

A Pre-Experimental Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Prevention of Dental Caries among Children

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Abstract

Dental caries is one of the most common chronic disease that affect individuals at all ages, it is the principle oral problem in children and Adolescents. Dental caries is a disease which causes a progressive disintegrating of the inorganic and structure of the teeth. Children are the most important segment of our population and intend to receive attention from family, school, society and government. Children are truly the foundation of a society because healthy children grow to become healthy and strong adults who can actively participate in the developmental activities of a nation. Children spend considerable period of their lifetime in the school right from their childhood to adolescence. It has been proven that school can provide an ideal platform for the promotion of oral health. The research approach adopted in the present study was evaluative approach, and research design was one group pre test and post test design which belongs to pre - experimental design. Purposive Non random sampling technique was used to select the school as well as the sample. The sample size was of 60 school children's age between 8 to 14 years. Data were collected by using structured interview schedule and structured teaching programme was intervened, again after a gap of seven days and post test was conducted with the same tool. Result showed that the pre test mean score was 13.5 (S.D =2.487) and in post test it was 26.02 (S.D =3.417). The mean post test knowledge score were higher than the mean pretest scores which indicated an improvement in the knowledge level of the respondents after structured teaching programme.

Keywords: knowledge; structured teaching programme; Dental caries; Effectiveness.

Introduction

Today's children are tomorrow's citizen. As per modern concepts school health service is an economical and powerful means of raising health, and more important of future generation. The school health service is a personal health service. A special form of tooth can occur in young children [1]. the primary teeth require care because

they help to develop good speaking and eating habits, reserve space for permanent. However, millions of individuals suffer from dental caries and periodontal disease, resulting in unnecessary pain, difficulty in chewing, swallowing, speaking and increased medical costs. Untreated oral diseases in children frequently lead to serious general health problems, significant pain, interference with eating and lost school time and teeth [2].

Dental caries is a disease which causes a progressive disintegrating of the inorganic part and structure of the teeth. The disease starts on the tooth surface and unless checked properly involves the enamel, dentin and vital structure of the dental pulp [3].

Dental caries is one of the most common chronic disease that affect individuals at all ages, it is the principle oral problem in children and Adolescents. The ages of greatest vulnerability are 4-8 years for the primary dentition and 12-15 years for the secondary (or) permanent dentition. Dental

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carrier, if untreated, result in total destruction of involved teeth [4].

Health is not complete without oral health. The concept of dental health under theme "health for all 2025 by AD" is significant issue among human beings. Major portion of human population comes from pediatric population. So, the school going children should be made aware of the importance of oral hygiene and oral health problems [5]. In order to develop health of teeth, children have to be taught about the dental health, dental visits, daily mouth care, common dental problems like caries and their prevention [6].

Brushing teeth at least twice a day with fluoride toothpaste and flossing on a regular basis is advised. It is an important to clean other areas of mouth particularly tongue to prevent bad breath [7]. The main purpose of maintaining good dental hygiene is to prevent build-up of plaque which acts as reservoir of bacteria. Bacterial plaque accumulated on teeth because of poor oral hygiene is the causative factor of major dental problems [8].

Children are the most important segment of our population and intend to receive attention from family, school; society and government. Children are truly the foundation of a society because healthy children grow to become healthy and strong adults who can actively participate in the developmental activities of a nation [9]. Dental caries is a disease which causes a progressive disintegrating of the inorganic and structure of the teeth. The disease starts on the tooth surface and unless checked properly involves the enamel, dentin and vital structure of the dental pulp [10].

Methods

The research approach adopted in the present study was evaluative approach, and research design was one group pre test and post test design which belongs to pre-experimental design. Purposive Non random sampling technique was used to select the school i.e. Government Elementary school sohana mohali. The sample size was of 60 school children's age between 8 to 14 years. The tool consists of 30 items regarding dental caries. The items was closed ended questions especially of multiple choice questions. The total score was 30. Each correct response carried out with one mark. The pilot study revealed the feasibility of the study. Reliability of the tool was determined by the test retest method. By using Karl Pearson's co-efficient of co relation method "r" value is obtained. $[r^1=0.90]$. It shows that the tool was highly reliable for the final study.

