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Surendra Singh Depawat
M.Sc. Nursing Geetanjali
College of Nursing, Udaipur,
Rajasthan India

“A Study to assess the effectiveness of planned teaching programme on knowledge regarding dental fluorosis and its management among mothers of under five children at selected Anganwadi centres of Udaipur District”

Surendra Singh Depawat

Abstract

A pre experimental study to evaluate the effectiveness of planned teaching programme on knowledge regarding dental fluorosis & its management among mothers of under-five children. The sample consisting of 120 mothers of under five children. Mother were Non probability purposive sampling. The tool comprised of structured self-administered questionnaire. The post was conducted after one week. The data obtained were analysed and interpreted using descriptive and inferential statistics. The mean score of post-test knowledge 25.81 was apparently higher than the mean score of pre-test knowledge 11.25, suggesting that the Planned teaching programme was effective in increasing the knowledge of the mothers of under five children regarding dental fluorosis. The mean difference 14.56 between per test and post-test knowledge score of the mothers of under five children was found to be significant.

Keywords: Dental fluorosis & its management among mothers of under five children, per pre experimental study

1. Introduction

For attractive white teeth Fluoride plays a critical role. Fluoride is often called a double-edged sword because deficiency of fluoride intake leads to dental caries while excess consumption leads to fluorosis.

Dental fluorosis is a developmental disturbance of dental enamel caused by successive exposures to high concentrations of fluoride during tooth development, leading to enamel with lower mineral content and increased porosity. The critical period of exposure is between 1 and 4 years old.

Dental fluorosis or "mottled teeth" has long been recognized as an endemic problem affecting areas of the world with high levels of naturally occurring fluorides in the drinking water.

World Health Organization (WHO) has set the upper limit of fluoride concentration in drinking water at 1.5 mg/L consumption of above which causes Dental Fluorosis.

In India Dental fluorosis is endemic in 17 states and 1,50,000 villages in India. The problems are more pronounced in the states of Andhra Pradesh, Bihar, Gujarat, M.P Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh etc.

In Rajasthan state, 18 out of 32 districts are fluorotic and 11 million of the populations are at risk. In the absence of perennial rivers, surface and canal system, groundwater remains the main source of drinking water. It contains 2 to 20mg/L of fluoride. Fluoride is more common in ground water than in surface water. Some villages of Nagour, Jaipur, Jhunjhnu, Udaipur and Dungarpur district were traced to have endemic for fluorosis. The concentration in ground water varied from as low as zero to 18.00ppm as maximum level are found.

2. Materials and methods

The research approach adopted for the present study was evaluative approach as the study aimed at development of an intervention (planned teaching program) for assessing the knowledge of Dental fluorosis and its management among mother of under five children Udaipur. This approach would help the investigator to evaluate the effect of specific intervention that is “Planned Teaching Program” on the variable that is knowledge regarding dental fluorosis and its management among mothers of under five children in selected

Corresponding Author:
Surendra Singh Depawat
M.Sc. Nursing Geetanjali
College of Nursing, Udaipur,
Rajasthan India

Anganwadi centres of Udaipur district” Rajasthan.

2.1 Research design: pre-experimental one group pre-test post-test design was selected for the study. Research design helps the researcher in selection of subjects, manipulation of experimental variables, control of extraneous variables, procedure of data collection and the type of statistical analysis to be used to interpret the data.

Table 1: Pre-experimental one group pre-test post-test design

Group	Pre test	Intervention	Post test
	O ₁	X	O ₂

Key:

O₁ = Assessment of knowledge by administering pre-test.

X = Planned Teaching on knowledge of regarding Dental fluorosis.

O₂ = Assessment of knowledge by administering post-test.

2.2 Research setting

- It refers to the physical location and conditions which data collection takes place in the study. The present study has been conducted in Anganwadi centre Kodyat, Khemachkheri, Gorrella, Sisarma at Udaipur Rajasthan.

2.3 sample size and sampling technique: Non probability purposive sampling technique (odd & even method) was used for sample selection. 120 mothers of under five children has been selected as samples from Kodyat (32), Khemachkheri (30) Gorrella (27) and Sisarma (31) of Udaipur Rajasthan.

2.4 Sampling Criteria

The following criteria are set to select the samples:

Inclusion criteria

- Mothers of under five children whose children studying in selected Anganwadi at Udaipur dist.
- Mothers, who can read, write and understand Hindi.

Exclusion criteria

- Mothers of under five children who are not willing to participate in the study.
- Mothers of under five children who are not available during study period.

