The study was conducted selected community area at Bagalkot.Itissituated1kmaway from B.V.V.S Institute of nursing sciences Bagalkot.

**Data collection Instrument:** The data was collected by structured questionnaire and prepared by the researcher. It included two parts A and B. Part -A included 10 items to assess Socio demographic characteristics of sample. Part – B consists 30items to assess the knowledge of stress and its management. There were 30 items. Each item has four options with one accurate answer. The score for correct response to each item was “one” and for incorrect response was “zero”. Thus for 20 items maximum obtainable scores were 30 and minimum was zero.

To find out the association between the selected socio-demographic variables and knowledge scores, respondents are categorized into three groups (Adequate knowledge, moderately adequate knowledge and inadequate knowledge).

**Validity, reliability, and translation of data collection instruments:** Content validity of the tool was established by obtaining the suggestions from experts. The tool was validated by 4 nursing experts. Minor modifications were made on the basis of recommendations suggestions of experts and result of pilot study. After consulting guide the final tool was reframed. It was found to be valid and suitable for under five mothers' areas of Bagalkot. The reliability of the instrument was established by administering the tool to under five children' areas of Bagalkot. Split half method was used to ascertain reliability. The test retest was used to establish a reliability of structure questionnaire. Reliability value  $r=0.7$  was satisfactory.

**Ethical clearance:** Ethical clearance certificate was obtained from Institutional ethical clearance committee, B.V.V.S Sajjalashree Institute of Nursing sciences, Bagalkot (ref No. BVVS/SIONS-IEC/2022-23/157.DT: 20/02/2023) Written consent of participation was obtained from participants before data collection.

**Statistical analysis:** the data was analysed using SPSS version 25. The obtained data was entered in MS excel sheet. The data was edited for accuracy and completeness. The categorical responses were coded with numerical codes. The data was presented with frequency and percentage distribution tables and diagrams. The description of knowledge regarding immunization on among mothers of under five year children was presented with Arithmetic mean, range and standard deviation. Chi square test and logistic regression analysis were used to associate the socio-demographic factors with knowledge regarding immunization among mothers of under five year children.

**Data collection Procedure:** The data was collected in August 2023. Prior permissions were taken from all the selected area of Bagalkot. All the participants were explained about the purpose of study and that the data or information provided from them will be kept confidential and their identity will not be revealed. They were informed to avoid discussion with other fellow mates. The instruments were given according to their preferred language. Instructions were given regarding content of data collection instruments. The researcher attained and clarified the doubts of participants during data collection. The filled tools were collected from the participants. On an average participants took 20 to 30 minutes to fill the tools and the whole process was completed in 1 hour. Researcher thanked all the participants and concerned authority.

**Results:** The mean age of participants was the distribution of mothers according to age shows that 46.66% of mothers belongs to age group of above 23 years, 31.66 % of mothers belongs to age group of 20-22 years and only 21.66%% of mothers belong to age group of 18-20 years Coming to the distribution of mothers according to religion shows that 78.33% of mothers belongs to Hindu religion, 18.33% of mothers belongs to Christians and only and only 3% of mothers belong to Muslim religion. The distribution of mothers according to occupation shows that 85% of mothers are unemployed and 15% of mothers are employed. 45% of mothers have completed secondary education, 28.33 % of mothers have completed primary education and only 25%% of mothers completed graduation and above. 65% belongs to nuclear family and only 35 % of mothers belongs to joint family. And among 60 mothers, the mean score of knowledge regarding immunization among the mothers of under five children in selected area at bagalkot was 12.35 and the standard deviation was  $\pm 2.46$ .

**Table.1. Distribution of samples according to the post-test and Pre test maternal immunization knowledge scores of under five children. N=60**

Level of knowledge	Pre test		Post test		T value
	Frequency	Percentage	Frequency	Percentage	
Adequate knowledge	0	0	8	13.33%	7.65*
Moderately adequate knowledge	28	46.66%	50	83.33%	
Inadequate knowledge	32	53.33%	12	3.33%	

\*significant

**Table.1.** Shows the frequency and percentage distribution of sample according to the pre test knowledge score of mothers regarding immunization. It revealed that 32(53.33%) mothers had inadequate knowledge, and 28(46.66%) mothers had moderately adequate knowledge about immunization. The frequency and percentage distribution of samples according to the post test knowledge scores of mothers regarding immunization. It revealed that 8 (13.33%) mothers had adequate knowledge, 50 (83.33%) mothers had moderately adequate knowledge,2(3.33%) about immunization.

**Table.2: Association between knowledge scores of mothers regarding maternal immunization with their selected socio-demographic variables. N=60**

Sl.No.	Socio-demographic variables	Df	Chi-square value	Table value	P value
1	Age	4	2.30	9.48	0.68
2	Religion	8	16.22	15.50	0.039*
3	Occupation	8	7.82	15.50	0.45
4	Education	6	3.47	12.59	0.74
5	Type Of Family	2	742	5.99	0.007*

\* Significant

The findings regarding association of the level of knowledge scores with the socio-demographic variables of mothers regarding immunization shows that; there is no significant association between knowledge and age ( $\chi^2=2.30$ ) ( $p<0.68$ ), there is significant association between knowledge and education( $\chi^2=16.22$ ,  $P<0.05^*$ ), there is no significant association between knowledge and family monthly income ( $\chi^2=7.82$ , $P>0.05$ ),there is no association between knowledge and marital status ( $\chi^2=3.47$ ,  $P>0.05$ ), there is significant association between knowledge and occupation ( $\chi^2=7.42$ ,  $P<0.05^*$ ), and there is no association between knowledge and diet ( $\chi^2=5.90$ ,  $P>0.05$ ).

