



RESEARCH ARTICLE

A STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAM ON THE KNOWLEDGE OF IMMUNIZATION AMONG MIGRANT MOTHERS OF UNDER FIVE CHILDREN IN SELECTED CONSTRUCTION SITES AT BANGALORE URBAN

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ABSTRACT

Prevention of disease is one of the most important goals in child care. For this reason a national effort is being made towards improving the immunization of all the children. Migrant laborers themselves avail the curative care but they fall outside the coverage of preventive care largely due to their movement of work caused by uncertainty of employment. The immunization status of migrant children is poorly understood, as they have less access to health care services. The researcher felt that assessing the knowledge on immunization and teaching them on the importance of immunization would bring about a positive attitudinal change among the migrant mothers to immunize their children regularly.

Objectives: To assess the knowledge and effectiveness of planned teaching programme regarding Knowledge on immunization. To determine the association of pre and post test level of knowledge with the selected demographic variables among migrant mothers.

Research design: Experimental, one group pretest- post test design.

Sample size: The participants were 60 from selected Construction Sites at Bangalore Urban.

Sampling method: A purposive sampling technique was used.

Data collection tool: Structured interview schedule was used to collect the data.

Results: Major findings showed that 55.0% were between 20-23 years of age, 38.3% had only one child, 45% of children belonged to the ages below 1 year, 91.7% had no formal education, 68.3% of migrant mothers speak Kannada. 71.7% of them had inadequate knowledge, whereas 28.3% of them had moderate knowledge while 0% of them had adequate knowledge. There is a significant increase in the post test knowledge scores (76.9%) among migrant mothers after administering planned teaching programme on immunization. There is a significant association between knowledge scores and selected demographic variables such as age group, age of children, educational status and frequency of migration

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INTRODUCTION

Children are an embodiment of our dreams and hopes for the future. Childhood is more precious period in human lifecycle. It requires more care and protection from the diseases. They are the most vulnerable group in the society. The physical health of a child is important because it is associated with mental and social development of children. Mothers are the first care provider of children and who is needed to reduce the under five mortality rates (Brumback, 2010). Killer diseases around the world are indeed difficult to halt. Although medical knowledge and advance technologies have made significant improvements and breakthroughs, there are still infectious diseases that continue to ravage and claim millions of lives.

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No more than six deadly infectious diseases -tuberculosis, diphtheria, pertussis, measles, poliomyelitis, tetanus - account for half of all premature death, killing mostly children and young adults. Every three seconds a young child dies in most case from an infectious disease (Bhatswana Rakka, 2009). Infectious diseases are now the world's biggest killer of children and young adults. They account for more than 13 million deaths a year - one in two deaths in developing countries (Brian Tubbs, 2008). Immunization forms one of the most important and cost effective strategies for the prevention of childhood sicknesses, disabilities, prevent the mortality rates and is thus a basic need for all children. Still many deaths are occurring in the age group of less than five years and it is unfortunate that these deaths are preventable by proper vaccination. Educating the mothers regarding the immunization and optional vaccines will play an important role

in preventing the childhood mortality and morbidity rate. Migration is a process of social change during which a person moves from one cultural setting to another to settle for a longer period of time or permanently (Kristiansen, 2007). According to National Sample Surveys, a migrant is defined as if he or she had stayed continuously for at least six months or more in a place (village/town) other than the village/town where he or she was enumerated. In the Census, if the place of birth or place of last residence is different from the place of enumeration, a person is defined as migrant (Chatterjee Chandima, 2009). A migrant labourer is someone who is engaged or has been engaged in a remunerated activity in a place of which he/she is not a part of undertaken (Alejandra *et al.*, 2009). Migrants are often excluded from surveys and our knowledge with their morbidity is very less (Purani Swaroop, 2005). The morbidity patterns among migrants vary with the type of migration and its scope for generation of health risk. Hepatitis, fever, and respiratory infection are found with a higher incidence among migrants (Bailey Eric, 1987). Children frequently have health needs that go unmet due to fragmented care caused by their mobility, poverty, lack of medical and financial resources, language barriers, superstition beliefs and poor education (Schneider, 1986). The immunization status of migrant children is poorly understood. Children receive their immunizations at times which are significantly later than the recommended schedule. Hence the basic immunization the child should be receiving in its early childhood is lacking and delayed (Slessinger, 2007). Each mother should be aware about safe guarding the health of their children as wealth of their family, society and the community. Physical health of a child is important because it is associated with mental and social development of children¹¹. Mothers must be a good knowledgeable person regarding stages of growth and development, child care, and about immunization schedules for saving the life of their children.

