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"A COMPARATIVE STUDY TO EVALUATE THE EFFECTIVENESS AWARENESS PROGRAMME VERSUS SELF-INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING HAND-FOOT-MOUTH-DISEASE (HFMD) AMONG MOTHERS OF UNDER-FIVE CHILDREN IN SELECTED URBAN AREA"

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Abstract*:*

I. Introduction Hand, foot and mouth disease (HFMD) is a common, highly contagious viral illness affecting predominantly children under five years of age, with frequent outbreaks reported across Asian countries. Mothers play a key role in early recognition, prevention, and home management of HFMD; therefore, improving their knowledge is essential to reduce disease transmission and complications. This study focuses on strengthening mother's knowledge through structured educational strategies.

Objectives: 1. To assess the knowledge regarding Hand-Foot-Mouth-Disease among mothers of under children in selected urban areas in both groups at baseline.**2.** To evaluate the effectiveness of an awareness programme on knowledge regarding Hand-Foot-Mouth-Disease among mothers of under five children in selected urban areas.**3.** To evaluate the effectiveness of self-instructional module on knowledge regarding Hand-Foot-Mouth-Disease among mothers of under five children in selected urban areas.**4.** To compare the knowledge score between awareness programme group and self-instructional module group regarding Hand-Foot-Mouth-Disease among mothers of under five children in selected urban areas. **5.**To find association of study findings with selected demographic variables.

Methodology: A quantitative approach with a two-arm parallel comparative research design was adopted. The study was conducted among mothers of under-five children residing in selected urban areas. Participants were divided into two groups: Group I received an awareness programme, and Group II received a self-instructional module knowledge regarding HFMD was assessed using a self-structured questionnaire before and after the interventions. Data were analyzed using descriptive and inferential statistics to evaluate within-group and between-group differences.

Results: The analysis showed a marked improvement in knowledge scores in both groups following the interventions. In the awareness programme group (n = 30), the mean pre-test knowledge score was 11.2 ± 3.1, which increased to 21.6 ± 2.8 in the post-test, demonstrating a statistically significant improvement ($p < 0.001$). In the self-instructional module group (n = 30), the mean pre-test score of 10.9 ± 3.4 improved to 18.9 ± 3.0 in the post-test, which was also statistically significant ($p < 0.001$). Intergroup comparison of post-test scores revealed that mothers who received the awareness programme had significantly higher knowledge scores than those

who received the self-instructional module ($p < 0.05$). A significant association was also observed between post-test knowledge scores and selected demographic variables such as educational status and occupation, indicating their influence on knowledge acquisition.

Key words: Awareness programme, Self-instructional module, HFMD, knowledge, Mothers of under-five children.

I. Introduction Hand, foot and mouth disease (HFMD) is a common childhood illness widespread across East and Southeast Asia, primarily caused by a group of human enteroviruses belonging to the Picornaviridae family. More than 20 different enterovirus serotypes are known to cause HFMD, with the most frequently identified pathogens being Enterovirus A71 (EV-A71), Coxsackievirus A16 (CV-A16), and Coxsackievirus A6 (CV-A6). The disease is generally mild and self-limiting, presenting with clinical symptoms such as fever exceeding 38°C, vesicular rashes on the hands, feet, tongue, or buttocks, sore throat, and painful ulcers located at the front of the mouth. A related condition, herpangina (HA), which is also caused by the same group of enteroviruses, manifests differently—characterized by blisters on the roof of the mouth and at the back of the throat, without the appearance of skin rashes. Studies have shown that there are no notable differences between HFMD and HA cases in terms of patient age, gender, seasonal patterns, or viral genetic diversity. However, among all the causative viruses, EV-A71 has been particularly associated with more severe complications, including life-threatening conditions such as brainstem encephalitis and pulmonary edema. Several countries, including Singapore, Malaysia, Vietnam, Cambodia, Taiwan, and China, have experienced fatal HFMD outbreaks, resulting in significant loss of life.[1]

