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Original Research Paper

Child Health Nursing

A STUDY TO ASSESS THE EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING IMMUNIZATION AMONG MOTHERS OF UNDER-FIVE CHILDREN IN A SELECTED HOSPITAL OF URBAN AREA

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ABSTRACT **Background:** Immunization is a cost-effective intervention for preventing vaccine-preventable diseases and reducing childhood morbidity and mortality. Mothers' knowledge plays an important role in ensuring timely and complete vaccination of under-five children. **Objectives:** To assess mothers' knowledge regarding immunization, evaluate the effectiveness of a Structured Teaching Programme (STP), and determine the association between pre-test knowledge and selected demographic variables. **Methodology:** A quantitative pre-experimental one-group pre-test and post-test design was adopted. Sixty mothers of under-five children were selected using convenience sampling from a selected urban hospital. Data were collected using a self-structured knowledge questionnaire. STP was administered after the pre-test, followed by a post-test. Data were analyzed using descriptive and inferential statistics. **Results:** In the pre-test, 6.67% of mothers had poor knowledge, 35.00% had average knowledge, 46.67% had good knowledge, and 11.67% had excellent knowledge regarding immunization. The mean pre-test knowledge score was 11.20 ± 3.76 (56.00%). Following the Structured Teaching Programme, the post-test findings showed that none of the mothers had poor knowledge, while 3.33% had average knowledge, 30.00% had good knowledge, and 66.67% had excellent knowledge. The mean post-test knowledge score increased to 16.23 ± 2.31 (81.17%), indicating a marked improvement in mothers' knowledge regarding immunization after the intervention. **Conclusion:** STP was effective in improving mothers' knowledge regarding immunization and may promote timely and complete vaccination.

KEYWORDS : Immunization, Structured Teaching Programme, Knowledge, Mothers, Under-Five Children, Vaccination.

INTRODUCTION

Immunization is a global health success story, saving millions of lives every year. [1] Immunization is the process of inducing immunity by administering a vaccine prior to natural exposure to an infectious agent (active immunization), or preformed antibodies soon after exposure, in order to suppress disease (passive immunization). [2] Vaccines reduce risks of getting a disease by working with your body's natural defenses to build protection. [1] In the case of infants and children immunization is a high priority area as it has wiped out many infectious diseases which used to decimate a sizeable of the population. [3] Immunization against vaccine-preventable diseases is essential to reduce the child mortality, morbidity and handicapped conditions. [2]

The WHO, launched global immunization program in 1974, known as Expanded Program on Immunization (EPI) to protect all children of the world against six killer diseases. In India, EPI was launched in January 1978. [4] The EPI focused on vaccinating young children with BCG, diphtheria and tetanus toxoids and whole cell pertussis (DTP or DTWP) and OPV vaccines, and chiefly covered urban areas. The Universal Immunization Programme (UIP, 1985) improved nationwide coverage of immunization and also included measles vaccine. The Pulse

Polio Immunization Programme (1995) enabled polio control. UIP has remained a key component of the Child Survival and Safe Motherhood Programme (1992), the Reproductive and Child Health Programme (1997) and National Rural Health Mission (NHRM, 2005). Efforts of UIP are supported by Child Vaccine Initiative.[5] The Global Alliance for Vaccines and Immunization (GAVI is worldwide coalition of organization, established in 1999, to reduce disparities in life-saving vaccine access and increase global immunization coverage. GAVI is collaborative mission of Govt, NCOs, UNICEF, WHO and World Bank. The GAVI and Vaccine fund also adopted the objective of introduction of new but under used vaccines in the developing countries, where the diseases like hepatitis B and H-influenza' B' *Hib) are highly prevalent.[4] The field of paediatric immunization is growing and changing as new vaccines are becoming available and previous diseases are eradicating due to the complicity and evolution of vaccine-preventable diseases. The goal of immunization is to protect the population from disease and decrease the incidence of disease and disease transmission. [6]

Background of Study

Communicable diseases are a major health problem in India which lead to death and disability of children under-five years of age. Immunization is vital; it protects nearly 3/4th of children against major childhood illness. There are several diseases which can be easily prevented by proper vaccination at appropriate time starting from birth. [7] Many parents have poor understanding of vaccine-preventable diseases (VPD) and many believe in false propagations about the contents, side effects and effectiveness of vaccines. Lack of good knowledge and positive attitude about childhood immunization was believed to be the root cause for resurgence of VPDs. [8] As mothers are the managers of Indian homes, their awareness about the disease and its prevention will help in the control of many diseases. [7]

