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Original Research Paper

Evaluating the Effect of a Structured Teaching Program on Mothers' Knowledge of Optional Vaccination among Mothers of Children Under Five at a Selected Hassan Hospitals, Karnataka

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ABSTRACT:
The objective of the research was to evaluate how well a structured teaching program (STP) may increase mothers' understanding of optional vaccinations and their benefits for children under five. The study, conducted at a selected hospital in Hassan, Karnataka, India, set out to achieve specific objectives: firstly, to assess the initial knowledge levels of mothers about optional vaccines, secondly, to determine the impact of the STP, and thirdly, to analyze the relationship between posttest knowledge scores and various demographic factors. The research was grounded in Von Bertalanffy's General System Theory, offering a conceptual framework to understand the complexities involved in knowledge enhancement through educational programs. The research followed an evaluative approach, suitable for its objectives. It used a one-group pre-test and post-test format in a pre-experimental design. A questionnaire created by the researcher was used to collect data from 50 moms whose children were under five when they were hospitalized to Rajeev Hospital in Hassan. This data encompassed socio-demographic details and the structured questionnaire. The results of the study revealed significant improvements in knowledge levels among mothers following the STP. The pretest knowledge score averaged 23.93%, which substantially increased to 70.26% post-intervention. The 't' value of 13.28 ($p<0.05$) signified the effectiveness of the STP in enhancing knowledge. The study also found that monthly family income was significantly associated with posttest knowledge scores, while other demographic variables showed no substantial correlations. The study underscores the importance of further interventions to enhance the knowledge of mothers with young children regarding optional vaccines. To increase awareness and knowledge among this target population, it suggests educating mothers about certain vaccines, such as the rabies vaccine, rotavirus vaccine, influenza vaccine, meningococcal conjugate vaccine, cholera vaccine, varicella vaccine, Japanese encephalitis vaccine, and hepatitis A vaccine.

Keywords: Maternal Awareness, Structured Teaching Program (STP), Optional Vaccination, Von Bertalanffy's General System Theory

INTRODUCTION:

Children represent society's most precious asset and hold the key to our collective future. The responsibility for promoting and maintaining their health transcends individual duty; it is a societal imperative. Disturbingly, historical data reveals that five million children succumb to fatal infections each year, with an additional five million suffering from disabilities induced by such diseases. Consequently, the growth and development of children bear profound implications for the nation as a whole. To realize the noble aspiration of universal health coverage, primary healthcare principles underscore the paramount importance of prevention. Among the most financially prudent healthcare interventions is the administration of vaccines against infectious diseases (Peter, 2015).

A mother bears the profound responsibility of safeguarding her child's well-being, ensuring their freedom from the scourge of infections. In this endeavor, certain vaccinations are obligatory for infants in India, while others are merely recommended. Optional vaccinations are those that parents may choose to administer based on their discretion. Understandably, the prospect of subjecting one's infant to multiple injections may evoke maternal apprehension. However, it is crucial to recognize that a brief moment of discomfort serves as a gateway to a healthier tomorrow. Beyond the obligatory vaccines, the array of optional vaccines has

acquired increasing relevance in today's interconnected world. These vaccines play an instrumental role in shielding infants from lethal diseases. As the adage goes, "Prevention is better than cure." Administering vaccines in a timely fashion constitutes an effective prophylactic measure against the onslaught of deadly diseases (Optional Vaccines for Infants in India, Baby care, 2014).

Immunization emerges as the foremost weapon in the fight against the six pervasive diseases, namely, whooping cough, diphtheria, tetanus, tuberculosis, poliomyelitis, and measles, which collectively constitute the leading cause of child mortality under the age of five. During our research endeavors, we had the privilege of engaging with parents, revealing a disconcerting lack of awareness among those with children under the age of five regarding the importance and necessity of vaccines. Given the aforementioned realities, it becomes evident that mothers of infants and young children must enhance their knowledge concerning optional vaccines to facilitate the upbringing of a new generation marked by reduced health risks (Saraswathi & Lissa, 2014).

