

TEACHER LED SESSION VS PROFESSIONAL HEALTH EDUCATION SESSION IN IMPROVING KNOWLEDGE AMONG SCHOOL CHILDREN

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Abstract

Background: Oral hygiene practices are not taught as meticulously as general hygiene in schools. There is a dire need for effective and convenient oral health education programs in schools. **Aim:** To assess the effectiveness of two different health education interventions in 10 year old school children in primary government school in Ayanambakkam. **Methods and materials:** A field trial was conducted in which the students were allotted to Group A (received oral health education from the dental profession; n = 33) and Group B (received oral health education from a class teacher, trained by a dental professional; n = 30). An adopted version of the World Health Organization - Oral Health Questionnaire for children was administered to the participants at the end of the study to assess the oral health knowledge and practice. **Result:** There was a significant increase in knowledge score post intervention for both groups however only group B showed significant improvement in practice. **Conclusion:** Oral health education conducted by the dentist was found to be more effective than that given by a trained teacher.

Keywords: Oral health education program, oral hygiene, school children, WHO - Oral Health Questionnaire for Children

INTRODUCTION

One of the crucial areas of public health that has a significant effect on people's health is oral hygiene (1,2). The World Health Organization (WHO) views oral health as essential and a component of overall health throughout life, noting that untreated oral diseases and poor oral health can significantly lower quality of life (3).

Tooth decay, one of the most prevalent chronic illnesses of the mouth, is a serious health issue in the majority of developed and developing nations alike (4,5). Despite the significance of maintaining good oral and dental health in children and adolescents, dental caries among them continues to be common (6).

Oral conditions can result in permanent harm and effects like pain, sadness, low self-esteem, poor quality of life, acute and chronic infections, and more. Additionally, oral and dental conditions can limit a person's ability to engage in activities at home, at work, or in school, leading to the death of millions of people each year (7). The DMFT (the number of filled, rotting, or pulled teeth) should be less than one, according to one of the World Health Organization's objectives for oral health (8,9).

Whether it takes place in the "classroom" of a university, a hospital, or a community "clinical environment," a small group teaching session that is well designed offers a systematic approach for both teachers and learners. When compared to didactic lectures, effective small group teaching and learning techniques boost participation,

information retention, self-directed learning, communication skills, teamwork aptitude, and peer discussion (10). As a result, small group instruction in the fields of medicine and health has gained popularity (11).

It is commonly known that habits formed early in life are more likely to be maintained over time. Children are the ideal target demographic to develop good oral hygiene habits due to their receptive brains (6). Due to high absence rates brought on by poor oral health, the need for effective and convenient oral health teaching programmes in schools is critical today. Poor dental health is thought to result in the annual loss of more than 50 million school hours (12,13).

It has been claimed that schools are the best setting for delivering this oral health education because they are thought to reach more than one billion youngsters worldwide. The Global School Health Initiative was started by the World Health Organization (WHO) in 1995 and is based on the principles of the Ottawa Charter for Health Education and the recommendations of the Expert Committee on Comprehension School Health Education and Promotion (14). It attempts to improve school-based health promotion and education initiatives. Building through education is one of the main tactics used in this endeavour. Building advocacy skills for better school health programmes is one of the initiative's main initiatives (15,16).

Those with a natural aptitude for teaching, such as school teachers, can meet the demand for fresh resource people to serve as the health educators (17). There are several benefits to having a teacher present oral health education; for example, children are more likely to feel comfortable getting instructions from a teacher than from an outsider, interaction is better, and it is simpler for instructors to reiterate the lesson at regular intervals (18).

Therefore, it will be beneficial to train instructors in oral hygiene practices and oral health education delivery so that they can take the initiative and teach their students the same. However, it is crucial to determine whether the teacher-led oral health education intervention is likely to have the same impact as dental care before implementing large-scale teacher training programmes.