II. OBJECTIVES

1. To assess the knowledge regarding Hand-Foot-Mouth-Disease among mothers of under children in selected urban areas in both groups at baseline.
2. To evaluate the effectiveness of an awareness programme on knowledge regarding Hand-Foot-Mouth-Disease among mothers of under five children in selected urban areas.
3. To evaluate the effectiveness of self-instructional module on knowledge regarding Hand-Foot-Mouth-Disease among mothers of under five children in selected urban areas.
4. To compare the knowledge score between awareness programme group and self-instructional module group regarding Hand-Foot-Mouth-Disease among mothers of under five children in selected urban areas.
5. To find association of study findings with selected demographic variables.

III. HYPOTHESIS

- **Null Hypothesis (H_0):** There is no significant difference in the knowledge score regarding HFMD among mothers of under five children in selected urban areas.

- **Alternative Hypothesis (H_1):** There is significant difference in the knowledge score regarding HFMD among mothers of under five children in selected urban areas.

IV. ASSUMPTION

Mothers of under five children may improve knowledge regarding HFMD through both awareness programme and self-instructional module.

V. RESEARCH MATERIAL AND METHODS

1.1 Research Approach

A Quantitative research approach was used to compare the effectiveness of Awareness programme versus self-instructional module on knowledge among mothers of under-five children.

1.2 Research Design

Two Parallel arm interventional study to objectively compare the effectiveness of two distinct interventions awareness programme versus self-instructional module on knowledge among mothers of under-five children.

1.3 Population and Sample

Sample was mothers of under-five children in selected urban areas.

1.4 Sample size

- In this study sample size was 60 mothers of under five children who lives in the selected urban areas.
- Formula Used

$$N = 2\,(Z_\alpha + Z_\beta)^2\; p\;(1-\bar{p})\;\bar{\quad} \;/\; d^2$$

Z_α – 1.96 for α=0.05
Z_β – 0.84 for β=0.2 i.e. 80% power

$$p = \frac{p_1 + p_2}{2}$$

p_1 = Proportion of knowledge before the intervention = 44.4 (Article reference) p_2 = Proportion of knowledge after the intervention = 80(Article reference)

$d = p_1 - p_2$

- Sample size was calculated to be 30 per group
- Sample size of 33 per group will be taken to compensate for 10% loss.

The 60 mothers of under five children were available during the period of data collection was the sample size for this study as mentioned in the inclusion criteria

1.5 Sampling Technique of The Study

Nonprobability purposive convenient sampling technique was employed to select the participants.

1.6 Sampling Criteria

Inclusion Criteria

Mothers who are able to understand Marathi or English or Hindi language.

Exclusion Criteria

Mothers of under five children who were previously participated in awareness programme regarding HFMD.

1.7

1.8 1.7 Variables

I. Demographic Variables: The demographic variables selected for this study included age, occupation, income, educational qualification, number of children, and type of family.

II. Independent Variables: The study used the independent variable is an awareness programme and self-instructional module.

III.Dependent variable: The dependent variable was knowledge among mothers of under five children

v. Research Question

Which intervention awareness program or self-instructional module is effective in improving knowledge regarding HFMD among mothers of under five children in selected urban areas?

VI.TOOL AND TECHNIQUE FOR THE STUDY

Section A: Demographic Data

It comprised 7 items seeking information on demographic data such as age, occupation, educational qualification, family type, Income per month of family, number of children.

Section B: Questionnaire to assess the knowledge regarding HFMD**.**

It consisted of a self- structured knowledge questionnaire on HFMD, which comprised 20 items

The knowledge questionnaire consisted of 20 closed-ended multiple choice questions. Each question has 4 options in which I option was correct and other options were incorrect. Every correct response was given a score of 1 and every unanswered or incorrect response was given 0. The maximum score on the knowledge questionnaire was 20.

