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Nursing Science	**Research Article……!!!**

A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING DIARRHEA AMONG THE MOTHERS OF UNDER-FIVE CHILDREN

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ABSTRACT

Diarrhea remains one of the leading causes of morbidity and mortality among children under five years of age in India. Mothers' knowledge and practices play a pivotal role in its prevention and management. **Objective:** To evaluate the effectiveness of a structured teaching programme on knowledge regarding diarrhea among mothers of under-five children. **Methods:** A quantitative pre-experimental, one-group pre-test post-test design was conducted at Katwara village with 60 mothers of under-five children using non-probability purposive sampling. A self-structured knowledge questionnaire was administered before and after the teaching intervention. Data were analyzed using descriptive statistics, paired t-test, and chi-square test. **Results:** The mean pre-test knowledge score was 10.35 (SD = 2.45), and the mean post-test score was 18.62 (SD = 2.12). The mean gain was 8.27, which was statistically highly significant ($t = 15.73$, $p < 0.0001$). A significant association was found between pre-test knowledge scores and educational qualification ($p = 0.009$) and monthly income ($p = 0.044$). **Conclusion:** The structured teaching programme significantly improved maternal knowledge regarding diarrhea management in under-five children. Educational level and income were significantly associated with baseline knowledge.

Introduction

Diarrhea is a preventable yet prevalent public health issue, especially among children under five in developing countries. According to WHO, diarrhea accounts for approximately 8% of all deaths among under-five children globally. In India, low maternal awareness and improper hygiene and feeding practices contribute significantly to diarrhea-related morbidity and mortality. Mothers are the primary caregivers, and their awareness and management skills play a critical role in reducing the burden of diarrheal diseases. This study was undertaken to assess whether a structured teaching programme could enhance their knowledge and empower them to take effective action.

Material and method

This study adopted a **pre-experimental one-group pre-test post-test research design** and followed a quantitative evaluative research approach. It was conducted in Katwara village, located in the Dahod district. The target population comprised mothers of under-five children. A total of 60 mothers were selected using a non-probability purposive sampling technique. Inclusion criteria included mothers of under-five children who were either present at home during the data collection period or who visited the Anganwadi and expressed willingness to participate. Mothers who were unwilling to participate, were unwell, or belonged to a medical background were excluded from the study. Tool used for data collection was a self-structured questionnaire designed to assess knowledge on aspects of diarrhea, causes, symptoms, prevention, management. Ethical clearance was obtained prior to study. A pre-test was conducted using questionnaire, followed by the administration of the structured teaching programme. A post-test was then conducted after one week to evaluate the effectiveness of the intervention. Data analyzed by descriptive statistics to summarize demographics, a paired t-test to compare pre- and post-test knowledge scores, and the chi-square test to examine the association between pre-test knowledge scores and selected demographic variables.

Data Collection Procedure:
- Ethical approval obtained.
- Pre-test conducted using the questionnaire.
- Structured teaching programme delivered.
- Post-test administered after one week.

Data Analysis:
- Descriptive statistics for data.
- Paired t-test for knowledge score comparison.
- Chi-square test for association with demographic variables.

Ethical Considerations
- Approval obtained from institutional ethics committee.
- Informed consent taken.
- Confidentiality maintained.

Result:

Table 1: Frequency and Percentage Distribution of Demographic Variables of Mothers of Under-Five Children (N = 60)

Demographic Variable	Category	Frequency (f)	Percentage (%)
Age (in years)	Below 20	5	8.33%
	21–25	15	25.00%
	26–30	24	40.00%
	Above 30	16	26.67%
Educational Qualification	No formal education	8	13.33%
	Primary education	14	23.33%
	Secondary education	21	35.00%
	Graduate and above	17	28.34%
Occupation	Housewife	36	60.00%
	Laborer	15	25.00%
	Employed (Govt/Private)	9	15.00%
Type of Family	Nuclear	39	65.00%
	Joint	21	35.00%
Monthly Family Income	Less than ₹5,000	12	20.00%
	₹5,001 – ₹10,000	24	40.00%
	₹10,001 – ₹15,000	14	23.33%
	Above ₹15,000	10	16.67%
Number of Under-Five Children	One child	42	70.00%
	Two children	16	26.67%
	More than two	2	3.33%

Description of Demographic Characteristics

1. **Age:**

The majority of participants (40%) were in the age group of 26–30 years, followed by 26.67% who were above 30 years. The least number (8.33%) were below 20 years of age. This indicates that most mothers were in their late twenties or early thirties, a common reproductive age.