The purpose of this study was to compare how well two separate health education sessions—one conducted by a teacher and the other by a professional—performed in increasing students' awareness of health issues.

MATERIALS AND METHODS

From July 2022 to September 2022 we conducted a randomized controlled trial to compare the effectiveness of teacher-led and professional-led oral health education in Chennai district. Trial was approved by Institutional review board, Saveetha university. Two stage random sampling methods were used for sampling. Two government high schools of North Zone-II from Chennai city were selected as the place of study to collect data. 82 school children of 12-15 years of age were included in the study from two randomly selected schools. Government schools were included in the study since we obtained permission from the block educational officer, Chennai district prior to the start of the study. Informed consent was obtained from each student's parents and also headmaster of each school in written format. Anonymity of the participants will be maintained and the need of the study was clearly explained both to the parents and their teachers before the start of the study.

G power software was used to calculate the sample size with α error as 0.05 and Power (1- β err prob) as 0.80 and the achieved sample size is 82(group 1 =41 and group 2= 41).

Group 1- Teacher led oral health education

Group 2 - Professional(Dentist) led oral health education

Physically and mentally challenged children, children with systemic disease and children undergoing orthodontic treatment were excluded. Before the start of the study two post graduates were selected from the department of Public Health Dentistry and calibrated to ensure uniform interpretation(KAPPA VALUE 0.80).

A structured questionnaire was made and face validity and content validity was done by two experts. Questionnaire consists of three parts such as part 1 consists of demographic characteristics and part 2 consists of 12 questions which assess the oral health knowledge of the participants. Part 3 consists of clinical assessment such as Plaque Index (PI) (Silness And Loe 1964) and Gingival Index (GI) (Loe And Silness 1963).

Group 1 allocated students were given health education by school teachers with chalk talk method and group 2 allocated students received their oral health education with teeth model and videos of brushing by professional (Dentist). Duration of oral health education was 20 minutes and 3 sessions were conducted (repetition to instill in children's minds). Before oral health education baseline data was collected from the school students and after oral health education post-education data was also collected from both the groups.

Data analysis was conducted using SPSS software(Statistical Packages for Social Sciences) Version 23.0. Descriptive statistics (Mean, standard deviation) and chi-square (demographic variables) were used. Normality tests like shapiro-wilks were used. When the data is normally distributed, independent t test was done for between group analysis and paired t test for within group analysis. The significance level was set at $p < 0.05$.

RESULTS

Table 1: Demographic data of the study participants within group

	Teacher led (n%)	Professional led(n%)	P value
Age			
12 years	15(18.2%)	15(18.2%)	0.02*
13 years	15(18.2%)	15(18.2%)	
14 years	11(13.4%)	11(13.4%)	
Gender			
Male	20(24.3%)	20(24.3%)	0.434
Female	21(25.5%)	21(25.5%)	
Father's educational level			
Under middle school	10(12.1%)	12(14.6%)	0.03*
Completed higher secondary schools	21(25.6%)	22(26.8%)	
Diploma/graduate	10(12.1%)	7(8.5%)	

* $p < 0.05$ considered significant

Table 2: Responses obtained for knowledge questions

Questions	Teacher led(n)		Professional led(n)		P value
	Correct	Incorrect	Correct	Incorrect	
Brushing prevents gum problems	38	3	36	5	0.67
Flossing prevents gum problems	24	17	25	16	0.78
Self-care is not related to oral health	23	18	19	22	0.05*
Oral hygiene instructions do not improve oral health	21	20	16	25	0.04*
Gum bleeding while brushing is a sign of early-stage inflammation	20	19	16	25	0.05*
Gingival and periodontal problems may lead to bone loss	18	23	20	21	0.345
Oral diseases may cause systemic problems	16	25	17	24	0.234
Fluoride has positive effect on oral health	17	24	15	26	0.112
Oral hygiene prevents halitosis	38	3	34	7	0.564
Plaque is a hard material	8	33	12	29	0.612
Knowledge about calculus	14	27	15	26	0.786
Dental calculus can be removed at home by brushing and flossing	32	9	29	12	0.05*

