https://doi-ds.org/doilink/01.2024-69451478/GIJNR

Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

Enhancing Immunization Knowledge and Attitudes: Impact of a Structured Teaching Program among Mothers of Under-Five Children in Gwalior's Selected Rural Areas

Ms. Viramjit Kaur[1], Dr. Sudharani Banappagoudar[2]

PG Student,[1] Professor[2] Department of Child Health Nursing, School of Nursing Science
ITM University, Gwalior- 474026 MP, India

Article Information:

Type of Article: *Research Article (Original)* **Received On:** *9th January 2024*

Accepted On: *20th January 2024* **Published On**: *30th January 2024*

Abstract:

Introduction: Childhood immunization is crucial for global health, saving 3 million lives annually. Despite India's universal programs, challenges like low awareness persist. This study assesses a teaching program's impact on mothers' knowledge and attitude toward under-five immunization in Antri, near Gwalior. **Objective:** The main goal is to evaluate the structured teaching program's impact on mothers' knowledge and attitude. The study also seeks to identify key demographic factors influencing these outcomes, offering insights for future maternal and child healthcare initiatives. **Research Methodology:** Employing a quasi-experimental design, 30 mothers were purposively sampled. The intervention included a structured teaching program, with assessments covering demographic variables, knowledge, and attitude. Data analysis utilized descriptive and inferential statistics, including chi-square tests and paired 't' tests. **Results:** Post-program assessments revealed a significant increase in both knowledge and attitude scores. Associations were found between age, occupation, and these scores, emphasizing the influence of demographic factors. However, no significant associations were observed with religion, education, or information sources. **Conclusion:** The study finds that the teaching program positively influences mothers' immunization knowledge and attitude. Demographic variables significantly shape outcomes, underscoring the importance of tailored interventions. Despite limitations, the research offers valuable insights for future maternal and child healthcare initiatives.

https://doi-ds.org/doilink/01.2024-69451478/GIJNR

Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

Keywords: Immunization, mothers, under-five children, structured teaching program, knowledge, attitude, rural healthcare, maternal education, demographic factors.

Introduction:

Vaccination is a highly cost-effective means to reduce childhood morbidity and mortality, saving an estimated 3 million lives annually, with potential for an additional 2 million lives. India provides universal routine childhood immunization free of charge through programs like the Expanded Programme of Immunization (EPI).[1,2] Vaccines, stimulating the immune system, have virtually eliminated several diseases. Challenges include barriers like decreased awareness and cost-effectiveness.[3] Ensuring successful vaccine implementation relies on addressing these barriers and emphasizing parents' primary responsibility for their child's immunization, highlighting the crucial role of awareness and knowledge dissemination among caregivers.[2]

The research emphasizes the critical role of maternal education in reducing under-five mortality rates by focusing on immunization.[4] With approximately 2.5 million children under five succumbing annually to preventable diseases, particularly in India, where around 12 million children were estimated to be unimmunized in 2006, the study underscores the need for targeted interventions.[5] Lack of awareness, motivation, and knowledge about immunization contributes to low coverage rates, with significant repercussions such as high incidence rates of diseases like pertussis, diphtheria, and measles. A study conducted in Bihar revealed that maternal literacy significantly influenced immunization levels, highlighting the potential impact of education on mothers' knowledge and attitudes.[6] The research underscores the urgency of structured teaching programs to address the learning needs of mothers, aiming to promote child health, reduce mortality, and improve immunization coverage.[7]

The study area of Antri, India, has seen challenges in immunization coverage, as reported coverage rates indicate issues with accuracy. Despite the country's overall high coverage since 1990, discrepancies persist, with only about half of birth cohorts fully immunized.[8] The lapse in coverage is attributed to factors like long distances to health facilities, misconceptions about vaccine side effects, and a lack of awareness.[9] Immunization coverage surveys reveal a substantial drop in coverage rates for various vaccines, signaling a need for targeted educational interventions.[10,11] Recognizing the societal and global implications of failure to immunize, the study emphasizes the importance of health care providers understanding the

https://doi-ds.org/doilink/01.2024-69451478/GIJNR

Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

benefits and risks of vaccines and engaging in informed discussions with parents.[12] In light of these challenges, the research aims to assess the effectiveness of a planned teaching program for mothers in the Antri community, recognizing the potential impact on disease control through enhanced maternal knowledge.

