



“A Study to evaluate the effectiveness of structured teaching programme knowledge regarding vaccination to prevent measles, mumps and rubella infection among parents of under five children’s in selected area of Terdal”.

Mr Brahmanand Shivapur , Mr Sangamesh Baichabal

Assistant Professor, Danigound College of Nursing, Terdal

Assistant Professor, BES Bagalkot college of Nursing , Bagalkot

Brahmanandshivapur1@gmail.com, sagar0000baichabal@gmail.com

Abstract

Background

Children’s are easily they get infection by so many ways, but parents are not having adequate knowledge of disease and vaccination impotents, for that we need mass vaccination programmes have played an important role in disease elimination, control strategies. Vaccination programmes has multiple challenges including understanding of the need, fear of adverse effects, for that the community need adequate motivation from the government etc¹. The study was conducted to assess the knowledge of parents of under five children’s in selected area of terdal.

Methods: : A descriptive survey design was used for the present study. The sample consisted of 90 mothers selected by purposive sampling technique. Tools used were baseline Performa and structured knowledge questionnaires.

Results: The chi-square test revealed a significant association between participants’ education level and their knowledge regarding MMR vaccination ($\chi^2 = 7.86$, $p = 0.020$), indicating that education strongly influences awareness and understanding. However, other socio-demographic variables such as gender, age, number of children, religion, employment status, and family income showed no significant association ($p > 0.05$) with knowledge levels.

Conclusion

The study demonstrated that the structured teaching program was highly effective in improving parents’ knowledge regarding vaccination to prevent measles, mumps, and rubella among under-five children in the selected area of Terdal. A significant increase in post-test knowledge scores confirmed the program’s success.

The findings emphasize that structured education plays a vital role in enhancing awareness, promoting vaccination practices, and reducing the risk of vaccine-preventable diseases among children.

Keywords: Under five children's, Parents, Measles, Mumps and Rubella, Teaching program and Effectiveness

MATERIALS AND METHODS:

Research approach and design: Quantitative experimental research approach was used with pre-experimental one group pre-test one group post-test without control group research design. The intervention was administered to the selected group,

Table 1: Diagrammatic representation of Research design

Group	Pre-test	Intervention	Post-test
I	O ₁	X	O ₂

O₁= pretest, O₂= posttest, X= Intervention

Variables:

Dependent Variable: The structured teaching program knowledge regarding vaccination to prevent measles, mumps and rubella infection among parents of under five children's.

Independent Variable: The structured teaching program

Socio-demographic Variables: Age, gender, religion, educational status, Number of children's, Employment status, Family income,

Setting of study: The study was conducted in selected area of Terdal

Population:

Target population:

The target population of the present study are the parents of under five children's .

Accessible population:

The accessible population of the present study are the parents of under five children's.

Sampling technique: In the present study the sample was selected by convenient sampling technique. The researcher conveniently structured teaching program knowledge regarding vaccination to prevent measles, mumps and rubella infection among parents of under five children's in Terdal.

Sample: Sample of present study were 90 parents of under five children's in Terdal.

Sample estimation: The sample size for present study comprises is 90 parents of under five children's in Terdal.

The sample size was calculated by using Cochran's formula. data for calculating sample size was used from the findings of the pilot study outcomes.

Sample size = $Z \text{ value}^2 * SD^2 / d^2$.

Where, Z- is the critical value at 5% level of significant, SD-is the Standard deviation, d-is the margin of error.

Process of data collection: 90 participants were divided into 2 groups (1 and 2) each group had 45 participants, on 5/Jul/2023 pre-test was conducted. The intervention, structured teaching program was administered from 07/Jul/2023 to 08/Jul/2023 for 2 days. Post test was conducted on 09/Jul/2023 for all three groups.

Sample selection criteria:

Inclusion Criteria:

The present study includes the parents of under five children's who are

- Available at the time of data collection.
- Willing to participate in the study.
- Presently not attending any structured teaching program of vaccination.

Exclusion criteria:

The present study excludes the parents of under five children's who are

- Sick at the time of data collection
- Not able to attend the intervention, or expected to be on leave at time of intervention.

Description of Tool:

The instrument consisted of two Sections

- Section A consists of items to assess socio demographic data.
- Section B consists MCQs to assess the level of among parents of under five children's.