*p<0.05 considered significant

Table 3: Comparison of mean knowledge scores between the groups at pre and post oral health education

	Teacher led	Professional led	P value (Independent t test)
Total knowledge score mean (SD)-PRE-EDUCATION	7.8(2.5)	7.6(1.8)	0.342
Total knowledge score mean (SD)-POST- EDUCATION	8.1(1.9)	8.9(2.2)	0.04*
P VALUE(paired t test)	0.456	0.003*	

*p<0.05 considered significant

Table 4: Comparison of mean gingival scores between the groups at pre and post oral health education

Mean gingival index scores	Teacher led	Professional led	P value(Independent t test)
	Mean(SD)	Mean(SD)	
Pre-oral health education	1.11(0.67)	1.17(0.23)	0.565
Post oral health education	0.86(0.67)	0.77(0.45)	0.04*
P value (paired t test)	0.000*	0.03*	

*p<0.05 considered significant

Table 5: Comparison of mean plaque scores between the groups at pre and post oral health education

Mean plaque index scores	Teacher led	Professional led	P value (Independent t test)
	Mean(SD)	Mean(SD)	
Pre-oral health education	1.56(0.89)	1.52(0.45)	0.432
Post oral health education	1.23(0.47)	1.19(0.34)	0.564
P value (paired t test)	0.03*	0.04*	

*p<0.05 considered significant

DISCUSSION

Different public communication strategies like developing social influence campaigns are used for promoting beneficial health related changes in a mass population. (19) Basic oral health surveys provide a sound basis for assessing the current oral health status of a population and its future needs for oral health care. (20) This study looked into the efficiency of oral health instruction given to 10-year-olds by a teacher and a dentist. This age range was chosen because it is one of the WHO's index age ranges, and it also suited the study's goal of focusing on kids whose habits, beliefs, skills, and attitudes are developing during a critical time in their lives and are more likely to persist. There was only one school chosen for each intervention group since it is possible that adding additional schools might have muddied the results due to the diverse teaching styles used by each institution. The results of the teacher-led group and the dentist-led group in this study differed statistically significantly.

A cluster randomized controlled trial with 935 adolescents aged 10 to 11 years was done in a prior study by Abdul Harlem et al. Three groups of children were chosen at random to receive OHE from the dentist (DL), teachers (TL), and peer leaders (PL). Following a single OHE session, the groups were assessed both immediately after the intervention and six months later. After exposing the three groups to OHE for six months, there was no OHE activity for a year. At 6-month and 12-month intervals, two more evaluations were carried out. A self-administered questionnaire, a structured interview, and an oral examination of the participants were used to gather the data. When compared to their baseline knowledge, the teenagers' oral health knowledge (OHK) in the DL and PL groups considerably increased after just one OHE session ($p < 0.05$), however there was no discernible change in their behavior towards oral cancer prevention. Adolescents' OHK and OHB did not improve after a single teacher-led OHE. Following a single OHE, there was no statistically significant change in the participants' oral hygiene status (OHS) in any of the three groups. Six months after the RR-OHE, the OHK, OHB, and OHS indices all saw significant increases. Although the OHK scores of the DL and PL groups significantly declined at the 12-month RR-OHE evaluation ($p < 0.05$), the TL group's OHK score increased over this time, and the OHB and OHS scores of all three groups remained statistically constant. Regardless of the educators, repetition and reinforcement are crucial components of school-based OHE. Peers and qualified teachers can complement each other in RR-OHE. (21) 12,000 kids between the ages of 5-8 were involved in a prior study by A M Grimoud et al. to teach kids how to manage their daily dental hygiene. The team also created a website with information on oral hygiene, caries, and their treatment, as well as backup materials like posters, booklets, and stickers. Teachers and other educational partners received posters to help the kids get ready. The partners conducted a survey to determine how the campaign affected instructors, students, and dental students. (22)