Table no:1.1 Scoring procedure for assessing level of knowledge

Interpretation	Score
Poor knowledge	0-25%
Moderate knowledge	26-50%
Good knowledge	51-75%
Excellent knowledge	76-100%

VII.Validity and Reliability of Tool

Validity of tool

To obtain content validity of the tool, the prepared tool with synopsis, awareness programme and self-instructional module of HFMD, evaluator's response sheet and content validity certificate were submitted to 15 experts in the field of Community Medicine, Community Health Nursing, Pediatric nursing.

Reliability of Tool

The reliability was established by test-retest. The reliability coefficient of correlation for the structured knowledge questionnaire was r = 0.8980 for awareness programme and 0.8895 for self-instructional module. The higher the correlation coefficient, the more reliable the instrument.

Description of Interventions

- **Awareness Programme**

The awareness programme involved interactive teaching sessions with mothers of under-five children. It used lectures, discussions, and visual aids to explain HFMD symptoms, transmission, and prevention. This approach allowed mothers to ask questions, clarify doubts, and receive reinforcement, making the learning more effective and engaging.

- **Self-Instructional Module**

The self-instructional module was a printed booklet in Marathi containing structured information on HFMD. It included simple language, diagrams, and step-by-step guidance that mothers could read at their own pace. This method promoted self-learning and reference, but lacked the immediate interaction and clarification available in awareness sessions.

Awareness programme and self-instructional module was given at the same time for 45 minutes to group 1 and group 2.

VII. DATA ANALYSIS

Data were analyzed using descriptive and inferential statistics. Frequency, percentage, mean, and standard deviation were used for descriptive analysis, while paired t-test, Chi-square test, and Pearson's correlation were used to assess intervention effectiveness and associations with selected variables.

VIII. RESULT

26.70% of Mothers of under five children in Awareness Programme Group and 3.30% in Self Instructional Module Group were in the age group of less than 20 years, 33.33% in Awareness Programme Group and 23.30% in Self Instructional Module Group were in the age group of 20-25 years,20% of mothers of under five children in Awareness Programme Group and 26.70% in Self Instructional Module Group were in the age group of 26-30 years and 20% of mothers of under five children in Awareness Programme Group and 46.70% in Self Instructional Module Group were in the age group of 31-35 years**.**

Demographic Variables	Awareness Programme Group **(n=30)**	Self-Instructional Module Group **(n=30)**
Age(yrs)		
<20 yrs	8(26.7%)	1(3.3%)
20-25 yrs	10(33.3%)	7(23.3%)
26-30 yrs	6(20%)	8(26.7%)
31-35 yrs	6(20%)	14(46.7%)
>35 yrs	0(0%)	0(0%)
Educational Status		
No formal education	1(3.3%)	0(0%)
Primary School	3(10%)	2(6.7%)
Secondary School	13(43.3%)	6(20%)
Graduate and above	13(43.3%)	22(73.3%)
Occupation		
Homemaker	21(70%)	20(66.7%)
Daily wage worker	1(3.3%)	0(0%)
Private Job	6(20%)	6(20%)
Govt Job	1(3.3%)	4(13.3%)

Self Employed	1(3.3%)	0(0%)
Family Income (Rs)		
Below 10000 Rs	18(60%)	1(3.3%)
10000-20000 Rs	6(20%)	8(26.7%)
20001-30000 Rs	3(10%)	6(20%)
30001-40000 Rs	3(10%)	7(23.3%)
>40000 Rs	0(0%)	8(26.7%)
Type of family		
Nuclear	11(36.7%)	18(60%)
Joint	12(40%)	9(30%)
Extended	7(23.3%)	3(10%)
Number of children under five years		
One	18(60%)	28(93.3)
Two	12(40%)	2(6.7%)
More than two	0(0%)	0(0%)

Table 4.5: Comparison of mean difference in pre and posttest Knowledge Score in two groups of Mothers of under-five Children.