Permission: Ethical clearance certificate was obtained from institutional ethical committee of SDM'TRUST DANIGOND COLLEGE OF NURSING , TERADAL.Dated 3-07-2023(SDM'T-IEC-2023-24-11).

Statistical analysis: Univariate analysis was conducted with descriptive statistical measure; frequency and percentage distribution, mean, median and standard deviation. The effectiveness of intervention was determined by paired t test. The association between socio demographic factors and level of stress was determined by Chi square test.

Results: Results of the present study is categorized into 4 sections as follows

Section I: Frequency and percentage distribution of Parents according to their socio-demographic Characteristics.

Section II: Frequency and percentage of pre-test and post-test level of knowledge

Section III : Comparison of pre test and post test perceived stress scores.

Section IV: Association between teaching program knowledge regarding vaccination to prevent M,M,R infection among parents of under five children's with their selected socio-demographic variable.

Section I: Frequency and percentage distribution of Parents according to their socio-demographic Characteristics.

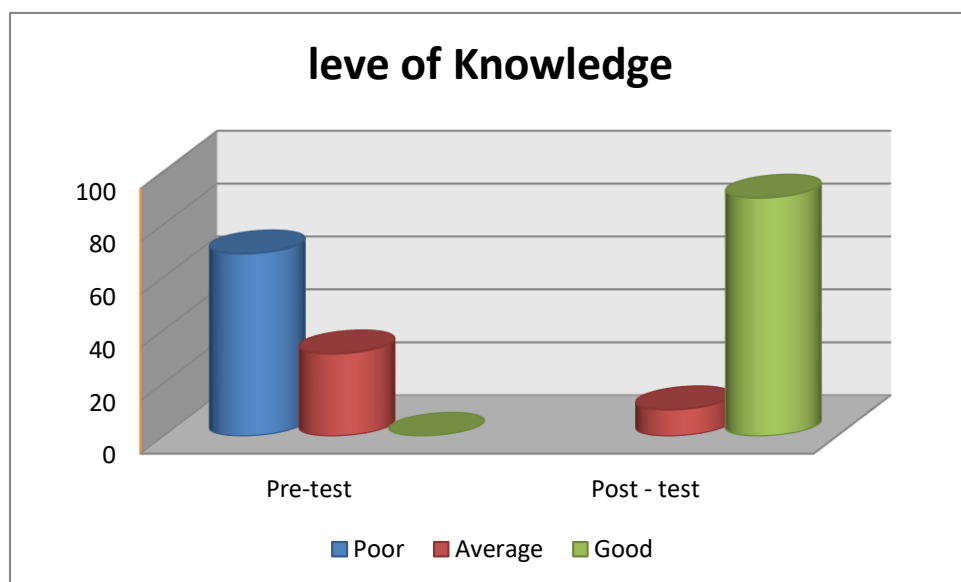
N-90

S L No	Demographic variables	Categories	f	%
1	Gender	Male	12	13.33
		Female	78	86.67
2	Age	20-25	32	35.56
		26-30	39	43.33
		31-35	15	16.67
		35>	4	4.44
3	Number of children	1	47	52.22
		2-3	36	40
		3>	7	7.78
4	Religion	Hindu	51	56.67
		Muslim	36	40
		Christian	3	3.3
5	Education level	Primary School	35	38.89
		Secondary School	43	47.78
		Tertiary Education	12	13.33
6	Employment status	Self-Employed	79	87.78
		Government	11	12.22
		Unemployed	0	0
7	Family Income	5,000-10,000 Rs	17	18.89
		11,000-20,000 Rs	28	31.1
		20,000-30,000 Rs	34	37.78
		30,000 >	11	12.22
8	Have you attended any programme on vaccination	Yes	0	0
		No	90	100

Section II: Frequency and percentage of pre-test and post-test level of knowledge

SL/ No	Level of Knowledge	Score	Pre-test		Post-test	
			F	%	F	%
1	Poor	0-9	62	68.89	0	0
2	Average	10-17	28	31.1	9	10
3	Good	18-25	0	0	81	90

F=Frequency, %= Percentage



Section III : Comparison of pre test and post test perceived stress scores. N=90

Test	Mean score	SD	P-value	T Value	Interpretation
Pre test	8.17	4.40	<0.05	21.6	Significant improvement in Knowledge
Post test	20.51	3.18			

Section IV: Association between teaching programm knowledge regarding vaccination to prevent M,M,R infection among parents of under five children's with their selected socio-demographic variable.