Research Methodology:

In this research, a quasi-experimental one-group pre-test post-test design was employed to assess the effectiveness of a structured teaching program on knowledge and attitude regarding immunization among mothers of under-five-year-old children in Antri Village, situated near Gwalior. A quantitative research approach was utilized, and a sample size of 30 mothers was selected through purposive sampling. The intervention involved pre-test assessments, the structured teaching program, and post-test assessments. The study focused on demographic variables, knowledge (assessed through a 30-item questionnaire), and attitude (evaluated using a 15-item Likert scale). Scoring criteria were established for both knowledge and attitude categories. Content validity of the tools was ensured through expert evaluations, and reliability was established with a satisfactory test-retest value of r = 0.7. A pilot study involving six mothers validated the feasibility and effectiveness of the tools and the teaching program. Data collection, carried out through pre and post-tests, involved weekly surveys, and the analysis included descriptive and inferential statistics such as frequency, percentage, mean, standard deviation, chi-square test, and paired 't' test. Ethical considerations were addressed by obtaining approvals, permissions, and oral consent, ensuring the protection of human rights throughout the research process.

Result:

Section – I

Finding related to Frequency and percentage distribution of samples on selected demographic variables

Table I: Frequency and percentage distribution of samples

n = 30

S.No	Demographic Variables	Frequency	Percentage (%)
1.	Age of the Mother		
	18-23years	03	10
	24-28 years	15	50
	29-33 years	12	40
2.	Religion		
	Hindu	17	56.66

https://doi-ds.org/doilink/01.2024-69451478/GIJNR

Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

	Christian Muslim Others	08 05 -	26.66 16.66 -
3.	Occupation Not employed Employed	 4 26	 13.33 86.66
4	Education Illiterate Primary education Secondary education Under graduate Post graduate	 8 9 5 5 3	 26.66 30 16.66 16.66 10
5	Source of information Television Radio Newspapers Neighbor Health center Health card	 5 8 4 5 6 2	 16.66 26.66 13.33 16.66 20 6.66

Table I- The data reveals in that among the sampled mothers, 10% were in the age group of 18-23 years, 50% in the age group of 24-28 years, and 40% in the age group of 29-33 years. In terms of religion, 56.66% were Hindu, 26.66% were Christians, and 16.66% were Muslims. Regarding occupation, 13.33% were unemployed, and 86.66% were employed. In the education category, 26.66% were illiterate, 30% completed primary education, 16.66% completed secondary education, 16.66% were undergraduates, and 10% were postgraduates. The source of information varied, with 16.66% relying on television, 26.66% on radio, 13.33% on neighbors, and 20% on health cards.

Section-II

Finding related to Distribution of Samples According to the Pre-Post Test Knowledge and attitude Scores of Mothers Regarding Immunization

Table-II: Frequency and percentage distribution of samples According to the Pre-Post Test Knowledge Scores of Mothers Regarding Immunization

(n=30)

Level of knowledge	**Pretest**		**Post test**	
	Frequency	**Percentage (%)**	**Frequency**	**Percentage (%)**
Adequate Knowledge	0	0	4	13.33%

https://doi-ds.org/doilink/01.2024-69451478/GIJNR

Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

Moderately adequate knowledge	14	46.66%	25	83.33%
Inadequate knowledge	16	53.33%	1	3.33%

Table-II presents the distribution of knowledge levels among participants in a pretest and post-test scenario. Before the intervention, 53.33% had inadequate knowledge, 46.66% had moderately adequate knowledge, and none had adequate knowledge. After the intervention, the percentage of participants with adequate knowledge increased to 13.33%, and those with moderately adequate knowledge increased to 83.33%, while inadequate knowledge decreased significantly to 3.33%. The table suggests that the intervention positively impacted participants' knowledge levels.