Jolanta Aleksejuniene et al. previously conducted a controlled, non-randomized interventional trial to assess the efficacy of peer-led preventive oral health education for elementary school-aged children ($N = 372$) in grades 4 to 6. Three schools in the control group attended a class-based oral health lecture. Each sixth grader mentored a small group of fourth and fifth graders in the intervention group (3 schools). Baseline and 8–12 month comparisons between study groups were conducted. Little progress was made in the intervention group's dietary knowledge. There was a significant range in OSC-P and OSC-S between research groups and age groups. Overall, children performed significantly better on the OSC-P than the OSC-S. Both groups' oral self-

care outcomes improved with time, although the intervention group's improvement was more noticeable. The mean OSC-P increased by 5.9% in the control group and 11.9% in the intervention group from the beginning of the trial to the end. The OSC-S improvement values were 12.8% and 5.2%. (23) Studies have already demonstrated the efficacy of wellness initiatives delivered by peer support specialists (PSS), according to Adrienne Lapidos et al. A multidisciplinary team developed oral health education resources and a health education strategy together, and they then put them into practise at three drop-in locations administered by PSS and one community mental health centre. PSSs offered health education and connected clients to dental services. Evaluation of the programme (N=41 respondents) revealed the acceptability, viability, and sustainability of the strategy. (24) The tooth bud programme (TBP), a student-led, close-peer mentorship programme at a university with a focus on research, was the subject of a qualitative study by Lauren Dudley in the past. Participants' thoughts on the TBP were reflected in three themes: First, despite having to deal with ingrained hierarchies, students wanted to create a community. Second, while participants recognised that the TBP was a student-led effort, they also recognised that its informal and unstructured nature presented difficulties. The third step was identifying mentoring experiences and how mentors and mentees managed their relationships. The research's findings were that the peer mentoring programme benefits both mentees and mentors and enables participants to gain from joining a student-led, professional community. (25)

The effectiveness of an oral health education (OHE) intervention on oral hygiene knowledge, attitude, and practises (KAP), plaque management, and gingival health was examined by Krishna Subedi et al in a randomised controlled study with 120 schoolchildren aged 12 to 15 in each group. OHE was administered to the experimental group at the beginning of the trial, at three and six months, and to the control group at the end. A 23-item questionnaire was used to interview the subjects and evaluate their oral hygiene KAP. Correct answers received a score of 1, while incorrect ones received a score of 0. The separate scores were then added together to provide an overall composite score. For categorical data, the chi-square test was used, while for quantitative data, the independent t test, Mann-Whitney U test, repeated measures ANOVA, and post hoc Tukey's test were used. The significance threshold was established at P 0.05. At the end of the study, there was no improvement in the control group's oral hygiene KAP, but there was a 54.58% improvement in the experimental group (P = 0.001). The study found that oral health education was successful in enhancing gingival health, plaque control, and KAP for oral hygiene. (26)

LIMITATIONS AND RECOMMENDATIONS

This study has several restrictions. In this study, comparisons were only made between the dentist-led and teacher-led groups; additional groups, such as peer-led or self-learning groups, might be added to gather more data and determine the most effective way to teach school children about dental health. The study's teacher received a single oral health education training session. The teacher must be well-versed in the subject matter in order to successfully provide oral health education to their students. Teachers must therefore receive training in educating students about oral health because they have the most power to shape their thinking. The teacher preparation programme should include oral health education.

CONCLUSION

The study comes to the conclusion that successful teacher training programmes in oral health education may hold the key to improving school children's oral health.

Ethical Approval

Ethical approval was obtained to conduct this study from the Institutional Review Board of the Dental Institute.

Conflicts Of Interest

There are no conflicts of interest.

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