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EFFECT OF VIDEO-ASSISTED PLANNED TEACHING PROGRAMME REGARDING KNOWLEDGE AND PRACTICE OF ORAL HEALTH AMONG SCHOOL CHILDREN STUDYING IN SELECTED PRIMARY SCHOOLS OF DARJEELING, WEST BENGAL

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ABSTRACT

Oral health is a vital aspect of overall well-being, especially in childhood. This quasi-experimental study evaluated the effectiveness of a video-assisted planned teaching programme on oral health among 90 students from Class III and IV in Darjeeling, West Bengal. A structured questionnaire assessed pre- and post-intervention knowledge and practices. Demographic analysis revealed that most students were under 9 years old, with 52% girls and 64% from nuclear families. Notably, 79% consumed unfiltered water and 50% had oral health issues, mainly dental caries (82%). Pre-test findings showed maximum had poor knowledge (71%) and practice (69%) levels. Post intervention, majority had average knowledge score of 56% and average practice score of 80%, with significant mean score improvements (knowledge: 7.49 to 12.03; practice: 3.62 to 7.19). Paired t-tests confirmed statistical significance ($p < 0.05$). The study concludes that video-assisted education effectively enhances oral health awareness and practices, supporting its integration in school-based health initiatives.

Key Words: *Effect, Video assisted planned teaching programme, Knowledge on Oral Health, Practices on Oral Health, School Children.*

INTRODUCTION

The World Health Organization (WHO) defines oral health as the absence of chronic mouth and facial pain, oral and throat cancers, mouth sores, tooth decay, tooth loss, and other conditions or diseases that can impact the health of the oral cavity [1]. Oral health reflects a person's general health, well-being, and quality of life. It includes various diseases and conditions, such as tooth decay and gum disease [2]. Dental caries is most commonly observed among individuals from lower socioeconomic backgrounds, including those with lower literacy levels, inadequate living conditions, poor oral hygiene practices, and limited health-promoting behaviours [3].

BACKGROUND OF THE STUDY

According to the Global Burden of Disease 2025 report, around half of the world's population—approximately 3.69 billion people—suffer from oral health issues. Among them, 2.4 billion individuals have cavities in their permanent teeth, and 486 million children are affected by cavities in their primary teeth [4].

As per WHO's global oral health status report 2022, the prevalence of oral diseases is expected to keep increasing in many low and middle-income countries, such as India, in the coming years. This rise is largely due to many noncommunicable diseases (NCDs) and dietary shifts, including higher sugar intake, along with increased tobacco and alcohol use and their underlying social and commercial determinants [5].

In India, over 80% of children aged 6 to 19 suffer from dental caries, and compared to developed countries, only a small percentage of Indian school children maintain good oral hygiene [6]. This is mainly due to frequent snacking, high consumption of sugary foods and drinks between meals, poor dietary habits, parental illiteracy, and low socioeconomic status [7, 8].

India has over 1.4 million schools, including around 765,852 primary schools. On average, a student spends about 800 hours per year in school [9]. Out of India's total federal budget of ₹3.4 lakh crore in 2019, only ₹93,000 crore—around 27%—was allocated to education. In lower-level educational institutions, health promotion does not receive adequate attention [10].

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Having proper knowledge and a positive attitude toward oral health care plays a crucial role in preventing oral diseases [11]. Parents with good oral hygiene habits and a positive attitude contribute significantly to improving their child's oral health, brushing habits, and reducing sugar intake in their diet [12].

OBJECTIVES OF THE STUDY

1. To develop and validate video assisted planned teaching programme regarding knowledge and practice of oral health among school children.
2. To assess the pre-test and post-test knowledge of oral health among school children.
3. To evaluate pre-test and post-test practice of oral health among school children.
4. To determine the effectiveness of planned teaching programme regarding knowledge and practice of oral health among school children in terms of gain in knowledge and practice score.
5. To find out the association between pre-test knowledge of oral health among school children and selected demographic variables.
6. To find out the association between pre-test practices of oral health among school children and selected demographic variables.

RESEARCH METHODOLOGY

Research Approach: Quantitative research approach was suitable for this study.

Research Design: The research design adopted for this study was quasi-experimental, one group pre-test post-test research design.

Population and sample: All school children who were studying in primary school were the population in this study. Nonprobability purposive sampling technique was used in this study. A total of 90 school children studying in selected primary schools of Darjeeling district in West Bengal formed the sample of the study.

Data collection tool and technique:

Tool-I: Structured Demographic questionnaire,

Tool-II: Structured knowledge questionnaire,

Tool-III: Observational Checklist.