Table-III: Frequency and percentage Distribution of samples according to the pretest attitude scores of mothers regarding immunization

(n=30)

Level of attitude	**Pretest**		**Post test**	
	Frequency	**Percentage (%)**	**Frequency**	**Percentage (%)**
Adequate Knowledge	5	16.66%	5	16.66%
Moderately adequate knowledge	6	20%	24	80%
Inadequate knowledge	19	63.33%	1	3.33%

Table III illustrates the distribution of attitudes among 30 participants in a pretest and post-test scenario. Initially, 63.33% had inadequate attitudes, 20% had moderately adequate attitudes, and 16.66% had adequate attitudes. After the intervention, there was a notable positive shift: inadequate attitudes decreased to 3.33%, moderately adequate attitudes increased to 80%, and adequate attitudes remained the same at 16.66%. The table suggests that the intervention positively influenced participants' attitudes.

Section-III

Finding related to Comparison of the pretest and posttest knowledge and attitude score on mothers regarding immunization

To test the statistically significant difference between the mean pretest and posttest knowledge and attitude scores of the mothers regarding immunization.

https://doi-ds.org/doilink/01.2024-69451478/GIJNR

Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

The mean posttest knowledge and attitude score is higher than the mean pretest knowledge score regarding immunization among the mothers of under five children.

Table-IV Comparison of the pretest and posttest knowledge and attitude score on mothers regarding immunization

Score	Test	Mean	SD	't' Test Value
Knowledge	Pre test	11.16	3.42	7.65*
	Post test	14.2	3.37	
Attitude	Pre test	14.6	4.2	6.46*
	Post test	17.4	3.25	

* Significant

This table compares the pretest and posttest scores for knowledge and attitude among mothers regarding immunization. For knowledge, the mean score increased from 11.16 (SD=3.42) in the pretest to 14.2 in the posttest, with a significant 't' test value of 7.65 (*). Similarly, for attitude, the mean score rose from 14.6 (SD=4.2) in the pretest to 17.4 in the posttest, with a significant 't' test value of 6.46 (*). The asterisk (*) indicates statistical significance, suggesting that the changes observed in both knowledge and attitude scores are likely not due to random chance, signifying an impact of the intervention on mothers' knowledge and attitude towards immunization.

Table: V Relationship between posttest level of knowledge and attitude among under five mothers

S. No	Calculated 'r' value	Table "r" value
1.	-0.22 ^{NS}	0.381

NS- Not significant

This table examines the relationship between the posttest level of knowledge and attitude among mothers of children under five. The calculated 'r' value is -0.22, and it is labeled as "NS" (Not significant). The table "r" value is 0.381. The notation "NS" indicates that the relationship observed is not statistically significant. In other words, there is no significant correlation between the posttest level of knowledge and attitude among under-five mothers based on the given data.

https://doi-ds.org/doilink/01.2024-69451478/GIJNR

Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

Section IV

Table VI Finding related to association between the pretest knowledge scores on mothers regarding immunization and demographic variables

To identify the association between the pretest knowledge scores on immunization of mothers and the selected demographic variables.