In the context of global health, immunization is also crucial, particularly in light of the growing dangers posed by infectious diseases. Immunization is thought to be one of the most economical interventions out of all the disease preventive techniques. The nation's National Immunization Schedule already includes the vaccinations intended to prevent the six dangerous illnesses listed above. Nonetheless, governments in developing countries, like India, are seriously considering incorporating new vaccines, such as the Hib, Hepatitis A, Typhoid, Pneumococcal, and Varicella vaccines, into their regular immunization programs due to the seriousness of other infectious diseases that have surfaced over the previous few decades. All of them are referred to as elective vaccinations (Hosla, 2012).

Immunization is a basic necessity for all children and an essential, affordable method of reducing childhood illnesses and impairments. It is well known that parents always have the best interests of their children at heart, which is why they put in place all kinds of safety precautions, including child safety seats and kid-proof door locks. Similarly, immunizations serve as a vital line of defense against the threat of infectious diseases, potentially preventing illnesses and deaths in children (Datta, 2014).

Tragically, millions of children meet their demise annually due to diseases that are entirely preventable through vaccination, encompassing afflictions such as measles, diphtheria, tetanus, and pneumonia. Children remain disproportionately vulnerable to infections and ailments like mumps, rubella, typhoid, and hepatitis B. Consequently, it is the inherent right of every child to be afforded the protection conferred by vaccines against a spectrum of preventable diseases (Datta, 2014).

While global vaccination coverage generally remains stable, there is a discernible increase in the adoption of new and underutilized vaccines. Immunization serves as a formidable bulwark, averting an estimated two to three million fatalities annually. However, a sobering statistic remains, as approximately 18.7 million infants across the globe continue to be denied access to fundamental vaccines (Immunization coverage, 2015).

Meningitis and pneumonia are caused by Hemophilus influenzae type b, or Hib. The Hib vaccination had been made available in 192 countries as of 2014, with an estimated 56% of people worldwide having received it. Rotaviruses are the primary cause of severe diarrheal infections that young children suffer from all around the world. The rotavirus vaccination had been made available in 74 nations by the end of 2014, with a worldwide coverage rate of 19%. Pneumococcal illnesses include otitis media, sinusitis, bronchitis, pneumonia, meningitis, and febrile bacteremia. By the end of 2014, 117 countries have adopted the pneumococcal vaccine, with an estimated 31% of people worldwide having received it (Swierzewski, 2015).

Remarkably, 527,000 children under five are thought to die from rotavirus-induced diarrhea every year; more than 85% of these terrible deaths take place in low-income nations in Asia and Africa. Cases of meningitis primarily afflict adults over 60 and children under the age of five. Notably, 86 cases of meningitis per 100,000 children ages 0–4 and 357 cases per 100,000 babies ages 0–11 months are reported each year in India (Muppidathi, et al., 2017).

Statement of the Problem

The objective of this study is to evaluate the impact of a structured teaching program (STP) on mothers of children under five who attend a particular hospital in Hassan with regard to their understanding of optional vaccinations and their purpose.

Objectives of the Research:

1. to assess mothers of children younger than five years' old's current understanding of the aim of voluntary vaccinations.
2. to evaluate how the Structured Teaching Program has affected mothers' understanding of immunizations that are optional and why they are given to children younger than five.
3. to look at possible relationships between post-test knowledge scores and particular demographic factors in moms of younger children.

Research Hypothesis:

H1: Mothers of children under five years old will have significantly different knowledge scores on optional vaccinations and their intended use between the mean pretest and posttest. **H2**: Mothers of children under five will have a significant link with their demographic factors and post-test knowledge scores on optional vaccinations and their intended purpose.

Limitations of the Study

1. Only moms hospitalized to Hassan's Rajeev Hospital with children under five are eligible to participate in the research.
2. The study is limited to a period of four to six weeks.

Significance of the Study:

This study emphasizes how crucial it is to put in place a systematic education campaign that focuses on the goal of voluntary vaccinations. It is expected to enhance the awareness of moms whose children are younger than five years old, guaranteeing a more comprehensive comprehension of elective vaccinations and their intended use.

Selection Criteria for Samples:

Inclusion Criteria*:*

1. Mothers hospitalized to Hassan's Rajeev Hospital who have children under the age of five are considered included.
2. Mothers who are fluent in Kannada both written and spoken.
3. Mothers who are prepared to take an active role in the research.

Exclusion Criteria:

1. Mothers who have participated in vaccination education campaigns in the past meet the first requirement.
2. Mothers whose children are really sick.

