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### A study to assess the effectiveness of planned teaching program on knowledge regarding hand foot mouth disease among mothers of under five children in a selected Anganwadis at Mangaluru

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#### Abstract

**Background:** School children are constantly exposed to infectious diseases both at school, at home, and in the wider social environment. Children are most susceptible to bacterial and viral infections.

**Methodology:** The research design used in this study was the pre-experimental one group pre-test, post-test design. 60 under five mothers were selected by purposive sampling technique. The tools used for data collection was a structured knowledge questionnaire. As an intervention, administration of Planned Teaching Program on knowledge regarding Hand Foot Mouth Disease was given.

**Results:** The study revealed that 40% of mothers were excellent, and 60% were good in terms of gaining knowledge on hand foot mouth disease after planned teaching program. In pre test Mean score was 12, SD 4.69 and mean percentage was 44.44%. Whereas In post-test Mean was 21.67, SD was 3.33 and mean percentage was 80.26%. The 't' test ( $t_{59}=25.95$ ,  $p < 0.05$ ) revealed that planned teaching program was highly effective in gaining knowledge among under five mothers.

**Conclusion:** The findings of the study concluded that planned teaching program was highly effective in gaining knowledge among under five mothers.

**Keywords:** Effectiveness, planned teaching, under five mothers, knowledge, HFMD

#### Introduction

A nation's health measured by its children. At the early age of the child the health aspects should be taught to the parents as well as to the family member [1].

The main goal in health promotion is to help families and their children strive for a higher level of wellness and to prevent illness whenever possible. We should give importance not only to individual families but also with high risk group children by giving health education to parents, children, school teachers and other groups whose concern is for the health of the youngest segment of our population [2].

School children are constantly exposed to infectious diseases both at school, home and in the wider social environment. Children are most susceptible to bacterial and viral infections. Thus, primary school children are the targeted group for information dissemination and are being exposed to steps of proper hand washing. Hygiene education at schools and health promotion strategy proved to be the cheapest, most effective and common method of dealing with this issue. In order to nurture a healthy, intelligent and active pupil; efforts are needed to empower them so that they can be responsible for their own health. Therefore, hygiene promotion is the main focus of the policymakers to reduce the occurrence of infectious disease [3].

This viral infection is not indigenous to one area in particular but occurs worldwide. As children (particularly those younger than seven years of age) tend to be infected at a higher rate than adults, outbreaks can be seen in daycares, summer camps or within the family. Hand foot and mouth disease occurs at an equal frequency in both genders, but older epidemiological data seem to suggest that the frequency of infection is slightly higher in males [4].

Hand foot mouth disease typically a benign and common infectious disease among infants and children characterized by rapidly ulcerating vesicles in the mouth and lesions usually vesicular on the hands and feet. Hand Foot Mouth Disease is an endemic disease and it has become an important public health disease due to tendency to cause large outbreaks and deaths among children and infants [5]. The cause of the Hand Foot Mouth Disease is coxsackievirus a type of 16 in most cases but the infection can also be caused by many other strains of coxsackievirus, most commonly coxsackievirus is A16.

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Coxsackievirus is a member of the picornavirida family which includes non-enveloped single stranded RNA virus the coxsackievirus is part of a group of viruses called enteroviruses. In some cases, other types of enterovirus can cause HFMD [6].

Hand Foot Mouth Disease occurs in all areas of the world. It often occurs in small outbreaks in kindergartens and nursery schools. In Asia since 1997 large outbreaks have been occurring. It usually occurs during the spring, summer and rarely autumn. Typically it occurs in children less than five years old. Hand Foot Mouth Disease should not be confused with disease (also known as hoof-and-mouth disease), which mostly affects livestock. Now with the reports of many fatal attacks in different South East Asian countries it has become a cause of concern. Hand Foot Mouth Disease has been considered to be a benign disease of self-limiting nature for this reason it has got less attention from medical fraternity, researchers, public health department and policy makers. This is evident from the non-availability of effective vaccine. There is lack of sufficient level of awareness among the practitioners [7].