Need of Study

The physical health of a child is important because it is associated with the mental and social development of children. 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. [13]

A descriptive study was conducted to determine the relationship between the literacy status and immunization coverage among 100 mothers of under-five children in Kolar district in Bangalore. 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. The study recommended to give awareness by health care personnel among mothers to improve their knowledge which in turn changes their attitude. [14]

TITLE

"The Effect of Structured Teaching Programme on Knowledge Regarding Immunization Among Mothers of Under-Five Children"

Hypotheses For The Study

H01: There will be no significant difference between the pre-test and post-test knowledge scores regarding immunization among mother of under-five children.

H1: There will be a significant difference between mean pre-test and post-test knowledge scores regarding immunization among mother of under-five children.

Secondary Hypotheses (Optional)

H02: There will be no significant association between mothers' mean pre-test and selected demographic variables.

H2: There will be a significant association between mothers' mean pre-test and selected demographic variables.

Research Questions

1. Does the Structured Teaching Programme improve the knowledge of mothers regarding immunization of under-five children?
2. Is there a significant difference between the pre-test and post-test knowledge scores regarding immunization among mothers of under-five with their selected demographic variables?

METHODOLOGY

A quantitative research approach with a pre-experimental one-group pre-test and post-test research design was adopted for the study. The target population comprised mothers of under-five children, and the accessible population included mothers attending the selected hospital in an urban area. A sample of 60 mothers was selected using a non-probability convenience sampling technique. A pre-test (O_1) was conducted to assess the mothers' knowledge regarding immunization using a self-structured knowledge questionnaire. Following the pre-test, a Structured Teaching Programme (X) on immunization was administered to the mothers. After the intervention, a post-test (O_2) was conducted using the same structured knowledge questionnaire to assess the improvement in knowledge. The pre-test and post-test knowledge scores were compared and analyzed using appropriate descriptive and inferential statistical methods, followed by interpretation of findings and conclusion. The symbolic representation of the study design was $O_1 \rightarrow X \rightarrow O_2$, where O_1 represents the pre-test, X represents the Structured Teaching Programme, and O_2 represents the post-test. A quantitative research approach with a pre-experimental one-group pre-test and post-test research design was adopted for the study. The target population comprised mothers of under-five children, and the accessible population included mothers attending the selected hospital in an urban area. A sample of 60 mothers was selected using a non-probability convenience sampling technique. A pre-test (O_1) was conducted to assess the mothers' knowledge regarding immunization using a self-structured knowledge questionnaire. Following the pre-test, a Structured Teaching Programme (X) on immunization was administered to the mothers. After the intervention, a post-test (O_2) was conducted using the same structured knowledge questionnaire to assess the improvement in knowledge. The pre-test and post-test knowledge scores were compared and analyzed using appropriate descriptive and inferential statistical methods, followed by interpretation of findings and conclusion. The symbolic representation of the study design was $O_1 \rightarrow X \rightarrow O_2$, where O_1 represents the pre-test, X represents the Structured Teaching Programme, and O_2 represents the post-test.

Data Analysis and Interpretation

Comparison of Pre-test and Post-test Knowledge Levels of Mothers (N = 60)

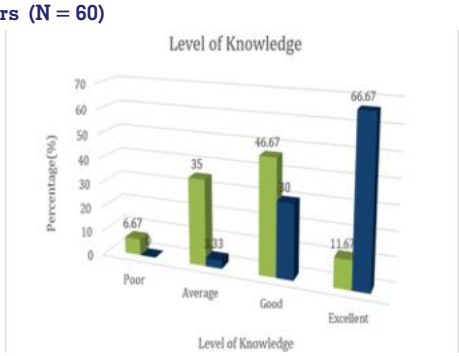

Figure 1.1- Comparison of pre-test and post-test knowledge levels of mothers

Table 1.1-Comparison of Pre-test and Post-test Knowledge Levels of Mothers (N = 60)

S. No.	Demographic Variable	χ^2 value	df	Table value (α=0.05)	p-value	Result
1	Age (in years)	0.021	2	5.991	0.990	NS
2	Educational qualification	3.422	3	7.815	0.331	NS
3	Family income per month	1.192	2	5.991	0.551	NS
4	Area of residence	0.205	1	3.841	0.651	NS
5	Number of children	6.258	3	7.815	0.100	NS
6	Mother's occupation	2.342	3	7.815	0.505	NS
7	Housing condition	0.438	3	7.815	0.932	NS
8	Religion	2.067	3	7.815	0.559	NS

Note: NS = Not Significant ($p > 0.05$); S = Significant ($p < 0.05$).