Technique: Pen paper method, direct non-participatory observation.

RESULT

Table – 1: Frequency and Percentage Distribution of Demographic Variables of School Children. n=90

Sample characteristics		Frequency	Percentage (%)
Age in years	Up to 9 years	68	76
	Above 9 years	22	24
Gender	Girl	47	52
	Boy	43	48
Type of family	Nuclear	58	64
	Joint	32	36
Education of father	Non-Literate	4	5
	Up to Primary	20	22
	Up to Secondary	45	50
	Up to Higher Secondary	11	12
	Graduation	10	11
Occupation of father	Self-employed	60	67
	Daily Wage	26	29
	Private job	1	1
	Government job	1	1
	Unemployed	2	2

Education of mother	Non-Literate	2	2
	Up to Primary	13	15
	Up to Secondary	49	54
	Up to Higher Secondary	17	19
	Graduation	9	10
Occupation of mother	Self-employed	5	5
	Daily Wage	16	18
	Private job	5	6
	Government job	2	2
	Home maker	62	69%
Dietary pattern of school children	Non-vegetarian	90	100
Type of drinking water	Filtered water	19	21
	Tap water	71	79
Presence of oral problems	No	45	50
	Yes	45	50

Data presented in Table - 1 depicts that maximum of the school children (76%) were from the age group of up to 9 years and another 24% were from the age group of above 9 years.

In case of gender, majority students (52%), were girls and other 48% were boys. Majority of students (64%) were from nuclear families and other 36% were from joint families.

In case of father's education majority of fathers of school children (50%) had up to secondary education and minimum 5% of the fathers of school children were non-literates.

Majority of fathers of school children (67%), were self-employed and minimum 1% of the fathers of school children were doing private jobs and another 1% of fathers were in government jobs.

In case of mother's education, majority mothers of school children (54%) had up to secondary education and minimum 2% mothers of school children were non-literate.

Majority mothers of school children (69%), were home makers and minimum mothers of school children (2%) were in government jobs.

All school children were non-vegetarian. In another case, maximum (79%) school children were using tap water as drinking water and other 21% of school children were using filtered water as drinking water.

50% of school students had oral problems and the other 50% had no oral problems.

Table - 2: Frequency and percentage of types of oral problems among school children n=45

Sample characteristics	Frequency	Percentage
If present, then the types of oral problems:		
Dental caries	37	82%
Gum disease	5	12%
Malocclusion of teeth	1	2%
Mouth ulcer	1	2%
Dental caries and gum disease both	1	2%

Table - 2 depicts that maximum number (82%) of school students were suffering from dental caries and minimum 2% of them were suffering from malocclusion of teeth, other 2% were suffering from mouth ulcers and another 2% school students were suffering from dental caries as well as gum disease both.

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Table - 3: Level of knowledge score among school children before and after planned teaching programme regarding knowledge and practice of oral health. n=90

Score	Level of performance	Pre-test		Post-test	
		Frequency	Percentage (%)	Frequency	Percentage (%)
>15 (>75%)	Good	1	1	18	20
10-15 (50-75%)	Average	25	28	50	56
<10 (<50%)	Poor	64	71	22	24

The data presented in Table - 3 depicts that in case of pre-test, maximum (71%) of the school children scored in poor range and minimum only 1% of school children scored in good range. Whereas in post-test, majority (56%) students scored within average range and minimum 20% of the school children scored in good range. Hence, this table shows that post-test percentage was higher than the pre-test percentage. So, it depicts that planned teaching programme was effective.

Table - 4: Level of practice score among school children before and after planned teaching programme regarding knowledge and practice of oral health. n=90

Score	Level of performance	Pre-test		Post-test	
		Frequency	Percentage (%)	Frequency	Percentage (%)
>8 (>75%)	Good	0	0	16	18
5-8 (50-75%)	Average	28	31	72	80
<5 (<50%)	Poor	62	69	2	2

The data presented in Table - 4 depicts that in pre-test, majority of school children (69%), scored in poor range. In pre-test none of the school children scored in good range. Whereas maximum (80%) of school children scored in average range and in post-test, 2% school children scored in poor range. Hence, this table shows that post-test percentage was higher than the pre-test percentage.