Hand foot mouth disease is a communicable disease prevalent in children. If the children are affected with Hand Foot Mouth Disease it is important to avoid close contact, wipe down all surfaces that infected where child comes into contact with disinfecting wipes and cleansers that contain greater than 60% alcohol. So proper disinfectants are very important to keep the disease from spreading to other family [6]. Hand Foot Mouth Disease is common viral illness of infants and children and is extremely uncommon in adults however still there is a possibility, most adult have strong enough immune system to defend the virus but those with immune deficiency are very susceptible.

### Objectives of the study

1. To assess the pre-test level of knowledge of mothers regarding hand foot mouth disease as measured by mean pre-test knowledge score.
2. To determine the effectiveness of the planned teaching program on hand foot mouth disease among mothers of under five children in terms of gain in mean post-test knowledge score.
3. To find out the association between mean pre-test knowledge score and selected demographic variables such as age of the mother, number of children, type of family occupation of the mother, education of the mother, income of the family, religion and any information regarding HFMD.

### Hypothesis

All hypothesis will be tested at 0.05 level of significance.

**H<sub>1</sub>:** The mean post-test knowledge score of the mothers will be significantly higher than their mean pre-test knowledge score.

**H<sub>2</sub>:** There will be a significant association between the mean pre-test knowledge score of mothers of under five children and selected demographic variables like age of the mother, number of children, occupation of the mother, education of the mother, monthly income of the family, type of family, religion and any information regarding HFMD.

### Methodology

Research Approach: Qualitative Approach

Research design: Experimental one group pretest post-test

design

Setting: selected Anganwadis Mangaluru

Sample size: 60 under five mothers

Sampling Technique; Purposive sampling.

### Tool for data collection

**Part I was the demographic proforma: consist of 8 items related to demographic data of participants**

**Part II was the structured knowledge questionnaire**

Structured knowledge questionnaire consisted of multiple choice questions that covered the meaning, causes, risk factors, transmission, signs and symptoms, complications, management and prevention of hand foot mouth disease to assess the knowledge level of under-five mothers.

### Method of data collection

Data was collected personally by the investigators with due permissions from the concerned authorities, and informed consent was obtained from the participants in a consent form. Institutional ethics committee approval was obtained. Under five mothers were the ones to whom the planned teaching program was conducted in Anganwadi setting lecture method was used to describe the content. Post test was conducted after seven days using same structured knowledge questionnaire. Collected data was analysed through descriptive and inferential statistics.

### Results

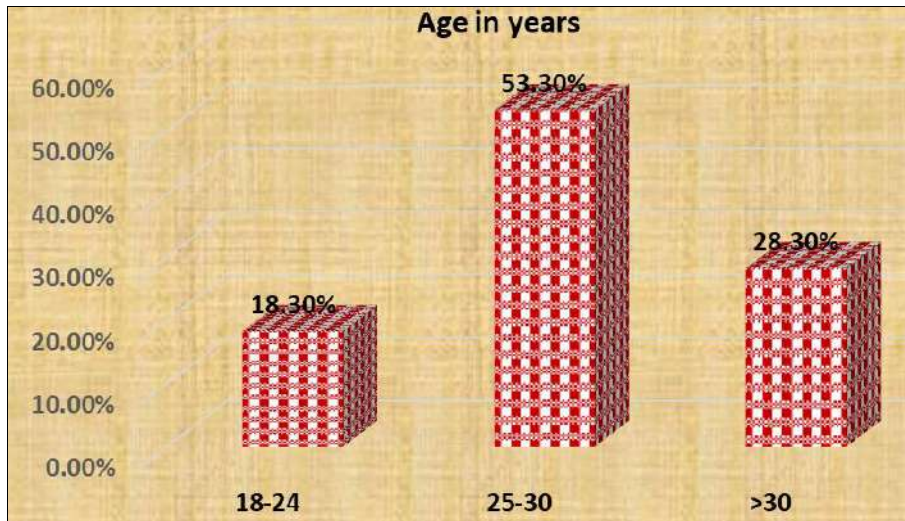
#### Section I: Description of demographic variables

This section deals with the description of sample characteristics in terms of frequency and percentage. The findings are presented using Tables and Figures.