S. No	Demographic Variables	χ^2 Value	df	p-value	Remarks
1	Gender	2.18	1	0.140	NS
2	Age	6.45	3	0.092	NS
3	Number of Children	4.33	2	0.115	NS
4	Religion	1.72	2	0.423	NS
5	Education Level	7.86	2	0.020	S
6	Employment Status	3.12	2	0.210	NS
7	Family Income	5.61	3	0.132	NS

Results

Section I: to assess knowledge regarding vaccination to prevent measles, mumps and rubella infection among parents of under five children's ,The demographic data shows that the majority of respondents were female (86.67%), indicating that women predominantly participated in the study. Most participants were within the age group of 26–30 years (43.33%), suggesting they are in their prime working or childbearing age. More than half of the respondents had one child (52.22%), and the majority followed the Hindu religion (56.67%),

reflecting the local population's demographic composition. Regarding education, 47.78% had completed secondary school, showing a moderate educational background. A large proportion, 87.78%, were self-employed, indicating engagement in small-scale or informal occupations. The majority of participants had a monthly family income between ₹20,000–₹30,000 (37.78%), suggesting a middle-income group. Notably, none of the respondents had attended any vaccination awareness programme, highlighting a significant gap in public health education and emphasizing the need for community-based awareness initiatives.

Section II: Frequency and percentage of pre-test and post-test level of knowledge of the data reveals a marked improvement in participants' knowledge levels after the educational intervention. During the pre-test, the majority (68.89%) of respondents had poor knowledge, and 31.1% demonstrated only an average level. None showed good knowledge initially. However, in the post-test, there was a significant shift, with 90% of participants achieving a good level of knowledge, and only 10% remaining at the average level. No participants remained in the poor category. This clearly indicates that the structured teaching programme was highly effective in enhancing the participants' understanding and awareness of the subject.

Section III : Comparison of pre test and post test perceived stress scores was shown a significant increase in the mean knowledge score from 8.17 in the pre-test to 20.51 in the post-test. The calculated t-value of 21.6 at $p < 0.05$ indicates a statistically significant improvement in knowledge following the educational intervention. This demonstrates that the teaching programme was highly effective in enhancing participants' understanding of the subject, leading to a substantial positive change in their post-test performance compared to the pre-test.

Section IV: Association between teaching programme knowledge regarding vaccination to prevent M,M,R infection among parents of under five children's with their selected socio-demographic variable in the chi-square test results show that there is a significant association between the education level of participants and their level of knowledge ($\chi^2 = 7.86, p = 0.020$). This indicates that educational qualification plays an important role in influencing awareness and understanding. For all other demographic variables—gender, age, number of children, religion, employment status, and family income—the results were not significant ($p > 0.05$). Hence, these factors did not show any meaningful association with knowledge levels among the participants in this study.

Discussion :

An evaluative approach and quasi experimental one group pretest and posttest research design was used with purposive sampling select the 50 mothers of under five children in rural area. The study revealed that in the pretest, 60% of mothers had inadequate knowledge and 40% had moderate knowledge about measles and its vaccination, with none showing adequate knowledge. In the post-test, 64% had adequate and 36% had moderate knowledge, with no one showing inadequate knowledge. The mean knowledge increased by 30.53%, and the paired 't' value of 34.7 ($P < 0.05$) indicated significant improvement. Significant associations were found between knowledge level and age ($\chi^2 = 6.69^*$), area of living ($\chi^2 = 5.33^*$), and family income ($\chi^2 = 9.848^*$)¹.

A descriptive study conducted on Seroprevalence of measles, antibodies among 5-10 years old children in India, the results shows that the Protective seroprevalence of MMR antibodies was 40.8, 75.5 and 86.2 percent, respectively. The geometric mean titers of MMR IgG antibodies in the study children were 11.3, 50.6 and 54.3 international units (IU)/ ml, respectively. The proportion of seroprotected children for measles was significantly higher among those who had received two or more doses (46.4%) of measles vaccine compared to those who had received single dose (35.6%) ($P < 0.001$). About 16 per cent of children had received single dose of MMR vaccine. Among these, 71.4 and 100 per cent were seroprotected against seroprevalence².