Data were collected by using structured interview schedule through multiple choice questions and structured teaching programme was intervened, again after a gap of seven days post test was conducted with the same tool. Analysis of the data was done using descriptive statistics as mean, standard deviation and inferential statistics as paired' test and Chi-square test.

Results

The analysis and interpretation of data have been organized and presented under the following section (Table 1).

Table 1: Frequency and percentage distribution of children by their socio demographic variables. n=60

Demographic variables.		Frequency	Percentage
Age in years	8-11	33	55.0
	12-14	27	45.0
Gender	Male	28	46.7
	Female	32	53.3
Religion	Hindu	39	65.0
	Muslim	6	10.0
	Sikh	13	21.7
	Christian	2	3.3
	Others	0	0.0
Mother's education	No formal education	38	63.3
	Primary	5	8.3
	10 th	13	21.7
	10+2	4	6.7
Mother's Occupation	Graduate and above	0	0.0
	Govt. Job	11	18.3
	Private job	6	10.0
	House wife	41	68.3
Father's education	Others	2	3.3
	No formal education	21	35.0
	Primary	10	16.7
	10 th	26	43.3
	10+2	3	5.0
Father's occupation	Graduate and above	0	0.0
	Govt. Job	12	20.0
	Private job	14	23.3
	Agriculture	14	23.3
	Business	6	10.0
Family income per month in rupees	Others	14	23.3
	Below 5000	11	18.3
	5001 to10000	28	46.7
	10001 to 15000	5	8.3
More than 15000	16	26.7	

Type of family	Nuclear	21	35.0
	Joint	29	48.3
	Extended	10	16.7
Previous experience of dental caries	Yes	14	23.3
	No	46	76.7
Source of information about dental caries	Family & relatives	21	35.0
	Friends & Peers	1	1.7
	Books & Newspaper	7	11.7
	Internet, Radio, Mass media, T. V.	26	43.3
	Others	5	8.3

- Revealed that majority (55%) of children were in age group 8-11 years, followed by age group of 12-14 years (45%).
- Majority of the sample are found to be females (53%) and followed by males (47%).
- Religion wise distribution of samples shows that 65% of children are Hindu, followed by, Sikh children 22% followed by 10% Muslim children, which is followed by 3% are Christian.
- Education wise distribution of samples shows that 63% of mothers have no formal education, 8% have completed primary, 22% have completed matric education, 7% have completed higher secondary education.
- Majority of the mothers of children found as a house wives (68%) followed by government employee (18%), private employee (10%), others (3%).
- Father's education wise distribution of samples shows that 43.3% of fathers have completed their education till matric, followed by no formal education (35%), 17% have completed primary education, 5% have completed higher secondary education.

- 20% of fathers of children found as a govt. employees, 23% are doing private job, 23% are farmers, 10% are businessmen, and 23% are under other occupation.
- Majority of children have family monthly income of Rs 5001-10,000/- (47%), followed by Rs less than 5000 (18%) Rs 10,001-15000/- are (8%), More than 15000 are (27%). 48.3% of families of children are joint family, 35% are nuclear families, 16.7% are extended type of family.
- 76.7% of children do not have previous experience of dental caries, 23.3% have previous experience of dental caries.
- Majority of school have source of information on dental caries as a internet, radio, mass media (43.3%), followed by family and relatives (35%), books and newspaper (11.7%), friends/peer group (1.7%), and others (8.3%).

Tables 2 describe that the percentage distribution of scores reveals that in Pre test 55% children have the Low knowledge, 27% children have Average knowledge and no single informant had high knowledge. The score of post test indicated marked increase in knowledge levels of children that is 16.7% Average knowledge, 83.3% high knowledge and it was also interesting to know that no single respondent in post test obtained low knowledge.

Table 3 describes that the pre test mean score was 13.5 (S.D =2.487) and in post test it was 26.02 (S.D =3.417). The mean post test knowledge score were higher than the mean pretest scores which indicated an improvement in the knowledge level of the respondents after structured teaching programme.

Table 2: Frequency and percentage distribution of overall level of knowledge of children regarding dental caries in pretest and posttest.