Demographic Variable	Frequency Numbers	Knowledge level			Chi- Square
		In adequate	Moderately Adequate	Adequate	
Age of the mother					
18-23 years	30	1	2	0	
24-28 years		-	14	1	11.50*
29-33 Years		-	9	3	
Occupation					
Not Employed	30	1	2	1	7.58*
Employed		-	23	3	
Education					
Illiterate		-	8	0	
Primary education		1	5	3	
Secondary education	30	-	5	-	8.70#
Under graduate		-	4	1	
Post graduate		-	3	-	
Religion					
Hindu		1	14	2	
Muslim	30	-	7	1	0.99#
Christian		-	4	1	
Others					
Source of information					
Television		-	4	1	
Radio		-	8	-	10.07#
News paper	30	-	3	1	
Neighbor		-	3	2	
Health center		1	5	-	
Health card		-	2	-	

*** Significant at 0.05 level**
 # Not-significant at 0.05 level

https://doi-ds.org/doilink/01.2024-69451478/GIJNR

Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

Table VI examines the association between pretest knowledge scores on immunization among mothers and demographic variables, including age, occupation, education, religion, and source of information. Significant associations (* at 0.05 level) were found for age, occupation, and source of information, indicating that these factors are linked to pretest knowledge scores. Non-significant associations (# at 0.05 level) were observed in education and religion. The table highlights that the age of the mother, occupation, and source of information play significant roles in influencing mothers' pretest knowledge scores on immunization.

Table VII Finding related to association between the pretest attitude scores on mothers regarding immunization and demographic variables

To identify the association between the posttest attitude scores on immunization of mothers and the selected demographic variables. The following null hypothesis was stated

Demographic Variable	Frequency Numbers	Attitude level			Chi-Square
		In adequate	Moderately Adequate	Adequate	
Age of the mother					
18-23 years	30	1	1	1	
24-28 years		-	14	1	11.9*
29-33 Years		-	11	1	
Occupation					
Not Employed	30	1	2	2	13.03*
Employed		-	23	3	
Education					
Illiterate	30	1	6	1	
Primary education		-	9	-	7.98#
Secondary education		-	4	1	
Under graduate		-	3	2	
Post graduate		-	3	-	
Religion					
Hindu	30	1	13	3	
Muslim		-	7	1	0.99#
Christian		-	4	1	
Others		-	-	-	
Source of information					
Television	30	-	4	1	
Radio		-	6	2	
Newspaper		-	4	0	5.85#
Neighbor		-	4	1	
Health center		1	4	1	
Health card		-	2	-	

https://doi-ds.org/doilink/01.2024-69451478/GIJNR

Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

*** Significant at 0.05 level**
 # Non-significant at 0.05 level

Table VII explores the association between pretest attitude scores on immunization among mothers and demographic variables (age, occupation, education, religion, and source of information). Significant associations (* at 0.05 level) were found for age, occupation, and source of information, indicating their influence on pretest attitude scores. Non-significant associations (# at 0.05 level) were observed for education and religion. In summary, the table highlights that mothers' age, occupation, and source of information significantly impact their pretest attitude scores on immunization.

Discussion:

The research aimed to assess pretest knowledge and attitude scores on immunization among mothers of under-five children, revealing a notable lack of awareness. Following a structured teaching program, post-test scores significantly improved, indicating program effectiveness. The analysis demonstrated a positive impact on knowledge and attitude, emphasizing the program's value. Associations were found between age and occupation with knowledge and attitude scores, suggesting older age and specific occupations contributed to higher levels of understanding and positive attitudes toward immunization. However, no significant associations were observed with religion, education, or information sources. Overall, the findings underscore the success of the teaching program in enhancing maternal knowledge and attitudes on immunization, while also highlighting demographic factors that influence these outcomes.

