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Research Article

A Pre-experimental Study to Evaluate the Effectiveness of Structured Teaching Program on Knowledge Regarding Dental Care among Secondary Schoolchildren in the Selected School of Jind, Haryana

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ABSTRACT

Aim: The important public health issue among adolescents is poor oral health. Various studies have noted a high prevalence of dental problems among adolescents despite the efforts, the level of dental caries remains prevalent in developed countries; it has increased in developing countries due to dietary changes. The aim of this pre-experimental study was to evaluate the effectiveness of structural teaching program on the knowledge regarding dental care among secondary schoolchildren in selected school of Jind, Haryana. **Methodology:** This pre-experimental study was included 60 children from secondary school of Haryana selected by simple random sampling technique. Data were collected by self-structured knowledge questionnaire. Data analysis was done by means of descriptive and inferential statistics. **Results:** Pre-test, an overwhelming majority of the samples 55 (91.66%) were having poor level of knowledge regarding dental hygiene. Samples who had average level of knowledge were 5 (8.34%). None of the samples were having good level of knowledge. Post-test, an overwhelming majority of the samples 39 (81.67%) were having good level of knowledge regarding dental hygiene. Samples who had average level of knowledge were 11 (18.33%). None of the samples were having poor level of knowledge, and in the present study, it was found that there was no statistically significant association between pre-test level of knowledge and the selected demographic variables. **Conclusion:** There are findings of the study shown that the structured teaching programmed was more effective in improving the knowledge of the children regarding dental care.

Keywords: Effectiveness, Structured teaching program, Knowledge, Dental care, Children

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Introduction

Adolescence is a stage in which general health is presented at its best, though it is a period of increased risk to oral health because of the greater independence with regard to the consumption of sugary foods and a certain revulsion regarding oral hygiene.[1] Healthy teeth and oral tissues and the need for oral health care are important for any section of society. Dental caries is an infectious microbial disease of multifactorial origin in which diet, host, and microbial flora interact over a period of time in such a way so as to encourage demineralization of the tooth enamel with resultant caries formation. Dental caries, the product of man's progress toward civilization, has a very high morbidity potential and, thus, is coming into focus of the mankind.[2] Dental hygiene is the practice of keeping one's mouth clean and free from diseases and other related oral health problems by regular brushing and cleaning between the teeth. It is important that dental hygiene be carried out on a regular basis to enable prevention of dental disease.

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The most common dental diseases are tooth decay such as cavities, dental caries, and gum diseases like gingivitis, and periodontitis. Regular brushing means brushing twice a day before breakfast and before going to bed and cleaning between the teeth means interdental cleaning which is as important as tooth brushing. It can be done with brushes.[3] Dental caries affects 60–90% of schoolchildren and most adults in industrialized countries; it is increasingly prevalent in developing countries and highly prevalent in some Asian and Latin American countries.[4] Oral health is an integral part of general health so that the mouth and face are considered as a mirror of health. Poor oral health may have a profound effect on general health, and several oral diseases are related to chronic diseases. Oral health plays a key role in general health.[5] Good oral health enables individuals to communicate effectively, enjoy food, speak well, enjoy a higher quality of life, and has high self-esteem and social confidence, and lower school absenteeism.[6] Dental caries and periodontal disease can be viewed as behavioral diseases preventable by simple oral hygiene practices. Oral health self-care methods (the use of dental floss, brushing, and fluoride therapy) are effective techniques for preventing the dental decay and periodontal diseases. The adolescent period is a critical time to establish attitudes and beliefs and shape an individual's health behavior. During the stage of childhood to adolescence, health behaviors consolidate and probably will not change beyond adolescence.[7] Approximately 60–90% of school-aged children suffer from dental caries in developed countries.[8] Stability and early consolidation have particularly been evident for tooth brushing behavior.[9]

Objective of study

The objective of the study was as follows:

- To assess the pre-test level of knowledge regarding dental hygiene among secondary schoolchildren.
- To assess the post-test level of knowledge regarding dental hygiene among secondary schoolchildren.
- To evaluate the effectiveness of structured teaching program on dental hygiene.

Research hypotheses

H_1: There will be a significant increase in the mean post-test knowledge score regarding dental hygiene among secondary schoolchildren.