Level of knowledge	PRE		POST	
	Frequency	Percentage	Frequency	Percentage
Low score (1-14)	33	55	0	0
Average score (15-22)	27	45	10	16.7
High score (23-30)	0	0	50	83.3

Table 3: Mean and Standard Deviation of pre test and post test knowledge scores regarding prevention of dental caries among children

	Pre test		Post test	
	Mean	SD	Mean	SD
Knowledge regarding prevention of dental caries	13.5	2.487	26.02	3.417

Table 4: Comparison of knowledge scores of children before and after Structured Teaching Programme regarding prevention of dental caries

	Mean difference	SD difference	Paired T-test
Knowledge of dental caries	12.52	3.233	29.982**

Table 5: Association between socio demographic variables of children with their post test knowledge scores regarding dental caries

Variables	Calculated χ^2 value	P Value	Degree of freedom	Table Value	Association
Age in year	0.485	0.486	1	3.841	NS
Sex	0.335	0.563	1	3.841	NS
Religion	0.831	0.842	3	7.815	NS
Mother's Education	1.078	0.782	3	7.815	NS
Mother's Occupation	3.813	0.282	3	7.815	NS
Father's Education	1.129	0.770	3	7.815	NS
Father's Occupation	3.228	0.520	4	9.488	NS
Family income per month	0.573	0.903	3	7.815	NS
Type of family	1.538	1.463	2	5.991	NS
Previous experience of dental caries	0.019	0.891	1	3.841	NS
Source of information about dental caries	3.464	0.063	1	3.841	NS

NS- Not Significant

Table 4 describes that Mean difference of (12.52), SD=3.233 of overall knowledge with paired 't' value (29.982). Thus it reveals that the mean post test knowledge scores was significantly higher than the mean pre test knowledge scores of children, 't'=(29.982), $p < 0.05$. Thus the research hypothesis (H_1) was accepted. It shows that there is a significant difference between pre test and post test knowledge scores of children.

Table 5 describes that there is no significant relationship between age, sex, religion, Mother's education, Mother's occupation, Father's education, Father's occupation, Family monthly income, Type of family, Previous experience of dental caries, sources of information about dental caries with post test knowledge test scores of children with prevention of dental caries. Therefore the research hypothesis (H_2) has been rejected.

Discussion

Treatment, Prevention and Control might be difficult in the absence of appropriate knowledge. There is an immediate need of the research on dental caries to appropriate, adequate knowledge regarding prevention of dental caries among children.

The pre test mean score was 13.5 (S.D=2.487) and post test it was 29.02 (S.D=3.417) which indicated an improvement in the knowledge level of the respondents after structured teaching programme.

Paired 't' value was computed to evaluate the structured teaching programme on prevention of dental caries. The obtained value was (29.982) in School. The table value of 't' at 0.05 level of significance and 59 degree of freedom was 2. Which was less than the calculated value of 't' test. Thus the research hypothesis (H_1) was accepted. It clearly denoted that structured teaching programme was effective in improving knowledge of children regarding prevention of dental caries.

Chi square test was performed to determine the association between selected socio demographic variables and post test knowledge scores of the sample. In this study there was no significant association between the demographic variables such as Age, Sex, Religion, Mother's Education, Mother's Occupation, Father's education, Father's Occupation, Family income per month in rupees, type of family, Previous experience of dental caries, Source of information about dental caries. Hence the hypothesis H_2 has been rejected.

Conclusion

The conclusion of the study regarding knowledge of the pre test mean score was 13.5 (S.D =2.847) and in post test it was 29.02 (S.D =3.417) which indicated an improvement in the knowledge level of the respondents after structured teaching programme. Thus it reveals that the mean post test knowledge scores were significantly higher than

the mean pre test knowledge scores of children regarding prevention of dental caries. Thus the research hypothesis (H_1) was accepted. It shows that there is a significant difference between pre test and post test knowledge scores of children. Chi square result showed that there was no significant association between the demographic variables such as Age, Sex, Religion, Mother's Education, Mother's Occupation, Father's education, Father's Occupation, Family income per month in rupees, type of family, Previous experience of dental caries, Source of information about dental caries. Hence the hypothesis H_2 has been rejected.

Conflict of Interest

The authors declare that they have no conflicts of interest.

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