Review of Literature:

A research was carried out to look at the effect of the Haemophilus influenzae type b (Hib) vaccine on the occurrence of Haemophilus influenza in children under the age of five. The approach for the study included an examination of national mortality, hospitalization, laboratory, and notification data. The outcomes of the study demonstrated that the introduction of the Hib vaccination resulted in a significant reduction in hospitalizations for Haemophilus influenza meningitis among children under the age of five. Prior to the introduction of the vaccine, the hospitalization rate for Haemophilus influenza meningitis in this age range was 27 per 100,000, but it dropped to 2 per 100,000 after immunization. According to this finding, the Hib vaccination has the potential to prevent at least 80 instances of meningitis and 30 cases of epiglottis among children under the age of five per year (Wilson et al., 20120).

In Nepal, a research was done to investigate the impact of a Japanese Encephalitis Immunization Program that used a live, attenuated SA 14-14-2 vaccine. From 2006 to 2009, mass vaccination programs were conducted in 23 of Nepal's 75 administrative districts. These initiatives first targeted the six Terai districts with the greatest prevalence of Japanese Encephalitis (JE), but by 2009, they had been expanded to 20 of 24 Terai districts and 3 of 35 hill districts. The programs intended to immunize children aged 1-15 years in 11 districts or all individuals aged 1 year in 12 districts, as surveillance data revealed that up to 50% of JE cases occurred in people over the age of 15. A communication plan was created to increase campaign participation, and vaccinations were made available for free at healthcare institutions. The median reported campaign coverage rate was 94%, with some districts reporting coverage rates of 100% or more, which might be ascribed to population underestimate or cross-district vaccinations (Upreti, 2013).

A research was carried out to evaluate the efficacy of conjugate Hib vaccinations provided on various schedules. Based on case-control studies, the vaccine's efficacy against invasive Hib illness was predicted to be 59% for one dose and 97% for three doses. Data from four cohort studies revealed that the three-dose plan was 94% effective. There was some evidence that the Hib vaccination's efficacy could be reduced when combined with pertussis vaccine. Furthermore, the study revealed that a booster dose might give extra protection after a complete primary vaccine series and could compensate for an inadequate primary series. Observational data suggested that at least two doses of the Hib vaccination were needed for maximum efficiency, but no precise regimen was recommended (Jackson, 2013).

A research was conducted to measure the knowledge of mothers with children under the age of five about vaccination at a designated hospital in Mangalore, Yenepoya Hospital. The study's goal was to assess moms' understanding of vaccination and create an instructive pamphlet. The study used a non-experimental exploratory survey design with 30 mothers of children under the age of five who attended Yenepoya Hospital in Mangalore. According to the findings, 30% of mothers had inadequate knowledge, 43.4% had moderate knowledge, 23.4% had high knowledge, and 3.33% had exceptional knowledge (Jose, 2013).

A research was carried out to assess the coverage of optional vaccinations in rural and urban settings in the Punjab district of Amritsar. The children in the research ranged in age from 24 to 60 months. The findings found that 53.9% of the children in the study were male and 46.1% were female, with boys having considerably better vaccine coverage. Furthermore, the study discovered a highly significant difference in vaccination coverage between rural and urban populations, underlining the need to increase immunization coverage in rural regions, particularly for optional vaccines (Puri, 2007).

A study in Italy looked at how mother socio-demographic characteristics, maternal education, knowledge, and views of vaccines can influence preschool children's acceptance of optional vaccinations. The research interviewed 1,035 mothers and discovered that 59% of respondents had inoculated their children with the MMR vaccination and 54% had immunized their children against pertussis. According to the findings, mothers' views, educational levels, socio-demographic features, socio-economic variables, and local health policies may impact children's vaccine uptake. In Italian vaccination policy, the study advised prioritizing health promotion based on collaboration between parents and healthcare providers (Serafini et al., 2015).

The existing literature review on immunization and vaccine-related studies provides valuable insights into various aspects of immunization programs and vaccine coverage. However, a noticeable research gap in the literature pertains to the specific context of maternal awareness of optional vaccinations among mothers of children under the age of five in the selected hospital at Hassan, Karnataka. While several studies have explored vaccine effectiveness, coverage, and maternal knowledge in different settings and regions, there is a distinct absence of research focusing on the impact of a structured teaching program (STP) on maternal awareness of optional vaccinations in this particular region. This gap in the literature highlights the need for a study that specifically assesses the effectiveness of structured teaching programs in enhancing maternal awareness and understanding of optional vaccinations in the context of Hassan, Karnataka, contributing to the existing body of knowledge on immunization and maternal health in this region.