According to recent census 2011, the total population of India is 1.21 billion. In 2001, 309 million persons were migrants based on place of last residence, which constitute about 30% of the population. The female and children are considered associated migrant in India (Lee Virginia *et al.*, 1990). Construction workers are one of such migratory group. They may not be pure migratory workers but they have maximum mobility because of the nature of their work. They have to move from one construction site to another as per the directions of the contractors and as such they miss out on their duties of immunizing their children regularly (National Immunization Survey-United States). According to WHO, 7.6 million under-five children died in 2010. The risk of death among under-fives is highest closest to birth and then decreases over the subsequent days, months, and years. An estimated 3 million deaths, or 40% of all under-five deaths, occurred during the first 28 days after birth, and 2.4 million deaths in the following 11 months, 5.4 million deaths (71% of all are under-five deaths) happened within the first year of life. The full immunization coverage of children age between 12-23 months of mother's who had no formal education is only 45.3% and among children of construction workers is only 17% (Samarendra Biswas, 2011). According to NRHM Report 2011, Measles immunisation in rural areas is 72.4%. In contrast, urban immunisation status remained unchanged at about 67.5% urban measles immunisation coverage in this period declined to 78.3% (Kiros and White, 2004). According to Karnataka report in 2011, it showed that full Immunization percentage is still low which 76%. Coverage of urban slum

area needs to be ensured; drop -out rate for BCG to Measles is almost 10%. Karnataka is sixth in immunization performance and needs to find out the left outs and the drop outs actively, Since 2004 Karnataka is polio free state but recently 2007 December one migrated case has been confirmed (Child Survival Matters for a multitude reasons report, 2011).

Objectives of the study

- To assess the knowledge of migrant mothers regarding immunization.
- To assess the effectiveness of planned teaching program regarding Knowledge on immunization.
- To determine the association of pre and post test level of knowledge with the selected demographic variables among migrant mothers.

Research hypotheses

H₁: The mean post test knowledge scores of migrant mothers attending the planned teaching programme will be significantly higher than their mean pre test knowledge scores.

H₂: There will be a significant association between selected demographic variables with knowledge scores of migrant mothers.