Table - 5: Pre-test and post-test mean score, SD, mean difference and 't' value of knowledge score among school children before and after planned teaching programme regarding knowledge and practice of oral health. n=90

	Mean	Mean difference	Median	SD	't' value
Pre-test	7.49	4.54	7	3.57	14.76***
Post-test	12.03		12	3.82	

't' value, at df (89) = lies between 3.42-3.39, P<0.001

The data presented in Table - 5 depicts that calculated 't' value was 14.76 which was more than the table value lying between 3.42-3.39 at the level of 0.001 significance and degree of freedom was 89. Obtained mean difference was a true difference and it was statistically significant. So, the null hypothesis (H_0) was rejected and research hypothesis (H_1) was accepted. Hence, there was a significant difference between mean pre-test and post-test knowledge score of oral health among school children. The study concluded that the planned teaching programme was statistically effective by comparing pre-test and post-test knowledge scores.

Table - 6: Pre-test and post-test mean score, SD, mean difference and 't' value of practice score among school children before and after planned teaching programme regarding knowledge and practice of oral health. n=90

	Mean	Mean difference	Median	SD	't' value
Pre-test	3.62	3.55	4	1.53	23.39***
Post-test	7.17		7	1.29	

't' value, at df (89) = lies between 3.42-3.39, P<0.001

The data presented in Table - 6 depicts that calculated 't' value was 23.39 which was more than table value lying between 3.42-3.39 at the level of 0.001 significance and degree of freedom was 89. Obtained mean difference

was a true difference and it was statistically significant. So, the null hypothesis (H_{02}) was rejected and research hypothesis (H_2) was accepted. Hence, there was a significant difference between mean pre-test and post-test practice score of oral health among primary school children. The study concluded that the planned teaching programme was statistically effective by comparing pre-test and post-test practice scores.

Table - 7: Association between pre-test knowledge and socio-demographic variables

Demographic variables	Chi Square value	Result
Age	5.008*	Significant association
Gender	0.025	No significant association
Type of family	12.59***	Significant association
Educational status of the father	0.205	No significant association
Occupation of the father	0.202	No significant association
Educational status of the mother	0.351	No significant association
Occupation of the mother	0.269	No significant association
Source of drinking water	0.848	No significant association
Presence of dental problems	0.406	No significant association

*χ^2df (1) = 3.84, p < 0.05, *** χ2df (1) = 10.83, p < 0.001

The Table - 7 shows a significant association of pre-test knowledge with age and type of family, indicating these factors influence knowledge levels. Other variables—gender, parental education and occupation, drinking water source, and dental problems—show no significant association, suggesting limited impact on pre-test knowledge in this study population.

Table - 8: Association between pre-test practice and socio-demographic variables

Demographic variables	Chi Square value	Result
Age	1.880	No significant association
Gender	0.143	No significant association
Type of family	12.59*	Significant association
Educational status of the father	0.698	No significant association
Occupation of the father	0.091	No significant association
Educational status of the mother	0.068	No significant association
Occupation of the mother	0.065	No significant association
Source of drinking water	0.085	No significant association
Presence of dental problems	1.620	No significant association

* χ^2df (1) = 10.83, p < 0.001

The Table – 8 shows no significant association between pre-test practice and most socio-demographic variables, including age, gender, parental education, occupation, water source, and dental problems. However, type of family shows a significant association (χ^2=12.59, p<0.001), indicating that family structure influences baseline oral health practices.

DISCUSSION

The study found that primary school children had poor baseline knowledge and practices regarding oral health, influenced by limited awareness and socio-cultural factors, with many experiencing dental problems such as caries. After a video-assisted teaching programme, both knowledge and practice scores improved significantly, demonstrating its effectiveness. Statistical tests confirmed meaningful differences between pre- and post-test scores, leading to rejection of null hypotheses. Additionally, certain demographic factors, particularly age and family type, showed significant associations with knowledge and practice levels. Overall, the findings highlight the importance of structured educational interventions and regular oral health screening to improve children's oral hygiene behaviours.

RECOMMENDATIONS

- Use stratified random sampling to improve representativeness and reduce bias.
- Include behavioural outcomes like brushing frequency and dental visits.
- Add follow-up assessments after 3–6 months to measure retention and long-term change.
- Apply advanced analysis (paired t-test, ANOVA, regression) and calculate effect size to assess impact.

CONCLUSION

The study concludes that video-assisted teaching effectively improves oral health awareness among school children, promoting better brushing practices and regular screenings. This intervention helps reduce common issues like dental caries and gum diseases. Engaging, age-appropriate education enhances learning outcomes, while factors such as age and family type influence understanding. Overall, integrating structured oral health programme into school curricula is essential for fostering healthy habits early and supporting long-term well-being in children.

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