Research Methodology:

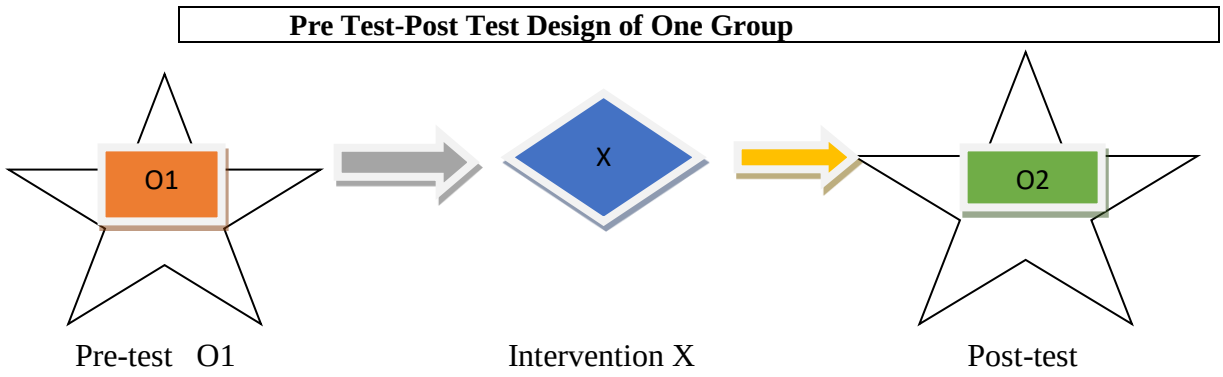
Research Approach:

Given the nature of the research topic at hand and the goals pursued, a quantitative evaluative survey technique was judged appropriate for this study.

Research Design:

The present study's research design is pre-experimental; one group pre-test post-test. It contains manipulation, but no randomization or control group.

Figure 1: Schematic Representation of Research Design



Variables:

The study encompasses three types of variables: independent, dependent, and demographic. a.

Dependent variable:

This variable refers to changes in awareness about optional immunizations and their purpose among mothers of children under the age of five who are admitted to the chosen hospital.

Independent variable:

It refers to the structured teaching program focused on knowledge about optional vaccines and their purpose.

Demographic variable*:*
Age, residence, education, religion, educational status of the mother, monthly family income, mother's occupation, family type, drainage system, source of information, number of children, and the type of hospital where the child was born are all considered demographic variables in relation to optional vaccines and their purpose.

Research Setting:
The research was conducted in Hassan, Karnataka, from June 2 to July 2, 2017. The study was carried out at Rajeev Hospital, which specializes in pediatric treatment. The investigator's interest in transferring information to prospective moms, with the goal of educating mothers with children under the age of five, drove the choice of this facility. Other considerations considered while choosing the research site included familiarity with the area and the availability of the sample group. Rajeev Hospital receives around 475 patients every month, with about 400 admissions being children under the age of five, who remain for 5-7 days. Notably, bacterial and viral illnesses account for 70-75% of these instances.

Population Targeted:
The study's target group consists of all moms with children under the age of five whose children are hospitalized to Hassan's Pediatric Hospital.

Population Easily Reachable:
The accessible population, which is a subset of the study's target group, consists of mothers with children under the age of five whose children are admitted to Rajeev Hospital, Hassan.

Sample Quantity and Size:
The sample size for the study is 50 women with children under the age of five who fulfill the inclusion and exclusion criteria and are hospitalized to Rajeev Hospital in Hassan.

Sample Technique:
The individuals for this study were chosen via convenient sampling, a sort of non-probability sampling.

Criteria for Sample Selection:

Criteria for inclusion*:*
1. Mothers of children under the age of five hospitalized and staying for 5-7 days at Rajeev Hospital in Hassan.
2. Kannada-reading and writing mothers.
3. Mothers who are willing to actively engage in the research.
4. Mothers who have participated in an immunization training program.
5. Mothers who have critically sick children.