Pre experimental one group pre-test post-test design. Total 60 parents were taken who have children (1-12 years); purposive sampling technique was used to select the parents. A structured knowledge questionnaire was prepared by the investigator. Informed consent was taken from each participant prior to data collection and Descriptive and inferential statistics i.e., frequency, percentage, paired' test, chi-square test was used for analysis. Pre-test knowledge score of parents regarding rubella vaccine revealed that 53.33% parents had inadequate knowledge, and 46.66% parents had moderately knowledge. After structured teaching programme, the posttest knowledge scores of parents shows that 13.33% parents had adequate knowledge, 83.33% parents had moderately adequate knowledge and 3.33% have inadequate knowledge³.

The study was conducted using quasi - experimental design with single group pre test and post test design. The study was conducted on 60 parents under - five children's in selected rural area (Gajaladine & Chitrakodahalli) at Kolar, using convenient sampling technique. The pre and post test scores revealed that the post test knowledge score (20.4) is apparently higher than overall mean of pre test scores (7.5). The mean difference is (12.9). The paired 't' value at df (59) obtained is 35.40 significant at 0.05 level. Therefore the null hypothesis is rejected and research hypothesis is accepted. Therefore the teaching programme is effective. Interpretation and Conclusion: The study findings revealed that people had inadequate knowledge on general information about measles & rubella infection, Causes & clinical manifestation of measles & rubella infection, Management & Prevention of measles & rubella infection⁴.

Conclusion

The study demonstrated that the structured teaching program was highly effective in improving parents' knowledge regarding vaccination to prevent measles, mumps, and rubella among under-five children in the selected area of Terdal. A significant increase in post-test knowledge scores confirmed the program's success. The findings emphasize that structured education plays a vital role in enhancing awareness, promoting vaccination practices, and reducing the risk of vaccine-preventable diseases among children.

Recommendations: Based on the findings, the following recommendations are proposed for future research.

1. Conduct regular health education programs for parents.
2. Include vaccination awareness in community health initiatives.
3. Strengthen outreach through primary health centers.
4. Use visual aids and digital tools for better understanding.
5. Train health workers to counsel parents effectively.
6. Encourage collaboration between schools and health departments for vaccination drives.

Reference

1. Pai R R, Paulose S, Vivek S, Raghu K. Knowledge, attitude and practice regarding measles rubella vaccine among school children in Kerala. Int J Acad Med Pharm. 2022;4(5):152-6. doi:10.47009/jamp.2022.4.5.33.
2. Hussein SZ, Mardia N, Amirah M, Hashim R, Abu Bakar SH. Knowledge and practice of parents towards measles, mumps and rubella vaccination. Malays J Med Sci. 2022 Jun 28;29(3):90-98. doi:10.21315/mjms2022.29.3.9.

3. Singh S, et al. Knowledge, attitudes and practices about measles among mothers of children in India. Int J Infect Dis. 2008;12(6):598-603. doi:10.1016/S1201-9712(08)01592-0
4. [Author(s) unavailable]. An evaluative and quasi-experimental one-group pre-test and post-test study of 50 mothers of under-five children in rural Terdal on structured teaching regarding measles vaccination.
5. Gupta M, Tripathy JP, Verma M, Singh MP, Kaur R, Ratho RK, Kumar R. Seroprevalence of measles, mumps & rubella antibodies among 5-10 years old children in north India. Indian J Med Res. 2019 Mar;149(3):396-403. doi:10.4103/ijmr.IJMR_1453_17.
6. [Author(s) unavailable]. Pre-experimental one-group pre-test post-test design study on 60 parents of children (1-12 years): structured knowledge questionnaire about rubella vaccination; results show improvement in knowledge levels.
7. Dubey R, Sharma D. A study to assess the effectiveness of planned teaching on knowledge regarding measles among the general population of village Bhopal city (M.P.). Int J Adv Res Community Health Nurs. [Year unknown];6(1):[pages()].