Research variables

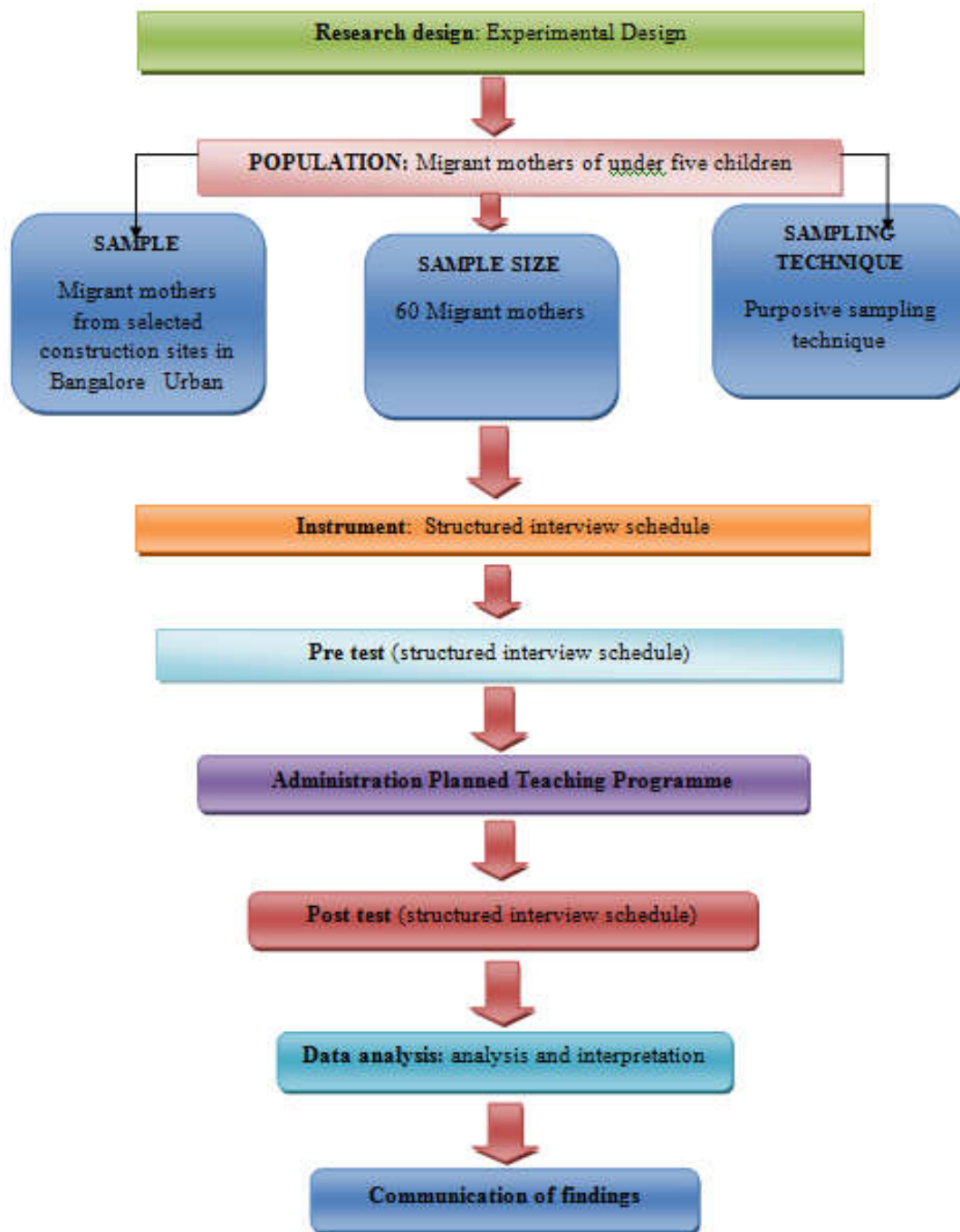
- **Independent variable:** Planned teaching program on Immunization.
- **Dependent variable:** knowledge of migrant mothers on Immunization.
- **Attribute variable:** Age, religion, education, number of children, and Vaccination status of children.

Operational definitions

- **Knowledge:** Refers to the information and awareness the mothers possess on the various aspects of immunization.
- **Effectiveness:** In this study effectiveness refers to, the extent to which the planned teaching programme on Immunization achieves desired effect in improving the knowledge level of migrant mothers which is measured by difference between pretest and post test scores.
- **Planned Teaching Programme:** It refers to a well-structured teaching method imparting knowledge on immunization to mothers in selected construction sites.
- **Immunization:** It is a method by which the vaccines are injected into the body to make the person immune.
- **Under five children:** In this study it refers to children below 5 years of age.
- **Migrant mothers:** Refers to women who has under-five children and who have moved to Bangalore for construction work.
- **Construction sites:** Refers to a migrant mother's place of work where a building is being built or repaired.

Review of literature

A health survey was conducted among 130 mothers to assess the maternal knowledge and practice regarding immunization status among children between the ages of 12-59 months in Wardha, Mumbai showed that 52.5% children were fully immunized and 45.1% were partially immunized.



Schematic representation of the research design

Vaccine coverage for B.C.G. and primary doses of DPT/OPV was 95.9% and above 85% respectively. It was 57.4% for measles and 63.04% for DPT booster dose. Mothers had a knowledge regarding need for immunization but a poor knowledge regarding the diseases prevented and doses of the vaccines. The study recommended that mothers need to improve their knowledge regarding immunization thereby preventing diseases which can be prevented by vaccines (Sheetal). A cross sectional study was conducted among 166 mothers on knowledge of immunization of children aged between 12-24 months in Pilani and it showed that among the 12-24 month old children 50% was immunized fully, 31.3% partially and 18.7% not immunized at all. Many mothers (87%) were aware of the importance of vaccination in general, but specific information about the importance of completing the schedule and knowledge about vaccine preventable diseases other than poliomyelitis was very limited.