Table 1.1 and Figure 1.1 clearly depict a marked shift in the distribution of mothers across knowledge levels following the Structured Teaching Programme. The proportion of mothers in the Excellent knowledge category rose dramatically from 11.67% in the pre-test to 66.67% in the post-test an increase of 55 percentage points. The Poor and Average knowledge categories together accounted for 41.67% of mothers in the pre-test, but only 3.33% in the post-test, indicating that the educational intervention was effective in elevating the overall knowledge level of mothers.

Table 1.2- Association between Pre-test Knowledge Level and Selected Demographic Variables

S. No.	Level of Knowledge	Pre-test f	Pre-test %	Post-test f	Post-test %
1	Poor (0–25%)	4	6.67	0	0.00
2	Average (26–50%)	21	35.00	2	3.33
3	Good (51–75%)	28	46.67	18	30.00
4	Excellent (76–100%)	7	11.67	40	66.67
	Total	60	100.00	60	100.00

Interpretation:

Table 1.2 reveals that the calculated chi-square (χ^2) values for all eight demographic variables age, educational qualification, family income per month, area of residence, number of children, mother's occupation, housing condition and religion were less than their respective table values at α = 0.05. The associated p-values were all greater than 0.05 (ranging from 0.100 to 0.990). Therefore, there is no statistically significant association between the pre-test level of knowledge of mothers regarding immunization and any of the selected demographic variables.

Hence, the secondary hypothesis H_2 "There will be a significant association between mothers' pre-test knowledge scores and selected demographic variables" is not supported by the present data.

This finding suggests that the baseline level of knowledge regarding immunization was fairly homogeneous across different demographic subgroups of mothers in the study sample, and that gaps in immunization-related knowledge cut across age, education, income, residence and other social characteristics. It also implies that the Structured Teaching Programme is likely to be useful for mothers irrespective of these demographic differences.

Summary of Findings

The data analysis revealed that the majority of mothers were young, with 55.00% aged 18–25 years, 56.67% educated up to 10th standard, 86.67% having a monthly family income below ₹20,000, and 63.33% belonging to rural areas. In the pre-test, only 11.67% of mothers had excellent knowledge regarding immunization, while 41.67% had average or poor knowledge. Following the Structured Teaching Programme, the proportion of mothers with excellent knowledge increased to 66.67%, and none remained in the poor knowledge category. The mean knowledge score increased from 11.20 ± 3.76 (56.00%) in the pre-test to 16.23 ± 2.31 (81.17%) in the post-test, with a mean gain of 5.03 points (25.17%). The paired *t*-test showed a highly significant improvement in knowledge ($t = 10.38$, $df = 59$, $p < 0.001$; Cohen's $d = 1.34$), confirming the effectiveness of the intervention. Item-wise analysis demonstrated improvement across all 20 questionnaire items, with the greatest gains related to the concept of immunization, PCV vaccine, immunity, and pentavalent vaccine coverage. However, the chi-square analysis showed no significant association between pre-test knowledge and any of the eight selected demographic variables ($p > 0.05$).

CONCLUSION

Based on the Findings of the Study, it was Concluded that a considerable proportion of mothers had inadequate knowledge regarding immunization before the intervention, with 41.67% having average or poor knowledge and only 11.67% having excellent knowledge. The Structured Teaching Programme was found to be effective in improving mothers' knowledge, as the mean knowledge score increased from 56.00% in the pre-test to 81.17% in the post-test, with a highly significant improvement ($t = 10.38$, $df = 59$, $p < 0.001$; Cohen's $d = 1.34$). No significant association was found between pre-test knowledge and selected demographic variables. Thus, the Structured Teaching Programme can be considered an effective, low-cost, culturally appropriate, and easily replicable nursing intervention for improving maternal knowledge and promoting timely and complete immunization among under-five children.

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