H_2: There will be a significant association between the mean pre-test levels of knowledge score with their selected demographic variables.

Assumptions

- Secondary schoolchildren may have less knowledge regarding dental hygiene.
- Structured teaching program will improve the knowledge of secondary schoolchildren regarding dental hygiene.
- Structured teaching program can bring the change in knowledge and behavior regarding dental hygiene.

Delimitations

- Secondary schoolchildren studying in 7th and 8th standard.
- The study is delimited to a period of 4 weeks.
- The study is delimited to the selected school in Jind.

METHODOLOGY

- Research approach: Quantitative approach
- Research design: Pre-experimental one-group pretest-posttest design will be adopted for this study
- Variables:
  Independent variables: Structured teaching program on dental hygiene
  Dependent variables: Secondary schoolchildren's knowledge on dental hygiene.
- Setting of the study: Govt. Sr. Sec. School of Jind, Haryana
- Population: Adolescent who are studying in Govt. Sr. Sec. School of Jind, Haryana
- Sample: Adolescent who fulfill the inclusion criteria will be considered as a sample
- Sample size: Sample size consists of 60 adolescent studying at Govt. Sr. Sec. School of Jind, Haryana
- Sampling technique: The technique adopted for this study was simple random sampling.

RESULTS AND INTERPRETATION

Table 1 shows that majority of the samples 55 (91.66%) were having poor level of knowledge regarding dental hygiene. Samples who had average level of knowledge were 5 (8.34%). None of the samples were having good level of knowledge.
Table 2 shows that majority of the samples 39 (81.67%) were having good level of knowledge regarding dental hygiene. Samples who had average level of knowledge were 11 (18.33%). None of the samples were having poor level of knowledge.
Table 3 shows the effectiveness of structured teaching program on dental hygiene. The paired' test value is 12.157

Table 1: Frequency and percentage distribution of schoolchildren pre-test level of knowledge on dental hygiene (n=60)

S. No.	Level of knowledge	Frequency (f)	Percentage
1.	Poor (0–7)	55	91.66
2.	Average (8–14)	5	8.34
3.	Good (15–20)	0	0

at degree of freedom 59. The value is extremely significant at 0.05 level of significance.

Table 4 shows that the age Chi-square is 0.0538 and $P = 0.8166$, df 1, sex Chi-square is 0.0599 and $P = 0.8065$, df 1, place of domicile Chi-square is 0.0974 and $P = 0.7549$, df 1, dietary pattern Chi-square is 0.9719 and $P = 0.3242$, df 1, father education Chi-square is 0.1284 and $P = 0.3784$, df 2, and sources of information Chi-square 0.5219, $P = 0.1564$, df 2. To test the level of association between pre-test level of knowledge and selected demographic variable, the null hypothesis can be stated as follows.

H0 – There will be no statistically significant association between age, sex, place of domicile, dietary pattern, father's education, and source of information.

DISCUSSION

Similar study was conducted by Ms. Manveer Kaur on "A pre-experimental study was conducted to assess the effectiveness of structured teaching program on knowledge regarding dental hygiene among middle schoolchildren." The results revealed that mean score of pre-test was 14.91 with the S.D. 3.84, whereas in post-test. the overall mean score of 23.01 with S.D. of 3.72. The *t*-test value was −8.1* which is statistically significant at $P < 0.005$ level of significance. After structured teaching program, 68% of students had average and 32% had good level of knowledge and no one had poor level of knowledge regarding dental hygiene. The study finding implied that the education had a vital role in improving the knowledge of schoolchildren regarding dental hygiene.[10]

Table 2: Frequency and percentage distribution of schoolchildren post-test level of knowledge on dental hygiene (n=60)