Therefore the study concluded that maternal knowledge about the vaccine preventable diseases and importance of completing the immunization schedule through interpersonal mode and to overcome obstacles to immunization was quite better (Aggarwal and Kumar, 2005). An exploratory study was conducted to assess the immunization coverage among 500 mothers of children under the age of 5 years attending the paediatrics out patient Hospital in Delhi. It showed that Only 25% received complete primary immunization as per the National Immunization schedule. The major reasons for non-immunization of the children were migration to a native village (26.4%), domestic problems (9.6%), the immunization centre was located too far from their home (9.6%) and child was unwell when the vaccination was due (9%). The lack of awareness and fear of side effects constituted a small minority of reasons for non-immunization (Mujiburrahman *et al.*, 2008). A Logistic study was conducted among Parents of 325

outpatient (OPD) children aged 12-60 months to find out the reasons for partial and non-immunization status of children admitted to Paediatric Hospital Delhi. It showed that out of 325 children, 58 (17.84%) were completely immunized, 156 (48%) were partially immunized, and 111 (34.15%) were non-immunized. Mothers were the primary respondents in 84% of the cases. The most common reasons for partial or non-immunization were lack of knowledge on immunization and belief that vaccine has side-effects. The study recommends the immunization status should be improved by educating mothers regarding immunization (Nath *et al.*, 2001). A National survey study was conducted in United States, among 13516 parents to assess the association between parents' preferences and perceptions of barriers to vaccination and the immunization status of their children through structured questionnaire, which showed that 22.6% of parents were concerned about the side effects of vaccines. Other barriers include the expense of vaccines, the inconvenience of the vaccination process and religious objections. This was statistically associated with immunization status. It was estimated that parental perception of barriers associated with immunization status accounts for 8.0% of the under immunized (Raham, 1995).

MATERIALS AND METHODS

Data collection instruments

Interview method was considered to be the appropriate instrument to elicit the response from the samples. Keeping this in mind, structured interview schedule is selected and developed to measure the knowledge of immunization among migrant mothers, on the basis of the objectives of the study.

Organization and presentation of data

The obtained data were organized and presented for analysis under the following:

Table 1. Classification of Respondents by Personal Characteristics

Characteristics	Category	Respondents	
		Number	Percent
Age Group (years)	17-19	14	23.3
	20-23	33	55.0
	24-27	13	21.7
Number of under five children (Migrant mothers)	One	23	38.3
	Two	22	36.7
	Three	15	25.0
Age of Children	Below 1 year	27	45.0
	1-2 years	19	31.7
	3-5 years	14	23.3
Educational Status	No formal education	55	91.7
	Primary	5	8.3
Languages Known	Kannada	41	68.3
	Telugu	19	31.7
Total		60	100.0

Table 1: depicts the classification of respondents by personal characteristics. The result indicates that the majority of the respondents 55% belonged to 20-23 years of age, 23.3% were between 17-19 years and remaining 21.7% belonged to 24-27 years

Regarding the number of children the migrant mothers had, 38.3% of them had only one child, 36.7% had two children and 25% had three children. The age of children reveals that 45% of children belonged to the ages below one year, 31.7% of

children were between the age group of 1-2 years and 23.3% belonged to 3-5 years of age. Education wise distribution of respondents demonstrated that majority of mothers 91.7% had no formal education, whereas only 8.3% of them completed their primary education. In relation with the language 68.3% of migrant mothers speak Kannada and while 31.7% of others speak only Telugu.

Table 2. Classification of Respondents by Related Characteristics

Characteristics	Category	Respondents	
		Number	Percent
Religion	Hindu	60	100.0
	Christian	0	0.0
Type of Family	Nuclear	60	100.0
	Joint	0	0.0
Frequency of Migration (years)	1-2	15	25.0
	3-4	28	46.7
	5-6	17	28.3
Number of Working hours	5-6	14	23.3
	7-8	26	43.3
	9-10	20	33.4
Source of Information	Family members	23	38.3
	Health Personnel	37	61.7
Total		60	100.0