2.5 Variables of the study

- **Dependent variable:** It is the variable that the researcher is interested in understanding, explaining, or predicting. It also refers to the presumed effect. It is the condition or characteristics those appear or disappear as a result of an independent variable. In this study dependent variable is knowledge regarding dental fluorosis among mothers of under five children at Udaipur Rajasthan.
- **Independent variable:** It is the variable that stands alone and does not depend on any other. It also refers to the presumed causes. It is the condition or characteristics manipulated by the researcher. In this study independent variable is planned teaching regarding dental fluorosis.
- **Demographic variable:** Demographic variable confound the relationship between the independent and dependent variable and that need to be controlled either through building in research design or through

statistical procedure.

In this study, demographic variables are age, religion, educational qualification, occupation of mother, monthly income, types of family, number of children, and source of information of dental fluorosis.

2.6 Population

Population refers to the entire aggregate of individuals or objects having common characteristics. In the present study the population consists of Mother of under five children.

2.7 Description of the tool: the structured knowledge questionnaire regarding schedule comprised of two section

Section A: Consisted 8 items on Socio-demographic questionnaire such as age religion education qualification, occupation monthly income type of family number of children, source of information.

Section B: 32 Structured knowledge Questionnaire multiple choice in nature with 4 choices.

Scoring

The knowledge of mothers of under-five regarding the outcomes of dental fluorosis was scored as follow, one mark for each correct answer and zero marks for incorrect answer. The maximum score was 32 to interpret level of knowledge the score was distributed as follow

Interpretation of knowledge

Level	Range
Adequate knowledge	75-100%
Moderately adequate knowledge	50-75%
Inadequate knowledge	0-50%

3. Result and discussion

Section I: Description of Demographic variables Respondent

Section II: Findings related to knowledge score of Mothers of under five children regarding Dental fluorosis.

Part A: Findings related to Area wise pre-test knowledge score of respondents on prevention of dental fluorosis.

Part B: Findings related to Area wise post-test knowledge score of respondents on prevention of dental fluorosis.

Part C: Findings related to Effectiveness of planned teaching program on prevention of dental fluorosis.

Section III: Findings related to association between pre-test knowledge score with selected demographic variables of mother of under five children.

4. Result

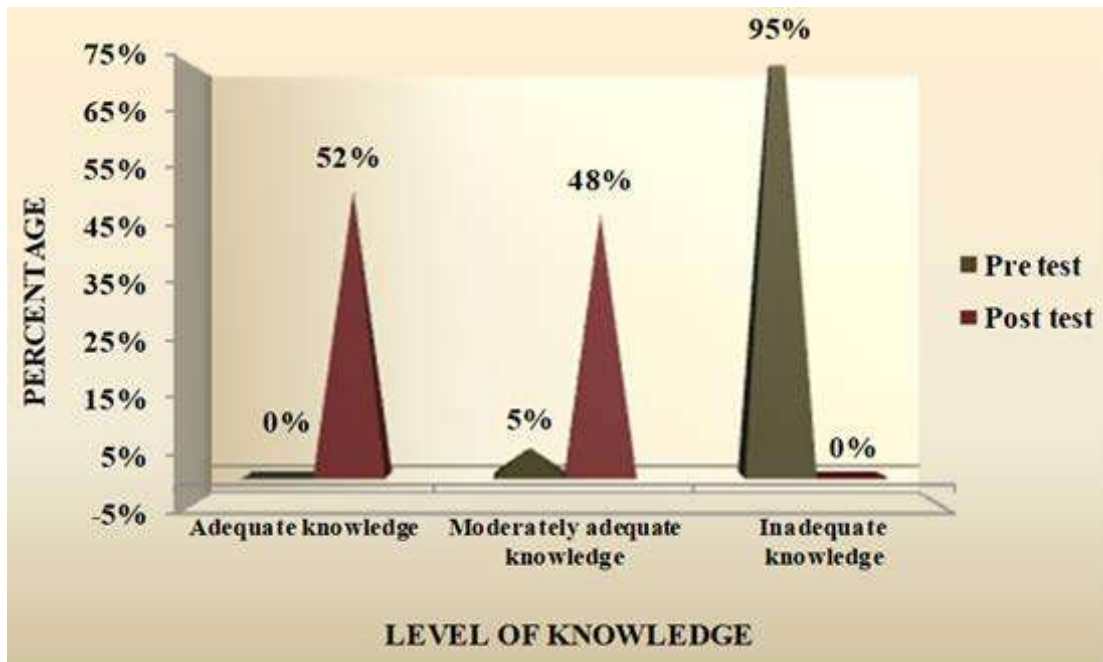
Table 2: Distribution of students by the level of knowledge

N = 120				
Level of knowledge	Score	Percentage	Pre test	Post test
Adequate knowledge	26-32	75-100%	0%	52%
Moderately adequate knowledge	17-25	50-75%	5%	48%
Inadequate knowledge	0-16	0-50%	95%	0%

The result showed that in the pre-test most of the respondents 0% had no adequate knowledge on dental fluorosis 5% respondents had moderately adequate knowledge & 95% respondents had inadequate knowledge

on dental fluorosis. After giving health education, in the post test most of the respondents gain adequate knowledge on dental fluorosis that was 52% whereas 48% respondents

had moderately adequate knowledge & 0% respondents had inadequate knowledge on dental fluorosis.