**Table 1:** Frequency and percentage distribution of the demographic characteristics n=60

Sl. No.	Variable	Frequency	Percentage
<b>Age in years</b>			
1.	18-24 years	11	18.3
	25-30 years	32	53.3
	Above 30 years	17	28.3
<b>Number of children</b>			
2.	One	10	16.7
	Two	36	60.0
	Three	14	23.3
<b>Education</b>			
3.	Primary	10	16.7
	High school	16	26.7
	Pre University	23	38.3
	Diploma/Graduate and above	11	18.3
<b>Occupation</b>			
4.	Homemaker	33	55.0
	Unskilled workers	17	28.3
	Professionals	10	16.7
<b>Type of family</b>			
5.	Nuclear	27	45.0
	Joint	33	55.0
<b>Income per month</b>			
6.	Rs. 10001-15000	29	48.3
	Rs. 15001-20000	25	41.7
	≥ Rs. 20001	6	10.0
<b>Religion</b>			
7.	Hindu	35	58.3
	Muslim	14	23.3
	Christian	11	18.3
<b>Any information regarding HFMD</b>			
8.	Yes	20	33.3
	No	40	66.7

**Age**

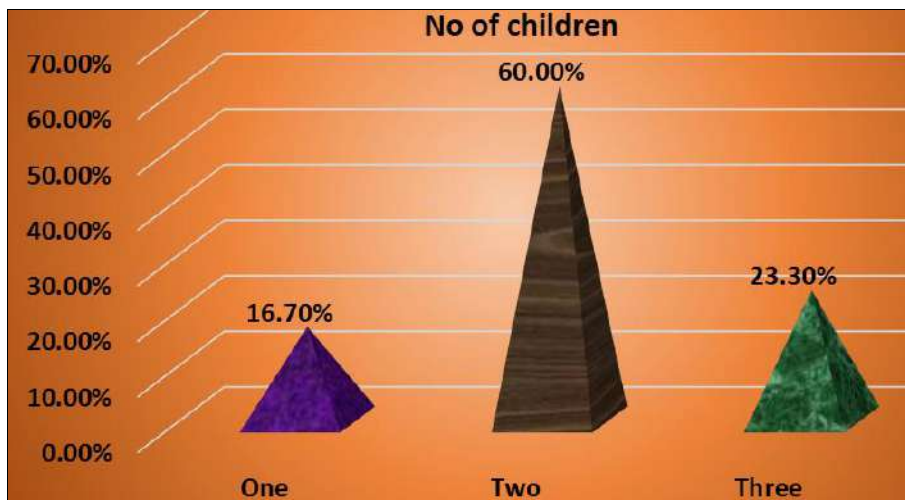


**Fig 4:** Bar diagram showing distribution of sample according to their age

Data presented in Table 1 Figure 4 shows that majority (53.3%) of the sample were in the age group of 25-30 years, (28.3%) were above 30 years and only (18.3%) of the

samples were in the age group of 18-24 years.

**No of children**

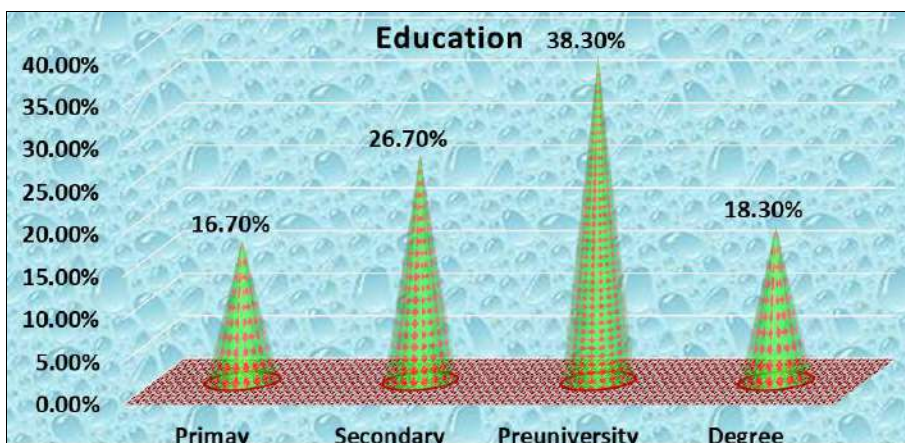


**Fig 5:** Pyramid diagram showing distribution of sample according to number of children

Data presented in Table 1 figure 5 shows that (60.0%) of mothers had two children, (23.3%) of the mothers had three