Data Collection Procedure:
The research investigator began the data gathering procedure by obtaining consent and cooperation from the hospital's administrator. Permission was duly acquired from the appropriate authorities at Rajeev Hospital, Hassan, to collect data for the primary study, which took place from June 3 to July 3. The following steps were taken during the data gathering procedure:

1. The investigator introduced herself to the individuals and struck up a conversation with them.
2. Each subject provided written consent.
3. Subjects were given an orientation on the study's aims, the nature of the questionnaire, and safety precautions such as maintaining confidentiality, security, and identity protection.
4. Non-probability convenient sampling was used to pick subjects.
5. Socio-demographic information were obtained from the individuals, and a pre-test utilizing a structured questionnaire was used to assess the subjects' knowledge.

Following the pre-test, all subjects were given the structured teaching program (STP).
1. The post-test was administered 7 days after the pre-test, using the identical questionnaire as in the pre-test.
2. The acquired data was tallied and examined.

Result and Discussion:
The research began with the analysis and interpretation of data obtained from 50 women with children under the age of five at Rajeev Hospital in Hassan. The goal of this study was to assess the efficacy of STP on optional vaccinations. Using descriptive and inferential statistics, the acquired data was tallied, arranged, and analyzed.
The analysis is the process of arranging and synthesizing data in order to answer research questions and evaluate hypotheses (Polit & Hungler, 2000)).
This study's data analysis and interpretation are based on data collected through a structured questionnaire schedule regarding optional vaccines and their purposes; the results were computed using descriptive and inferential statistics based on the study's objectives and hypothesis.

Description of Socio-Demographic Variables in Frequency and Percentage:

Table 1: Demographic Profile N=50

Demographic variables		No. of mothers	%
Age	15 - 20yrs	08	16%
	20 - 25yrs	18	36%
	25 -30yrs	22	44%
	More than 30yrs	02	4%
Residence	Rural	10	20%
	Urban	13	26%
	Sub-urban	27	54%
Religion	Hindu	31	62%
	Christian	13	26%
	Muslim	06	12%
Educational status	No formal Education	00	0%
	Primary Education	09	18%
	High School	31	62%
	Graduate and post Graduate	10	20%
Monthly Income of the family	Below 5000/-	02	04%
	5000-10000/-	10	20%
	10000-15000/-	30	60%
	15000-20000/-	08	16%
Occupation of the mother	House wife	27	54%
	Self-employee	06	12%
	Private employee	14	28%
	Govt. employee	03	06%
Type of family	Nuclear family	28	56%
	Joint family	17	34%
	Single parent	05	10%
Type of drainage	Open	06	12%
	Closed	36	72%
	Any other	08	16%
Source of water supply	Tap water with boiling	08	16%
	Tap water without boiling	07	14%
	Bore well	05	10%
	Filter water	30	60%
Source of information	Health professionals	36	72%
	Mass media	04	08%
	Friends	08	16%
	Family members	02	04%
Number of children	1	14	28%
	2	28	56%
	3	06	12%
	More than 3	02	04%
Type of the place where child was born	Home	03	06%
	Govt. hospital	32	64%
	Private hospital	15	30%

Table 1 shows the demographic information of mothers with children under the age of five who participated in the following study: "a study to evaluate the effectiveness of a structured teaching program (STP) regarding optional vaccines and its purpose among mothers with children under the age of five at a selected hospital in Hassan."

Table 2: Distribution of Respondents by Religion

Religion	Number	Percentage
Hindu	31	62%
Christian	13	26%
Muslim	06	12%

According to the preceding data, the majority of respondents (62% of them) were Hindus, 26% were Christians, and 12% were Muslims.

Table 3: Distribution of Respondents by Occupation of the Mother

Occupation of the mother	Number	Percentage
House wife	27	54%
Self-employee	06	12%
Private employee	14	28%
Govt. employee	03	06%

According to the above data, 54% of the respondents were housewives, 12% were self-employed, 28% were private employees, and the remaining 06% were government employees.

Table 4: Distribution of Respondents by Number of Children

No. of children	Number	Percentage
1	14	28%
2	28	56%
3	06	12%
More than 3	02	04%

According to the above data, 28% of respondents had just one kid, 56% of respondents had two children, 12% of respondents had three children, and the remaining 4% of respondents had more than three children.