Section - II
Findings related to knowledge score respondents regarding dental fluorosis

This section deals with analysis and interpretation of

collected data to find out the knowledge scores of respondents before and after, giving the intervention on knowledge regarding dental fluorosis.

Part I: Area wise pre-test knowledge score of respondents on dental fluorosis.

Area	Max score	Mean	Mean %	S.D.
Introduction of Dental fluorosis	8	51.87	43.22%	13.08
Definition, causes and risk factor	3	41.33	34.44%	8.97
Epidemiology, mechanism, sign and symptom	5	49	40.83%	17.33
Treatment of dental fluorosis	4	38.25	31.87%	14.16
Prevention and control of dental fluorosis	12	34.41	28.66%	9.45
Total	32	11.25	35.15%	3.73

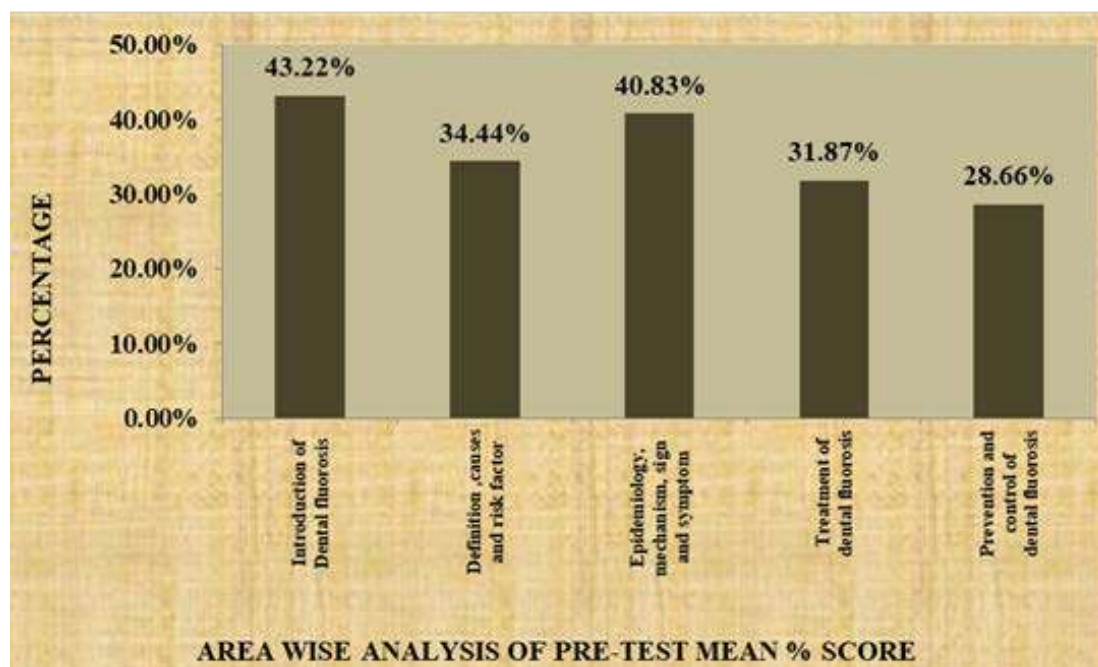


Fig 1: Area wise analysis of pre-test mean percentage score

Table 13 & Figure 13: The result showed that in pre-test the mean percentage obtained by the respondents was 43.22% with SD of 13.08 in the aspect of Introduction of dental fluorosis, 34.44% with SD of 8.97 in the aspects of Definition causes & Risk factor, 40.83% with SD of 17.33 in the Epidemiology, mechanism & sign and symptoms,

31.87% with 14.16 of SD in Treatment, 28.66% with SD 9.45 in prevention and control. The mean Percentage of overall knowledge obtained by the respondents is 35.15% with SD of 3.75.

Part - B

Table 3: Area wise post-test knowledge score of respondents on dental fluorosis.