2. **Educational Qualification:**

35% of mothers had completed secondary education, and 28.34% were graduates and above, showing that most of the participants had at least a moderate educational background. However, 13.33% had no formal education, indicating the need for basic health education among this group.

3. **Occupation:**

A majority (60%) were housewives, which may positively influence their availability and role in child care. 25% were laborers, and 15% were employed either in government or private jobs.

4. **Type of Family:**

Most participants (65%) lived in nuclear families, while 35% lived in joint families. This could influence access to support systems and health-related decision-making in the home.

5. **Monthly Income:**

40% of the mothers had a family income between ▯5,001–▯10,000, indicating that many belonged to a low-income group. Only 16.67% had income above ▯15,000, suggesting a potential socioeconomic barrier to healthcare access and awareness.

6. **Number of Under-Five Children:** A large proportion (70%) had one under-five child, while only 3.33% had more than two, which may have implications on caregiving stress and attention to child health.

Section II: Pre-Test and Post-Test Knowledge Scores

Knowledge Score Comparison

A structured knowledge questionnaire was administered to assess the **pre-test** knowledge before the teaching programme and the **post-test** knowledge one week after the intervention. The collected data was analyzed using **paired t-test** to determine the effectiveness of the teaching intervention.

Table 2: Comparison of Pre-Test and Post-Test Knowledge Scores Regarding Diarrhea Among Mothers (N = 60)

Test	Mean (M)	Standard Deviation (SD)	Mean Difference	t-value	p-value	Significance
Pre-Test	10.35	2.45				
Post-Test	18.62	2.12	8.27	15.73	$p < 0.0001$	**Highly Significant**

Interpretation:

- The mean pre-test knowledge score was 10.35, indicating moderate to low awareness about diarrhea, its causes, symptoms, and management.
- The mean post-test knowledge score increased to 18.62, showing a significant improvement in knowledge after the structured teaching programme.
- The mean gain in knowledge was 8.27 points.
- The calculated t-value (15.73) was greater than the critical value at 0.05 level, and the p-value (< 0.0001) indicates that the difference is statistically highly significant

Conclusion:

The analysis clearly shows that the structured teaching programme was effective in enhancing the mothers' knowledge regarding diarrhea management in under-five children. Thus, the null hypothesis (H_0) is rejected, and the research hypothesis (H_1) is accepted.

Table 3: Association Between Pre-Test Knowledge Scores and Selected Demographic Variables (N = 60)

Demographic Variable	Df	Chi-square (χ^2)	p-value	Significance
Age	3	5.32	0.070	Not significant
Educational Qualification	3	11.48	0.009	**Significant**
Occupation	2	3.27	0.195	Not significant
Type of Family	1	2.68	0.102	Not significant
Monthly Family Income	3	6.22	0.044	**Significant**
Number of Children (U5)	2	1.95	0.378	Not significant

Significance level set at p < 0.05

This table presents the Chi-square analysis used to assess the association between mothers' pre-test knowledge scores and their demographic characteristics.

- Educational Qualification was found to have a statistically significant association (p = 0.009) with pre-test knowledge. Mothers with higher educational backgrounds showed better awareness regarding diarrhea.
- Monthly Family Income also showed a significant association (p = 0.044), suggesting that socioeconomic status influences knowledge levels.
- Other variables, such as age, occupation, type of family, and number of under-five children, did not show a statistically significant relationship with knowledge scores (p > 0.05).

The findings support hypothesis H_2, which proposed a significant association between knowledge and selected demographic variables. Educational level and income are critical factors in determining the baseline awareness of diarrhea management among mothers.

Discussion

The present study aimed to assess the effectiveness of a structured teaching programme in improving knowledge regarding diarrhea among mothers of under-five children in a rural Indian setting. The findings clearly demonstrate that the intervention was successful in enhancing maternal knowledge, as evidenced by a statistically significant increase in post-test scores compared to pre-test scores (mean difference = 8.27, t = 15.73, p < 0.0001).