**2. DISCUSSION**

The aim of the study is to Assessing the impact of a structured teaching programme on Maternal Immunization Knowledge for under five children’s in selected area of Bagalkot This chapter discusses the major findings of the study and reviews that in relation to the findings from the result of previous history.

The subjects were assessed by the socio demographic data, structured knowledge questionnaire. The investigator has to identify the impact of STP on knowledge regarding maternal immunization among under five

children. The effort taken to improve the knowledge of the mothers. Teaching was given by means of STP on immunization. After post test was conducted to find the effectiveness of teaching.

**The first objective was to assess the pre test score on knowledge regarding the immunization among mothers of under five children.**

In the present study shows that 28 (46.66%) mothers had moderate knowledge, 32 (53.33%) mothers had inadequate knowledge and no mothers had adequate knowledge about immunization.

A similar study was conducted by Dr.Kodeeswaraprabu, Dr.vidhyalakshmi D, Ms.Pradnyawaghmare principal (PhD. in nursing), associate professor (PhD. in nursing), student (basic b.sc nursing). The analysis shows that 14 (46.66%) mothers had moderate knowledge, 16 (53.33%) mothers had inadequate knowledge and no mothers had adequate knowledge about immunization. This can be explained by due to the lack of awareness about the immunization the mothers were having inadequate knowledge and.<sup>17</sup>

**The second objective was to assess the post test level knowledge regarding immunization among mothers of under five children as measured by structured knowledge questionnaire.**

In the present study shows 8 (13.33%) mothers had adequate knowledge, 50 (83.33%) mothers had moderate knowledge and one 2 (3.33%) mother had inadequate knowledge about immunization.

A similar study was conducted by Allred NJ, et al., (2005) conducted a study to find the parents vaccine safety concerns results from the national immunization survey. The parental structural teaching module was administered. The mothers were given questions regarding knowledge toward vaccine safety and side effects, simultaneous vaccine administration, and acceptance of new vaccines. Multivariate logistic regression analyses examined associations and up-to-date vaccination coverage. The study results showed that after giving teaching module 93% of parents rated vaccines as safe,6% as neither safe nor unsafe, and1%as unsafe.<sup>18</sup>

**The third objective was to evaluate the impact of structured teaching program on knowledge regarding immunization among mothers of under five children in term of gain in post test knowledge**

In the present study shows that the pre test knowledge mean score regarding immunization was 11.1 and standard deviation was 3.42.In the post test knowledge mean score was 14.2 and standard deviation was 3.37 and standard deviation was 3.25.

**H1** The mean post test knowledge score is higher than the mean pre test knowledge score regarding immunization among the mothers of under five children.

In order to find out the significant difference between the means of pretest and post test knowledge scores of the samples paired 'T' test was computed. Paired t test value is 7.65. The calculated value is higher than the table value, hence the null hypothesis was rejected and there search hypothesis was accepted. Hence the researcher concluded that gain in knowledge is not by chance but by the structured teaching programme on immunization.

This may be due to before giving structured teaching programme they have very little knowledge about immunization and they gained more knowledge and after given the structured teaching programme regarding immunization.

The Present studies revealed that mean post test knowledge score was higher than the mean pretest score of respondents in Knowledge on Immunization. The mean pre test score of knowledge score was 6.5 and mean post test knowledge score was increased to 10.9. In this study majority of mothers source of information regarding

immunization is from Health workers. A supportive study also shows same result by Ahmed Nadeem (2015), conducted a study in Kerala, in this Health Personnel was the major important source of information<sup>19</sup>

**The fourth objective was to find the co relation between the knowledge and attitude regarding immunization among the mothers of under five children.**

The 'r' value of post test level of knowledge and attitude was -0.22, there was a negative correlation between knowledge which was not significant.

**The fifth objective was to find out the association between post test level of knowledge with their selected demographic variables.**

Regarding knowledge the result shows there is a significance association between age of the mother, and occupation. But there was no association between religions, education, and source of information.

According to the researcher point of view, the age of mother increases the mother's knowledge regarding immunization. This may be one of the factors to have association between ages of the mother with the knowledge of immunization.

According to the researcher point of view, occupation of the mother increases the mother's knowledge regarding immunization. This may be one of the factors to have association between occupations of the mother with the knowledge of immunization.

The further analysis shows that there was no significant association between the level of post test knowledge score on mothers regarding immunization and demographic variables such as religions, education, and source of information.

**Conclusion and Recommendation:** The structured teaching programme through flashcards found to be very effective in improving the knowledge and attitude among mothers who have below 5yrs children on immunization. The knowledge and attitude regarding immunization was improved by health teaching through flash cards. Being as a nurses, our main responsibility is try to make our India, free from communicable disease by providing immunization for all under five children

## **RECOMMENDATIONS**

- A comparative study can be done between urban mothers and rural mothers who have under 5 children.
- A similar study can be conducted with large samples.
- Study can be done using different methods of teaching.
- Future studies can be conducted on knowledge and factors influence non-compliance of optional vaccine among mothers.

The results obtained from the study reflect the knowledge of regarding immunization among the mothers of under five children in selected area at Bagalkot. In pre test, the majority of the mothers 32 (53.33%) had inadequate knowledge regarding immunization. In posttest, the majority mothers 50 (83.33%) had moderate knowledge regarding immunization.

There is significant association between knowledge and age of the mother and occupation of the mother. But there was no association between religion, education and type of family with the post test knowledge score.

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