Table 2: depicts the classification of respondents by related characteristics. It is evident that 100% of the migrant mothers are Hindus. With regard to the type of family, it is clear that 100% of migrant mothers belonged to nuclear family. In relation to frequency of migration 46.7% of mothers migrated between 3-4 years, 28.3% migrated between 5-6 years and 25% of them migrated between 1-2 years. With regards to number of working hours 43.3% of mothers work for 7-8 hours per day, 33.4% work for about 9-10 hours while 23.3% of mothers work for 5-6 hours a day. Majority 61.7% of respondents received source of information from health personnel and 38.3% of them from their family members. The above table shows that out of 60 respondents, 71.7% of them had inadequate knowledge whereas 28.3% of them had moderate knowledge while 0% of them had adequate knowledge.

Table 3. Classification of Respondents on Pretest Knowledge level on Immunization Migrant Mothers

Knowledge Level	Category	Respondents	
		Number	Percent
Inadequate	≤ 50 % Score	43	71.7
Moderate	51-75 % Score	17	28.3
Adequate	> 75 % Score	0	0.0
Total		60	100.0

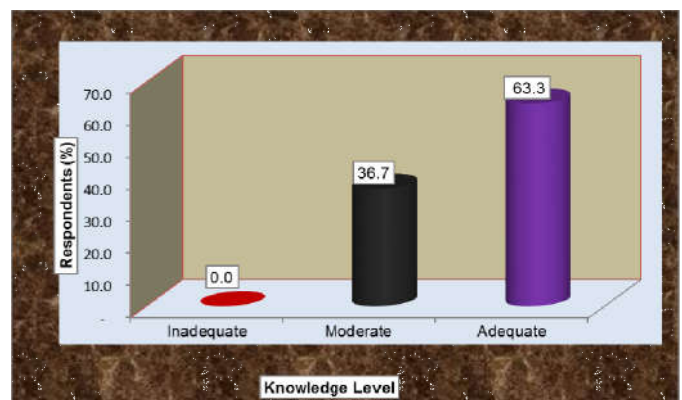


Figure 1. Classification of Respondents on Post test Knowledge level on Immunization among Migrant Mothers

Table 4. Over all Pre test and Post test Mean Knowledge on Immunization among Migrant Mothers

Aspects	Max. Score	Respondents Knowledge				Paired 't' Test
		Mean	SD	Mean (%)	SD (%)	
Pre test	30	9.78	4.4	32.6	14.6	24.17*
Post test	30	23.08	3.3	76.9	11.0	
Enhancement	30	13.30	4.3	44.3	14.2	

* Significant at 5% level, t (0.05, 59df) = 1.96

Table 5. Association between Demographic variables and Pre test Knowledge level on Immunization of Migrant Mothers

Demographic Variables	Category	Sample	Knowledge Level				χ^2 Value	P Value
			Inadequate		Moderate			
			N	%	N	%		
Age Group (years)	17-19	14	13	92.9	1	7.1	7.28*	P<0.05
	20-23	33	24	72.7	9	27.3		
	24-27	13	6	46.2	7	53.8		
Number of under five children	One	23	19	82.6	4	17.4	2.24 NS	P>0.05
	Two	22	14	63.6	8	36.4		
	Three	15	10	66.7	5	33.3		
Age of Children	Below 1 year	27	23	85.2	4	14.8	11.84*	P<0.05
	1-2 years	19	15	79.0	4	21.0		
	3-5 years	14	5	35.7	9	64.3		
Educational Status	No formal education	55	42	76.4	13	23.6	7.17*	P<0.05
	Primary	5	1	20.0	4	80.0		
Languages Known	Kannada	41	29	70.7	12	29.3	0.06 NS	P>0.05
	Telugu	19	14	73.7	5	26.3		
Frequency of Migration	1-2	15	11	73.3	4	26.7	7.81*	P<0.05
	3-4	28	24	85.7	4	14.3		
	5-6	17	8	47.1	9	52.9		
Number of Working hours	5-6	14	11	78.6	3	21.4	0.94 NS	P>0.05
	7-8	26	17	65.4	9	34.6		
	9-10	20	15	75.0	5	25.0		
Source of Information	Family members	23	17	73.9	6	26.1	0.09 NS	P>0.05
	Health Personnel	37	26	70.3	11	29.7		
Combined		60	43	71.7	17	28.3		