S. No.	Level of knowledge	Frequency (f)	Percentage
1.	Poor (0–7)	0	0
2.	Average (8–14)	11	18.33
3.	Good (15–20)	39	81.67

Table 3: Effectiveness of structured teaching program on dental hygiene

S. No.	Parameter	Mean	SD	SEM	"*t*"-test
1.	Pre-test	11.12	2.28	0.32	
2.	Post-test	16.28	1.95	0.28	12.157

Study was conducted by Harman Preet Kaur on "A Pre-Experimental Study to assess Effectiveness of Structured Teaching Program on Knowledge about Dental Caries and its Prevalence among Students in Selected Schools of District Gurdaspur, Punjab." The results showed that among 250 students, as per prevalence of dental caries, 64.4% of students were found suffering with moderate level of prevalence. Nearly one-fourth 18.4% of students had normal teeth. Very few were seen with 10.4%, severe and 6.8% mild prevalence of dental caries. According to pre-test knowledge regarding dental caries, 66% of students had good knowledge regarding dental caries whereas 14.8% were having average knowledge regarding dental caries. No student was having below average knowledge regarding dental caries. According to post-test knowledge regarding dental caries, 91.2% of students had excellent knowledge regarding dental caries whereas 8.8% were having good knowledge regarding dental caries. No student was having average and below average knowledge regarding dental caries. According to the association of level of knowledge of students with selected sociodemographic variables such as class, gender, family income, and place of living, it was found to be non-significant. Hence, no sociodemographic variable was having any impact on knowledge regarding dental caries among students whereas age depicts significant relationship with the level of knowledge hence it have impact on knowledge regarding dental caries.[11]

A similar study was conducted by Rani, Sudesh, and Dahiya, Heaven on " A Pre-Experimental One Group Pre-test Post-test study was conducted to evaluate the Effectiveness of Planned Health Teaching program regarding oral hygiene among 250 school students from 4th and 5th standard from selected schools of Rohtak, Haryana" using simple random sampling technique. Structured interview knowledge questionnaire was used to assess the knowledge of school students. The findings of the study revealed that the mean post-test scores were significantly higher than mean pre scores.[12]

A study was conducted by Bahannan *et al*. on "Oral and Dental Health Status among Adolescents with Limited Access to Dental Care Services in Jeddah." The prevalence of decayed teeth was 79.7% and was significantly higher among boys (88.9%) than girls (69.0%). About 11% of students had missing teeth, with a significantly higher figure among females than males (15.9% vs. 7.3%); 19.8% of students had filled teeth.

Table 4: Level of association between pre-test knowledge and selected sociodemographic variables

S. No.	Demographic variables	Chi-square	"*P*" value	df	Level of association
1.	Age	0.0538	0.8166	1	NS
2.	Sex	0.0599	0.8065	1	NS
3.	Place of domicile	0.0974	0.7549	1	NS
4.	Dietary pattern	0.9719	0.3242	1	NS
5.	Father's education	0.1284	0.3784	2	NS
6.	Source of information	0.5219	0.1564	2	NS

NS: Not significant. Level of significance=0.05

Moreover, a DMFT of seven or more was significantly more prevalent among males (43.3%) than females (26.8%), while the percentage of females with sound teeth was significantly higher than for males (20.4% and 9.6%, respectively). The CPITN revealed 0, 1, and 2 scores among 14.6%, 78.2%, and 41.6%, respectively. Males had a significantly higher percentage of healthy periodontal condition (23.8%) than females (3.8%). Dental caries prevalence was moderate to high, calculus and gingival bleeding were widespread among schoolchildren, and were more prevalent among students with low socioeconomic status.[13]

A study was conducted by Tejeshwari on "Effectiveness of Structured Teaching Program on Knowledge Regarding Oral Hygiene among Schoolchildren in St. Benedict School, Bengaluru." Pre-experimental design (one-group pretest-posttest design) was used to study effectiveness of STP. Thirty schoolchildren from St. Benedict School, Bengaluru, were recruited by non-probability convenient sampling method. The results revealed that the study revealed that among 30 schoolchildren, 2 (6.66%) schoolchildren had adequate knowledge, 28 (93.33%) schoolchildren had moderately adequate knowledge, and there was no inadequate knowledge found in the post-test score. The mean pre-test knowledge score of schoolchildren was 10.1, whereas the mean post-test knowledge score was 18.8. The obtained "*t*" value was 10.48 which was found statistically significant 0.05 levels. The study was found to be effective in the improving knowledge of schoolchildren as evidenced by the significant change between pre-test and post-test knowledge score.[14]

CONCLUSION

The findings of the study showed that the structured teaching program was more effective in improving the knowledge of the children regarding dental hygiene. There was no association between the pre-test knowledge score and the demographic variables in the group.

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