Diarrhea continues to be a leading cause of morbidity and mortality among children under five, particularly in developing countries like India. Poor sanitation, inadequate hygiene, lack of access to clean drinking water, and limited awareness about management practices such as oral rehydration therapy (ORT) contribute to its prevalence. In this context, the significant improvement in knowledge observed in this study supports the value of structured educational interventions in community settings. Similar findings have been reported in other studies conducted in comparable rural populations, where health education has led to improved maternal practices and decreased incidence of diarrheal diseases.

The findings also revealed a significant association between the mothers' educational qualification and their baseline knowledge scores. Mothers with higher education levels exhibited better pre-test knowledge, which aligns with the understanding that education improves health literacy. Additionally, monthly family income was found to be significantly associated with knowledge levels, suggesting that socio-economic status plays an important role in health information access and health-seeking behavior.

Interestingly, other demographic variables such as age, occupation, type of family, and number of under-five children did not show statistically significant associations with knowledge scores. This may imply that regardless of these factors, well-structured and contextually relevant health education has the potential to positively influence maternal knowledge. However, qualitative studies may further explore these variables to understand their indirect impact on health behaviors.

This study also highlights the role of Anganwadi centers and frontline health workers in facilitating community-level health promotion. Since these centers are widely accessed by mothers and children in rural areas, integrating structured teaching sessions on common childhood illnesses into routine services could serve as an effective strategy to reduce disease burden.

Despite the encouraging results, the study had limitations. The use of a one-group pre-test post-test design without a control group limits the ability to attribute improvements solely to the intervention, as external factors could have influenced the results. Additionally, the sample size was relatively small and restricted to a

single village, which limits generalizability. Follow-up studies with larger, randomized samples and long-term assessment are recommended to evaluate knowledge retention and actual changes in health practices.

In conclusion, the results underscore the critical role of maternal education in child health promotion. Structured teaching programmes, when appropriately designed and implemented, can be a cost-effective and scalable solution to empower mothers with life-saving knowledge and ultimately reduce preventable child deaths due to diarrhea.

Conclusion

The structured teaching programme significantly improved mothers' knowledge regarding diarrhea management. Community-based health education should be strengthened, especially among less educated and low-income mothers, to reduce child morbidity and mortality.

Recommendations

- Incorporate such programmes in Anganwadi and community health initiatives.
- Extend study to larger samples across different regions.
- Longitudinal follow-up to assess knowledge retention and practice change.

Conflict of interest: There is no conflict of interest to declare.

References:

1. World Health Organization. Diarrhoeal disease [Internet]. Geneva: WHO; 2017 [cited 2025 Jun 20]. Available from: https://www.who.int/news-room/fact-sheets/detail/diarrhoeal-disease
2. UNICEF. Diarrhoea: Why children are still dying and what can be done. New York: United Nations Children's Fund; 2009.
3. Khanal S, Rai SK, Bhatta DR, Deb M. Childhood diarrhoea: A study of the knowledge, attitude and practice among mothers of under-five children in rural Nepal. J Nepal Health Res Counc. 2020;18(3):385–9.
4. Patil S, Kanungo S, Dutta P. Impact of health education intervention on knowledge and practices regarding diarrhoea among mothers of under-five children. Indian J Public Health. 2021;65(2):144–8.
5. Kumar D, Goel NK, Mittal PC, Misra P. Influence of infant-feeding practices on nutritional status of under-five children. Indian J Pediatr. 2006;73(5):417–21.
6. Ghosh S, Shah D. Nutritional problems in urban slum children. Indian Pediatr. 2004;41(7):682–96.
7. National Family Health Survey (NFHS-5), India, 2019-21: State Fact Sheet Gujarat. Mumbai: IIPS; 2021.
8. Bhandari N, Mazumder S, Taneja S, Dube B, Agarwal RC, Mahalanabis D, et al. An educational intervention to promote appropriate complementary feeding practices and physical growth in infants and young children in rural Haryana, India. J Nutr. 2004;134(9):2342–8.
9. Ministry of Health and Family Welfare. Operational Guidelines on Diarrhoea Management. New Delhi: Government of India; 2016.
10. Debnath A, Bhattacharya M. Effect of educational program on knowledge regarding home management of diarrhoea among mothers of under-five children. Int J Community Med Public Health. 2017;4(9):3381–5.