Table 6. Association between Demographic variables and Post test Knowledge level on Immunization of Migrant mothers

Demographic Variables	Category	Sample	Knowledge Level				χ^2 Value	P Value
			Moderate		Adequate			
			N	%	N	%		
Age Group (years)	17-19	14	8	57.1	6	42.9	7.33*	P<0.05
	20-23	33	13	39.4	20	60.6		
	24-27	13	1	7.7	12	92.3		
Number of under five children	One	23	11	47.8	12	52.2	2.14 NS	P>0.05
	Two	22	6	27.3	16	72.7		
	Three	15	5	33.3	10	66.7		
Age of Children	Below 1 year	27	15	55.6	12	44.4	7.54*	P<0.05
	1-2 years	19	4	21.1	15	78.9		
	3-5 years	14	3	21.4	11	78.6		
Educational Status	No formal education	55	22	40.0	33	60.0	3.16 NS	P>0.05
	Primary	5	0	0.0	5	100		
Languages Known	Kannada	41	19	46.3	22	53.7	5.22*	P<0.05
	Telugu	19	3	15.8	16	84.2		
Frequency of Migration	1-2	15	9	60.0	6	40.0	6.18*	P<0.05
	3-4	28	10	35.7	18	64.3		
	5-6	17	3	17.7	14	72.3		
Number of Working hours	5-6	14	5	35.7	9	64.3	0.07 NS	P>0.05
	7-8	26	10	38.5	16	61.5		
	9-10	20	7	35.0	13	65.0		
Source of Information	Family members	23	12	52.2	11	47.8	3.86*	P<0.05
	Health Personnel	37	10	27.0	27	73.0		
Combined		60	22	36.7	38	63.3		

The above figure on post test knowledge scores of 60 respondents showed that (38)63.3% of them had adequate knowledge and (22)36.7% of them had moderate knowledge while none (0) of them had inadequate knowledge. The data of table-7 shows that the Mean scores of Pretest were 32.6% with SD 14.6% whereas the Mean scores of Posttest were 76.9% with SD 11.0%, the Mean enhancement score was 44.3% with SD of 14.2%.

The calculated value (paired 't' test -24.17) is greater than the table value (χ^2 (0.05, 1df) = 3.841). Hence the null hypothesis is rejected and the research hypothesis is accepted at 5% level of significance. Table 10: Depicts that Chi Square was calculated to find out the association between demographic variables and pretest knowledge level on immunization, it revealed that there is a significant association between knowledge scores of the respondents with their age, age of their children, educational

status of migrant mothers and frequency of migration. Other than this number of under-five children, languages known, number of working hours and source of information were found not significant. Table-11 depicts that 57.1% of respondents had moderate knowledge level and 42.9% with adequate knowledge level were in the age group of 17-19 years, the table also depicts that mothers who were in the age group of 20-23 years had 60.6% adequate knowledge and 39.4% moderate level. Mothers belonged to 24-27 had 92.3% of adequate knowledge whereas only 7.7% of them had moderate knowledge level. Therefore the association between age group and posttest knowledge level on immunization was found to be significant ($\chi^2 = 7.33$, $p < 0.05$). With regard to knowledge of mothers with age group of children, 78.9% of mothers with children had adequate knowledge and 21.1% had moderate knowledge. 78.6% of mothers with children between 1-2 years had adequate knowledge and 21.4% had moderate knowledge. And 55.6% of mothers with children below one year had moderate knowledge and 44.4% of them had adequate knowledge. Therefore the association between age of children and posttest knowledge level on immunization was found to be significant ($\chi^2 = 7.54$, $p < 0.05$).