Area	Max score	Mean	Mean %	S.D.
Introduction of Dental fluorosis	8	94	78.33%	17.67
Definition, causes and risk factor	3	91.66	76.38%	19
Epidemiology, mechanism, sign and symptom	5	97.2	81%	19.38
Treatment of dental fluorosis	4	118.25	98.54	6.72
Prevention and control of dental fluorosis	12	99.83	83.19	18.74
Total	32	25.81	80.65%	2.08

N=120

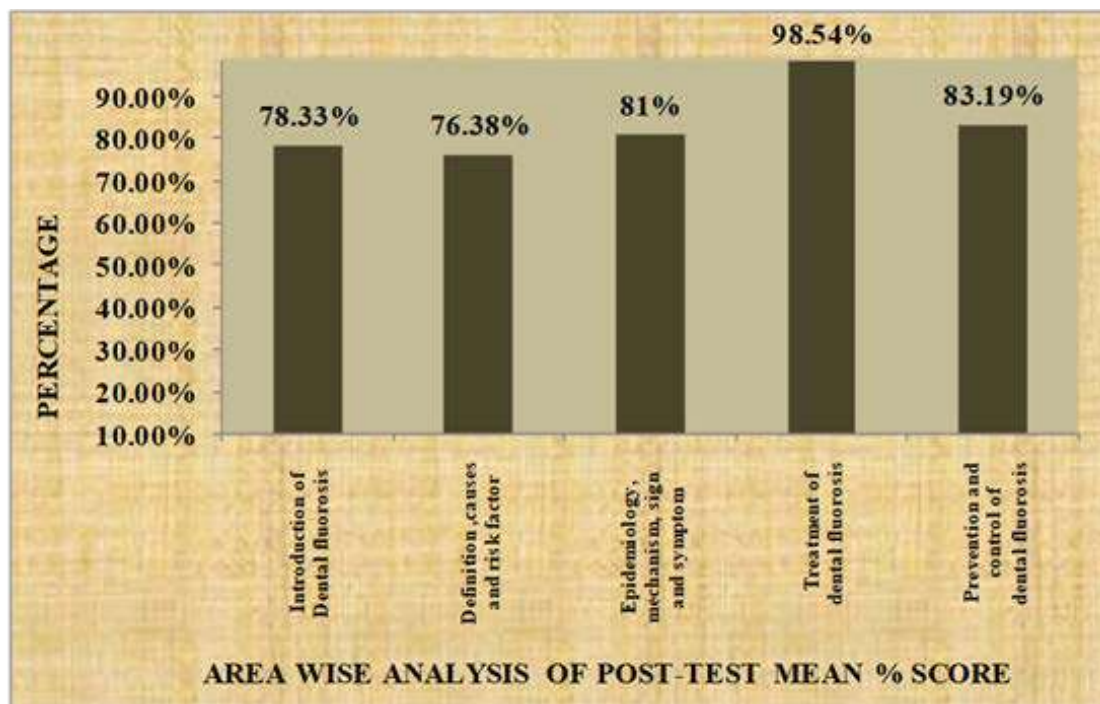


Fig 2: Area wise analysis of post-test mean percentage score

Table 14 & figure 14: The result showed that in post-test the mean percentage obtained by the respondents was 78.33% with SD of 17.67 in the aspect of Introduction of dental fluorosis, 76.38% with SD of 19 in the aspects of Definition causes & Risk factor, 81% with SD of 19.38 in the Epidemiology, mechanism & sign and symptoms, 98.54%

with 6.72 of SD in Treatment, 99.83% with SD 18.74 in prevention and control. The mean Percentage of overall knowledge obtained by the respondents is 80.65 % with SD of 2.08.

Part - III

Table 4: Effectiveness of Planned teaching by comparing pre-test and post-test knowledge score of respondent

N= 120

	Mean	Mean %	SD	Enhancement	Enhancement %	DF	T-Value	Inference
Pre test	11.25	35.15	3.73	14.56	56.41	119	38.30	S
Post test	25.81	80.65	2.08					

S = Significant

NS = Non Significant

Table 16: The result showed that the mean post-test knowledge score is 25.81 (80.65%) is greater than the mean pre-test knowledge score 11.25(35.15%). The above table also depicts that the enhancement in the knowledge of respondents is 14.56 (56.41%) supporting the post-test knowledge score are higher than the pre-test knowledge score. The data further represent that the 't' value of 38.30 is

significantly higher than the table value 1.96 at 0.05 level of significance. This indicates that there was difference in pre-test and post-test knowledge score of respondents and planned teaching is effective in improving the knowledge score of Mothers of Under five children regarding dental fluorosis.

5. Conclusion

The study aimed at testing the effectiveness of planned teaching programme on knowledge regarding dental fluorosis and its management among mothers of under five children. The result showed that the planned teaching programme was highly effective so that the dental fluorosis can be prevented.

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