children, and (16.7%) had only one child.

**Education**



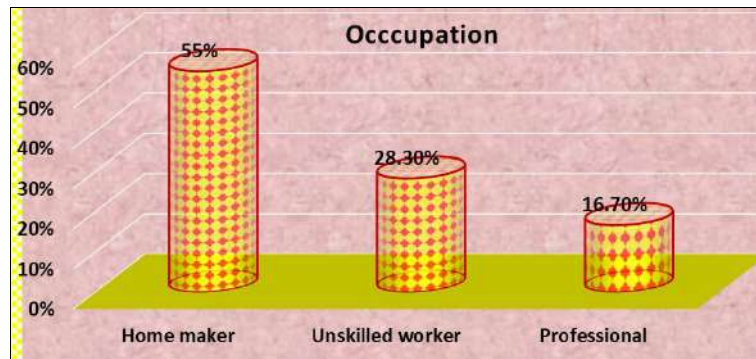
**Fig 6:** Cone diagram showing distribution of sample according to education



Data presented in Table 1, Figure 6 shows that (38.30%) of samples had pre university education.(26.70%) samples had High school education, (18.30%) were graduate or diploma

and above, and (16.70%) primary education.

**Occupation**

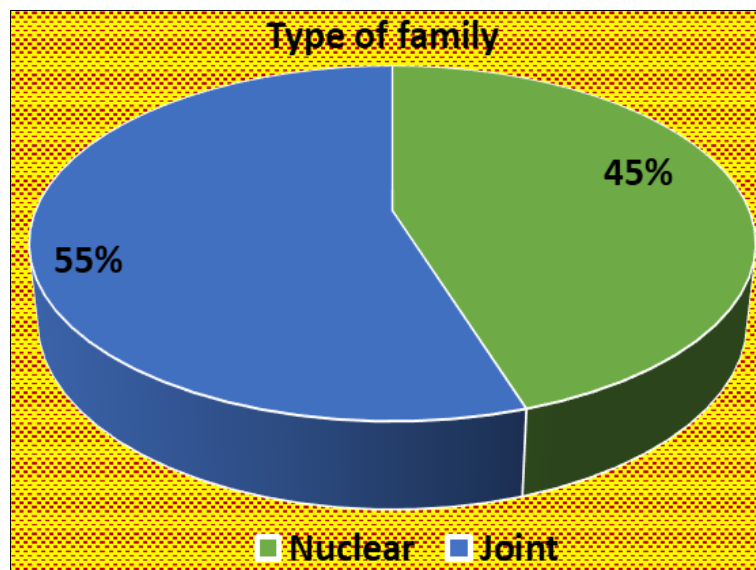


**Fig 7:** Cylindrical diagram showing distribution of sample according to occupation

It is evident from Table 1 and Figure 7 shows that (55%) samples were homemakers, (28.3%) were unskilled and