n=60

Group	Mean	SD	t-value	p-value
Awareness Programme Group	7.60	2.35	6.35	0.0001 NS,p>0.05
Self-Instructional Module Group	4.33	1.53		

This table shows the mean difference in pre and posttest of knowledge score among mothers of under five children of Awareness Programme Group and Self-Instructional Module Group from selected urban areas. Mean, standard deviation and mean difference values are compared and student's unpaired 't' test is applied at 5% level of significance. The tabulated value for n=30+30-2 i.e. 58 degrees of freedom was 2.00. The calculated 't' value i.e. 6.35 are much higher than the tabulated value at 5% level of significance for overall Knowledge score of mothers of under five children from selected urban areas which is statistically acceptable level of significance. Hence it is statistically interpreted that Awareness Programme on knowledge score among mothers of under five children in selected urban areas was effective than Self-instructional module. Thus, the H1 is accepted

IX. DISCUSSION

The present study compared the effectiveness of an Awareness Programme and a Self-Instructional Module (SIM) on mothers' knowledge regarding HFMD. Baseline findings revealed that most mothers in both groups had only moderate knowledge, with none achieving excellent awareness. Post-intervention results showed significant improvement in knowledge scores in both groups, confirming the effectiveness of both strategies. However, the Awareness Programme produced greater gains than the SIM, as evidenced by higher mean differences and t-values, highlighting the value of interactive teaching methods that allow clarification of doubts and reinforcement of information.

Demographic analysis showed that age, education, and family type were significantly associated with knowledge levels, while occupation, income, and number of children were not. These findings align with earlier studies reporting poor baseline awareness among mothers and emphasize the importance of structured health education.

Overall, the study demonstrates that while both interventions improved knowledge, the Awareness Programme was superior to the SIM. This underscores the importance of nurse-led, interactive awareness programmes in strengthening prevention, early detection, and management of HFMD. The findings carry important implications for nursing practice, education, and administration, and suggest that future research should explore broader community-based strategies to enhance maternal and child health outcomes

X. CONCLUSION

The present study was conducted to assess and compare the effectiveness of an awareness programme and a self-instructional module on knowledge regarding Hand, Foot and Mouth Disease (HFMD) among mothers of under-five children in selected urban areas. The findings of the study revealed that the knowledge level of mothers regarding HFMD was inadequate before the intervention in both groups. After the implementation of the awareness programme and distribution of the self-instructional module, there was a significant

improvement in the post-test knowledge scores in both groups. However, the awareness programme was found to be more effective than the self-instructional module in improving the knowledge of mothers regarding HFMD. The statistical analysis showed a significant difference between pre-test and post-test scores, indicating that both educational strategies were effective teaching methods. The study also found significant associations between post-test knowledge scores and selected demographic variables in both groups, suggesting that factors such as education and prior information influenced knowledge gain.

Overall, the study concludes that structured educational interventions, particularly awareness programmes, play a vital role in enhancing mothers' knowledge regarding HFMD, thereby contributing to better prevention and early management of the disease among under-five children.

XI.RECOMMENDATIONS

- A similar study can be conducted on a larger sample to enhance the generalizability of the findings.
- The study can be replicated in rural areas and other geographical settings.
- A longitudinal study can be conducted to assess long-term retention of knowledge and preventive practices.
- A similar study can be conducted using different sampling techniques.
- Comparative studies can be conducted using innovative teaching strategies such as digital modules or mobile-based education

XII. ETHICAL CONSIDERATIONS

- Approval from the Institutional Ethical Committee was obtained.
- Prior permission was obtained from the concerned.
- Informed written consent was obtained from all study subjects.
- Confidentiality and anonymity of the participants were strictly maintained throughout the research process.
- Participants were protected from all types of harm, ensuring their safety during both the interventions.
- Freedom to withdraw from the study at any point in time was assured to all participants

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