Implications:

This study has important implications for nursing across various domains. In nursing practice, it highlights the need for planned health education programs to educate mothers of under-five children on immunization. Nurses can play a key role in imparting knowledge and utilizing visual aids for outreach. In nursing education, there's a call for awareness programs and addressing reasons for vaccine non-acceptance, advocating for the inclusion of immunization importance in nursing curricula. Nursing administrators can disseminate research knowledge, organize seminars, and encourage community health nurses in rural areas. The study serves as a baseline for future research, suggesting potential investigations into factors influencing immunization adherence and the effectiveness of self-instructional modules.

https://doi-ds.org/doilink/01.2024-69451478/GIJNR

Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

Limitations:

The study has limitations, including potential selection bias as it relies on willing participants. The data collection span of six weeks may limit capturing long-term trends. The study focuses on mothers of under-five children who are present during data collection, possibly excluding unavailable participants. The sample size of 30 mothers is relatively small, potentially impacting the study's generalizability. These limitations should be acknowledged when interpreting the findings.

Recommendations:

The study suggests several recommendations for future research. These include conducting a comparative study between urban and rural mothers with under-five children, exploring larger sample sizes, examining different teaching methods, and delving into factors influencing non-compliance with optional vaccines among mothers. These recommendations aim to provide a more comprehensive understanding of knowledge and attitudes towards immunization, contributing valuable insights to maternal and child healthcare.

Conclusion:

In conclusion, the research demonstrates the positive impact of a structured teaching program on the knowledge and attitudes of mothers with under-five children regarding immunization in the rural setting of Antri, near Gwalior. The study reveals a significant improvement in both knowledge and attitude scores following the intervention, emphasizing the effectiveness of targeted educational initiatives. Demographic factors, specifically age and occupation, were found to influence outcomes, highlighting the need for tailored interventions in maternal and child healthcare initiatives. While the research provides valuable insights, acknowledging its limitations, it underscores the urgency of addressing awareness gaps to enhance immunization coverage and reduce childhood morbidity and mortality. The study's implications extend to nursing practice, education, and administration, offering a foundation for future research and emphasizing the importance of ongoing efforts to promote child health through informed maternal care.

https://doi-ds.org/doilink/01.2024-69451478/GIJNR

Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)
ISSN: 2583-9713 www.gloriousjournal.com

References:

1. Hest, A., et al. (2000). Efficacy of 7-valent Pneumococcal Vaccine among Children of Age Group 3-36 months in the U.S.A. (pp. 7-8).
2. Subramanian, B. K., & Satvasekhar, P. (2005). Child Immunization Coverage in Andhra Pradesh. Health Action, 12-13.
3. Coles, C. L., et al. (2011). Pneumococcal Nasopharyngeal Colonization in Young South Indian Infants. Pediatrics Infectious Journal, 2011, 289-295.
4. Thomas, C. (2010). Initiative of Vaccine Research: Immunization, Vaccines, and Biologicals. WHO, Avenue Appia, Switzerland, 8-10.
5. Ercan, T. E., et al. (2011). To Evaluate the Effectiveness of Pneumococcal Conjugate Vaccine in Healthy Turkish Children. Turkey, 6-7.
6. 6. Cutts, F. T., et al. (2005). Efficacy of Nine-valent PCV against Pneumonia and Invasive Pneumococcal Diseases in Gambia. Gambia.
7. Frenck, R. Jr. (2011). Immunogenicity and Safety of 13-valent Pneumococcal Conjugate Vaccine among Under-five Children. U.S.A, 12-13.
8. Global Health Observatory, WHO. (2011). Causes of Child Mortality for the Year. 4-5.
9. Johnson, H. L., et al. (2010). Systematic Evaluation of Serotypes Causing Invasive Pneumococcal Diseases among Children Under Five: The Pneumococcal Global Serotype Project. PLoS Medicine.
10. UNICEF India. (2007). Progress for Children Report Dec 2007: A Statistical Review. Volume 6, 6-7.
11. Neissen, L., ten Hove, A., Hilderink, H., Mulholland, K., Zzati, M. (2009). Comparative Impact Assessment of Child Pneumonia Interventions. Bulletin of the WHO, 87(6), 472-480.
12. Merk and Co. (2008). WHO. CDC Advisory Panel Votes to Update Pneumococcal Vaccination Recommendations. Fierce Biotech, USA, 23-24.