(16.70%) were professionals

**Type of family**

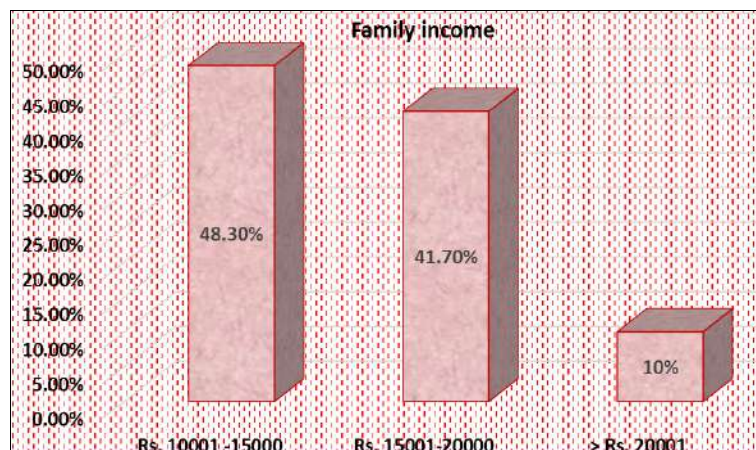


**Fig 8:** Pie diagram showing distribution of samples according to the type of family

Data presented in Table 1 and Figure 8 Majority of the samples (55%) were from joint family and (45.0%) were

from nuclear family.

**Family Income**



**Fig 9:** Box diagram showing distribution of samples according to the family income

It is evident from Table 1 and Figure 9 that 48.3% samples had an income of Rs. 10001-15000 per month, 41.7% had income of Rs. 15001-20,000 per month, and 10.0% had an income of above 20,000 per month.

With regard to religion more than half of the sample (58.3%) were Hindus, (23.3%) samples were Muslims and only (18.3%) were Christians. (Table 1)

More than half of the mothers (66.7%) had not received any

information regarding hand foot mouth disease and (33.3%) had some information about HFMD (Table 1).

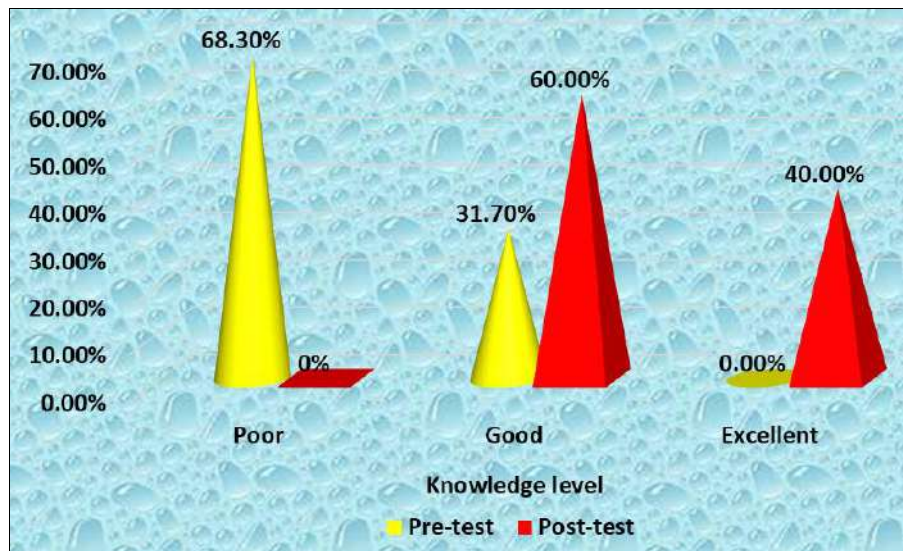
**Section II: Assessment of knowledge among mothers regarding hand foot mouth disease**

This section deals with the knowledge level of mothers before and after the teaching of planned teaching program.

**Table 2:** Frequency and percentage distribution of sample according to their level of knowledge n=60

Grading of knowledge	Range	%	Pre-test		Post-test	
			Frequency	%	Frequency	%
poor	0-13	<50%	41	68.3	0	0.0
Good	14-21	51-75%	19	31.7	36	60
Excellent	23-27	76-100%	0	0	24	40

Maximum score=27



**Fig 10:** Pyramid diagram showing pre-test post-test level of knowledge of the sample

It is evident from the data presented in Table 2 and Figure 10 that in the pre-test no one had excellent knowledge, (68.3%) had poor knowledge and, (31.7%) had good knowledge. In the post-test most of them (60%) had a good knowledge and (40%) had excellent knowledge.