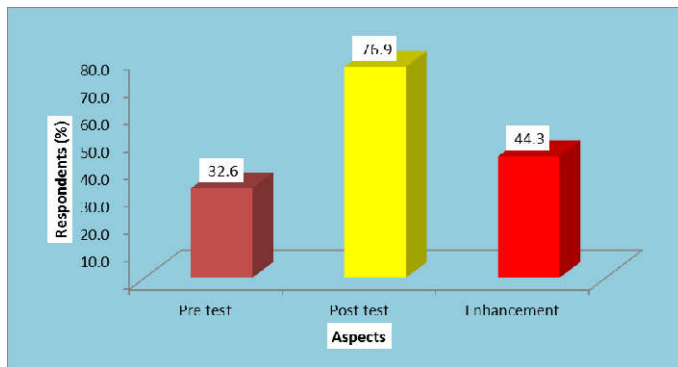


Figure 2. Overall Pre test and Post test Mean knowledge of Immunization among Migrant Mothers

DISCUSSION

Major findings of the study

Description of demographic characteristics

According to age group majority of the respondents, 55.0% were between 20-23 years, 23.3% were between 17-19 years and 21.7% of migrant mothers belonged to age group between 24-27 years. With regard to the number of children migrant mothers had, 38.3% had only one child 36.7% had two children and 25% had three children. 45% of children belonged to the ages below 1 year, 31.7% of children were between the age group of 1-2 years and 23.3% belonged to 3-5 years of age group. With regards to education, out of 60 respondents, 91.7% had no formal education, whereas 8.3% had primary education. Out of 60 respondents, 68.3% of migrant mothers speak kannada and 31.7% of mothers speak only Telugu. Out of 60 respondents, 71.7% of them had inadequate knowledge whereas 28.3% of them had moderate knowledge while 0% of them had adequate knowledge

Association between demographic variables and pre and post test knowledge level of respondents on immunization

There is no association between knowledge and demographic variables in this study such as:

- The value of χ^2 is found to be Non-significant at 0.05 level
 - Number of under five children: $\chi^2 = 2.24$ NS, $P > 0.05$.
 - Languages known: $\chi^2 = 0.06$ NS, $P > 0.05$.
 - Number of working hours: $\chi^2 = 0.94$ NS, $P > 0.05$.
 - Source of information: $\chi^2 = 0.09$ NS, $P > 0.05$.
- The value of χ^2 is found to be significant at 0.05 level
 - Age group: $\chi^2 = 7.28$ *, $P < 0.05$.
 - Age of children: $\chi^2 = 11.84$ *, $P < 0.05$.
 - Educational status: $\chi^2 = 7.17$ *, $P < 0.05$.
 - Frequency of migration: $\chi^2 = 7.81$ *, $P < 0.05$

Conclusion

The following conclusions were drawn on the basis of the findings of the study.

Implications of the Study

The findings of the study have implications in the field of nursing practice, nursing education, nursing administration and nursing research.

Nursing Implications

The investigator has drawn the following implication from the study, which is of vital concern to the field of nursing education, nursing service, nursing administration, and nursing research.

Nursing Education

Nursing education should focus its attention to curative as well as preventive care. The nursing students should be motivated to practice innovative and interesting health education activities in health promotion to spread the health messages to wider areas. The student nurse from school and college of nursing must be posted in primary health centre and they must be trained to teach all migrant mothers regarding immunization services for under-five children which is available free of cost in health centres. The student nurses should be encouraged to conduct various program on immunization services and health education in villages and primary health centre.

Nursing service

- Community health nurse can practice planned education programme to impart knowledge and skills on immunization services.
- Present study would indirectly help the nurses to understand the knowledge on immunization. Nurses working in community are key persons who play a major role in health promotion, health maintenance and prevention of disease. The findings suggest that there is an increased need for awareness program on immunization services among migrant mothers.

Nurse Administration

- It is essential for nursing administration to facilitate activities to improve knowledge and practices of immunization services among mothers. They should plan and organize programmes cost effectively. The staff should be encouraged to prepare teaching materials and audio visual aids related to various health related topics.

- Nurse administrators should communicate on the proper selection, placement and effective utilization of the nurses in paediatric hospital and community giving opportunity for creativity, interest and ability in educating the mothers regarding immunization.

Nursing research

- The study can be conducted with more number of samples.
- The present study also brings about the fact that more studies need to be done among migrant mothers on immunization services. As these groups migrate from one place to another for their survival of work, they often neglect or ignore the immunization services to their children.
- The study is important to identify the knowledge on immunization among migrant mothers and prevent morbidity and mortality rates in under five children.

The findings of present study suggests that nurses in and those working in the community must encourage the mothers to vaccinate their children according to National Immunization schedule. This study will serve as a valuable reference material for future investigators.

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