Analysis and Interpretation of Pre-Test Knowledge Score of Mothers of Under Five Children on Optional Vaccines and Its Purpose.

Table 5: Pre-test knowledge scores on different aspects of optional vaccines and its purpose in mothers of under five children. **N=50**

No.	Knowledge Aspects	Statements	Max. Score	Respondents Knowledge			
				Mean	SD	Mean(%)	SD(%)
I	General knowledge about vaccine.	5	5	0.88	0.96	17.6	19.2
II	General knowledge about vaccine which prevents bacterial disease.	8	8	1.88	1.15	23.5	14.37
III	General knowledge about vaccine which prevents viral disease.	17	17	4.42	3.24	26	19.05
	Overall	30	30	7.18	5.35	23.93	17.83

The table above shows the evaluation of knowledge among moms of children under the age of five in terms of pre-test score. Concerning many features of optional vaccinations and their function.General knowledge about vaccine has a mean score of 0.88 and a standard deviation of 0.96, general knowledge about vaccine that protects bacterial disease has a mean score of 1.88 and a standard deviation of 1.15, and general knowledge about vaccine that prevents viral disease has a mean score of 4.42 and a standard deviation of 3.24. The mean percentages of various aspects of knowledge, such as general knowledge about vaccine, general knowledge about vaccine that prevents bacterial disease, and general knowledge about vaccine that prevents viral disease, are 17.6%, 23.5%, and 26%, respectively, whereas the SD percentages of the above aspects are 19.2%, 14.37%, and 26%, respectively.

Table 6: Level of Pre Test Knowledge N=50

Grade	No. of under- five mothers	%
Inadequate	40	80
Moderate	10	20
Adequate	0	0
Total	50	100

The table above depicts the distribution of pre-test knowledge of under-five moms about optional immunizations and their purpose. 40 (80%) of the individuals had insufficient level knowledge, 10 (20%) had intermediate level knowledge, and none had adequate level knowledge.

Analysis and Interpretation of Post Test Knowledge Score of Mothers of Under-Five Children on Optional Vaccines and Its Purpose

Table 7: Aspect wise Post-test Mean Knowledge scores of Respondents on optional vaccines and its purpose in mothers of under-five children N=50

No.	Knowledge Aspects	Statements	Max. Score	Respondents Knowledge			
				Mean	SD	Mean(%)	SD(%)
I	General knowledge about vaccine.	5	5	3.6	1.21	72	24.2
II	General knowledge about vaccine which prevents bacterial disease.	8	8	5.28	1.53	66	19.12
III	General knowledge about vaccine which prevents viral disease.	17	17	12.2	2.38	71.76	14
	Overall	30	30	21.08	5.12	70.26	17.06

The table above depicts the post-test knowledge score evaluation on several elements of optional vaccinations and their function. General vaccine knowledge with a mean score of 3.6, SD of 1.21 with a mean percentage of 72 and SD percentage of 24.2, general vaccine knowledge that prevents bacterial disease with a mean score of 5.28, SD of 1.53 with a mean percentage of 66 and SD percentage of 19.2 and general vaccine knowledge that prevents viral disease with a mean score of 12.2, SD of 2.38 with a mean percentage of 71.76 and SD percentage of 14.

However, the aggregate post-test mean percentage knowledge score was 70.26% with a standard deviation of 17.06% among the responders. So, following the delivery of a structured instruction program, they had 70.26% knowledge with a mean of 20.08 and SD of 5.12.

Table 8: Level of Post Test Knowledge N=50

Grade	No. of mothers of under- five children	%
Inadequate	0	0
Moderate	9	18
Adequate	41	82
Total	50	100

The table above displayed the distribution of post-test knowledge level of mothers of children under the age of five about optional vaccinations and their purpose. 41 (82%) of the individuals had acceptable level knowledge, 9 (18%) had moderate level knowledge, and none had poor knowledge.

Analysis and Interpretation of Effectiveness of Sructured Teaching Programme (STP) on Knowledge Regarding Optional Vaccines and Its Purpose Among Mothers of Under Five Children by Comparing Pre-Test and Post-Test Knowledge Scores.