**Table 3:** Mean, S D and mean percentage score of pre and post-test knowledge scores n=60

Area	Mean	SD	Mean percentage
Pre-test	12	4.69	44.44%
Post-test	21.67	3.33	80.26%

Maximum score=27

Data presented in Table 3 shows that in the pre-test the mean score was 12± 4.69. In the post-test the mean score was 21.67% ± 3.33.

**Section III:** Effectiveness planned teaching program on knowledge regarding hand foot mouth disease in terms of gain in post-test knowledge

In order to test the effectiveness of planned teaching program in increasing the knowledge paired't' was computed. To test the statistical significance the following null hypothesis was formulated:

**H01:** There will be no significant difference in the mean pre-test and post-test knowledge score of mothers regarding hand foot mouth disease.

Data presented in Table 4 shows that the obtained value (t=25.95) is higher than the table value (t<sub>59</sub>=1.67, p < 0.05). Therefore the null hypothesis is rejected and research hypothesis is accepted. It can be inferred that planned teaching program was effective in improving the knowledge of mothers.

**Table 4:** Paired't' test to test the significant difference between mean pre and post-test knowledge score n=60

	Mean score	Mean difference in score	SD Difference	t value
Pre-test	12.00	9.67	1.36	25.95*
Post-test	21.67			

t<sub>59</sub> = 1.67 p<0.05 \* Significant

**Section IV:** Association between mean pre-test knowledge score with selected baseline variables

This section deals with the association between pre-test mean knowledge score and selected baseline variables. To find out the association Chi-square test was done. To test the statistical significance the following null hypothesis was formulated:

**H02:** There will be no significant association between pre-test mean knowledge score and selected baseline variables.

It is evident from Table 5 that there is no significant association between selected baseline variables like age,

number of children, occupation, family income, and religion. The obtained values in all these areas (0.603, 0.810, 0.209, 0.755, 0.959, and 0.577) were lower than the table value (3.84,  $p < 0.05$ ). Therefore the null hypothesis

was retained and research hypothesis was rejected. Significant association was found between education and mean knowledge score. The obtained value (9.95) was significantly higher than the table value (3.84,  $p < 0.05$ ).

**Table 5:** Chi-square test to find out association between mean pre-test knowledge score and selected baseline variables n=60

Sl. No.	Variables	<Median <10	≥ Median >10	χ <sup>2</sup> value	Inference
<b>Age in years</b>					
1	18-24	5	6	1.013	Not Significant
	25-30	19	13		
	above 30	8	9		
<b>No of children</b>					
2	one	6	4	0.421	Not Significant
	Two	18	18		
	Three	8	6		
<b>Education</b>					
3	Primary	10	0	11.942	Significant
	High School	9	7		
	PUC	9	14		
	Graduate/Diplo	4	7		
<b>Occupation</b>					
4	Homemaker	21	12	3.131	Not Significant
	Unskilled	7	10		
	Professional	4	6		
<b>Type of family</b>					
5.	Nuclear	15	12	0.097	Not Significant
	Joint	17	16		
	Extended	0	0		
<b>Income</b>					
6	5000-10000	0	0	0.084	Not Significant
	10001-15000	16	13		
	15001-20000	13	12		
	>20,000	3	3		
<b>Religion</b>					
7	Hindu	19	16	1.099	Not Significant
	Muslim	6	8		
	Christian	7	4		
<b>Any information on HFMD</b>					
8.	Yes	2	18	22.634	Significant
	No	30	10		

χ<sup>2</sup>=3.84,  $p < 0.05$

**Conclusion**

HFMD is a typical childhood illness, but it also occurs in adults, which should be kept in mind due to the possibility of outbreaks, with emphasis on medical history and the overall clinical picture, to avoid inadequate treatments with antibiotics. Knowledge of the disease and early detection prevents the infection from spreading to other children and adults. Similarly, nurses have a key role in educating parents by recommending good oral hygiene to minimize the spread of the disease. A surveillance system to predict future outbreaks, appropriate public health measures and research into vaccine development are of vital importance to control HFMD.

A surveillance system to predict future outbreaks, encourage early diagnosis, put appropriate public health measures in place and research vaccine development is vitally important in order to control the disease

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