Table 9: Comparison of Pre test and Post test Knowledge scores N = 50

No.	Knowledge Aspects	Respondents Knowledge score				Paired 't' Test
		Pre test		Post test		
		Mean	SD	Mean	SD	
I	General knowledge about vaccine.	0.88	0.96	3.6	1.21	t= 12.59**
II	General knowledge about vaccine which prevents bacterial disease.	1.88	1.15	5.28	1.53	t-12.68**
III	General knowledge about vaccine which prevents viral disease.	4.42	3.24	12.2	2.38	t=13.72**
	Overall	7.18	5.35	21.08	5.12	t=13.28**

*Significant at p≤0.05,**highly significant at p≤0.01, df=49

The table above compares before and post-test knowledge scores among moms of children under the age of five. The difference between pre and post knowledge scores is examined using a paired t -test, which is shown to be highly significant in all domains.

Table 10: Determination of Overall Knowledge Score

	No. of mothers of under-five children	Mean ±SD	students paired t-test
Pre test	50	7.18±5.35	t=13.28 p=0.001** df=49, significant
Post test	50	21.08±5.12	

***significant at p≤0.05, df**

When it comes to optional vaccinations and their function, the individuals have below-average awareness on all fronts.
A descriptive research on vaccine knowledge and attitudes among mothers with children under the age of five was done.
The table above depicts the determination of the overall mean knowledge score before and after the delivery of a structured instruction program. The difference in pre and post knowledge score is assessed using paired t test (13.28) and found to be very significant in all categories.

Table 11: Comparison of Pre Test and Post Test Knowledge

	Pre test		Post test	
	No. of mothers of under-five children	%	No. of mothers of under-five children	%
Inadequate	40	80%	0	0%
Moderate	10	20%	9	18%
Adequate	0	0%	41	82%

The above table shows comparison of pre test, post test knowledge level, which reveals that their is significant increase in knowledge level after intervention of STP.

Multiple Cylindrical Diagram Showing Comparison of Pre-Test and Post-Test Overall Knowledge.

Table 12: Each Domain Wise Percentage of Knowledge N=50

Domains	Pre-test %	Post-test %	% of knowledge gain
General knowledge about vaccine.	17.6%	72%	54.4%
General knowledge about vaccine which prevents bacterial disease.	23.5%	66%	42.5%

General knowledge about vaccine which prevents viral disease.	26%	71.76%	47.83%
OVERALL	23.93%	70.26%	46.33%

When it comes to optional vaccinations and their function, the individuals have below-average awareness on all fronts. A descriptive research on vaccine knowledge and attitudes among mothers with children under the age of five was done. The table above demonstrates each domain's knowledge gain following PTP intervention. Comparing pre test (23.93%) and post test (70.26%) score percentages yielded an overall knowledge increase of 46.33%.

Table 13: Effectiveness of Planned Teaching Programme

	% of pre-test knowledge	Post-test knowledge	% of knowledge
Knowledge	23.93%	70.26%	46.33%

When it comes to optional vaccinations and their function, the individuals have below-average awareness on all fronts.A descriptive research on vaccine knowledge and attitudes among mothers with children under the age of five was done. The following table compares the success of a planned teaching program by comparing before and post-test knowledge scores, revealing a 25.57% increase in knowledge acquisition.

Objective 3: To Findout the Association between Posttest Knowledge Scores Regarding Optional Vaccines and Its Purpose and the Selected Demographic Variables of Mothers of under Five Children.

Findings of the Study:

Distribution of Age:

Distribution of the mothers of under-five children in relation to their age group reveals that 16% of mothers were in the age group of 15-20 years, 36% of mothers were in the age group of 20 -25 years,44% of mothers in the age group of 25 -30, whereas 4% of mothers in the age group of more than 30 years.

Distribution of Residence:

Distribution of residence of under-five mothers' reveals that 20% were in rural, 26% in urban and 54% were in sub-urban areas.

Distribution of Religion:

Distribution of under-five mothers in relation to their religion reveals that 60% of mothers were belongs to Hindu religion, 26% were belongs to Christian religion and rest of them that is 12% were belongs to Muslim.

Distribution of monthly income of family:

Distribution of under-five mothers in relation to their monthly income of family reveals that 04% of the family income was less than 5000/-, 20% of them were in the range between 5000-10000/-, 60% were in the range between 10000-15000/- and 16% were in the range between 15000-20000/-.

Findings Related to Objectives:

Objectives 1:- To assess the existing knowledge regarding optional vaccines and its purpose among mothers of under five children.

Based on the objectives of the study the finding of the pre-test knowledge score of the mothers of under-five children regarding optional vaccines and its purpose shows that they were able to answer the questions to some extent. The study shows that the subjects in pre-test were having average 23.93% of knowledge regarding optional vaccine and its purpose in overall aspects. Subject's pre-test level of knowledge on optional vaccines and its purpose shows that 80% of the subjects were having inadequate knowledge and 20% of them having moderately adequate knowledge.

Considering the aspects of optional vaccines and its purpose, the subjects are having below average knowledge on all aspects.

According to the study's goals, the finding of the pre-test knowledge score of mothers of under-five children about optional vaccinations and their purpose indicates that they were able to answer the questions to some extent. According to the study, the individuals in the pre-test had an average of 23.93% understanding about the optional vaccination and its function in general. The pre-test level of awareness on optional vaccinations and their aim revealed that 80% of the individuals had insufficient information and 20% had somewhat acceptable understanding.

When it comes to optional vaccinations and their function, the individuals have below-average awareness on all fronts.

Objective 2: To assess the effectiveness of the Structured Teaching Program in increasing knowledge about optional vaccinations and their purpose among mothers of children under the age of five.

The study's findings demonstrated a substantial rise in post-test knowledge score following STP delivery. The knowledge score before the exam was 23.93%, while the knowledge score after the test was 70.26%. The difference in knowledge scores between pre-test and post-test was 46.33%. The pre-test level of awareness of mothers of under-five children about optional vaccinations and their purpose revealed that 80% of the individuals had insufficient information and 20% had relatively good knowledge.

Objective 3*:* Determine the relationship between post-test knowledge scores and the specified demographic factors of mothers with children under the age of five.

The study's findings show a significant increase in the knowledge of mothers of under-five children in the post-test, and that among the several demographic variables, under-five mothers' educational status and type of family were significantly associated with the pre-test knowledge scores on optional vaccines and their purpose.Their pre-test knowledge score is substantially connected with their source of water supply x2 = 13.59 (0.001 significance). These sorts of associations are statistically significant, as determined by the pearson chi square test.

The study found that the mean post-test knowledge score was greater than the mean pretest knowledge score. As a result, flashcard-assisted teaching of knowledge about optional vaccinations had a considerable impact on rural people. Following the planned training program, moms with children under the age of five learned about optional immunizations.

CONCLUSION:

The present research was conducted to evaluate the effectiveness of organized instructional programs. The systematic training program provided to mothers of children under the age of five about optional immunizations and their purpose, which should be regarded a top priority. The education provided to moms of under-five children was extremely helpful in enhancing knowledge when compared to the pre-test level of knowledge scores. So, according to this chapter, the pre-test level of knowledge about optional vaccinations and their purpose among mothers of under-five children was 23.93%, and after intervention, the post-test level of knowledge was 70.26%. The structured instruction program's total efficacy was 46.33%. As a result, the researcher feels that broadening the scope and application of the study would be beneficial.

Recommendation for Further Study:

Several research approaches can be employed to study various aspects of optional vaccines in under-five children and maternal knowledge about them. Initially, a survey can be conducted to estimate the rates of optional vaccine utilization among this age group. Following that, a descriptive study can evaluate mothers' knowledge of a variety of optional vaccines, such as pneumococcal conjugate vaccine, typhoid vaccine, meningococcal meningitis vaccine, cholera vaccine, varicella vaccine, Japanese encephalitis vaccine, hepatitis A vaccine, rotavirus vaccine, influenza vaccine, and rabies vaccine, as well as their purpose. A comparable research with a bigger sample size can be conducted to look deeper into the influence of educational programs. Furthermore, a proper experimental investigation can establish the efficacy of such educational methods in increasing knowledge. Expanding the scope, another study can investigate the knowledge levels of medical, para-medical, and other professionals regarding these vaccines and their purposes. A comparative study can be undertaken to evaluate the efficacy of educational interventions. Lastly, replicating similar studies with different demographic characteristics can provide a comprehensive understanding of optional vaccine awareness and its effectiveness.

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