International Journal of Nursing and Health Research
www.nursingjournal.in
Online ISSN: 2664-6420, Print ISSN: 2664-6412
Received: 08-03-2024, Accepted: 18-04-2024, Published: 01-05-2024
Volume 6, Issue 1, 2024, Page No. 27-31

Effectiveness of child to child approach on knowledge regarding practices of oral hygiene among the children of selected school at Mangaluru

Lora Sofia Pais[1*], Sunitha Lobo[2]
[1] Department of Community Health Nursing, Athena College of Nursing, Mangalore, Karnataka, India
[2] Professor, Department of Community Health Nursing, Athena College of Nursing, Mangalore, Karnataka, India

Abstract
Introduction: The mouth is the gateway to good health but it is also the gateway to disease. Oral hygiene is one of the fundamental hygiene requirements, which should be performed from an early age. Health is a component of education, and numerous facets of health, such as diet, hygiene, exercise, etc., which must be covered in school curricula. The topics of mouth hygiene might be included in the school health curriculum. A new, simple, affordable, and interactive method of teaching children about health is known as the child-to-child approach, and it maximizes the young generation's motivation in spreading knowledge about health. This might facilitate the dissemination of information to families, the community, and other kids.
Objectives: To assess the knowledge of school children before and after the child to child approach regarding practices of oral hygiene as measured by structured knowledge questionnaire. To find the effectiveness of child to child approach on knowledge regarding practices of oral hygiene in terms of gain in mean post-test knowledge scores. To find the association of the pre-test knowledge score with selected baseline variables (age, sex, education of parents, present oral hygiene practices, attitude on oral hygiene and source of information)
Methodology: For the study, a pre-experimental one-group pre-test and post-test design was used. The samples were chosen using a simple random sampling method. In addition to these samples, 12 students were selected to function as the change agents and received oral hygiene instruction from the investigator. The gathered data was examined and analysed with the help of descriptive and inferential statistics.
Results: To determine the effectiveness of child-to-child approach in terms of gain in knowledge score on practices of oral hygiene, the data was analyzed using descriptive and inferential statistics. The findings revealed that there was a significant difference between the mean pre-test knowledge score (10.95) and mean post-test knowledge score (22.87) of study samples. The mean difference between post-test and pretest knowledge score was highly significant. The obtained value (27.235) was higher than the table value (t_{63}= 1.998), indicating that the child-to-child interaction was effective in improving the knowledge of students. There was no significant association between pre-test score and the baseline variables like age, sex, education of parents, current practices, and attitude on oral hygiene and source of information.
Conclusion: Findings of the study revealed that child-to-child approach was effective in improving the knowledge of students and it is evident from gain in mean post-test knowledge score. Child-to-child approach of teaching is cost effective and can be used in schools to impart knowledge.

Keywords: Child-to-child approach; practices of oral hygiene; primary school children

Introduction

The hygiene of mouth is the essential part of comprehensive health. Oral cavity has an important role in mastication, phonics, communication and emotional expression [1]. A person's whole health and quality of life depend on their oral health, which is defined by the American Dental Association as a functional, structural, cosmetic, physiologic, and psychosocial state of wellness [2].

Lack of oral hygiene can lead to issues like dental cavities and periodontitis; and it's also strongly associated with diseases like diabetes, cancer, and heart disease. Children are especially susceptible to oral illnesses and defects. One of the most important public health issues with a big social impact is oral health issues. Around 60–90% of kids worldwide are thought to have dental caries, which causes them pain and discomfort [3]. The negative effects and burden of oral illnesses limit activities in homes and schools, prevent many potential working hours from being used, and result in the loss of more than 51 million school hours globally, respectively [4].

Children are a priceless gift and are viewed as a future resource. Children who are healthy today will grow up to be healthy adults in the future, and healthy children always produce healthy generations. The adage "Nation marches on the tiny feet of young children" has a deep and profound truth to it. Children are the center of Child-to-Child (CtC) method of community development and health promotion. It is based on the firm conviction that the younger generation can play a significant role in improving their neighbourhood and the society in which they live. Child-to-Child (CtC) activities involve, inspire, and strengthen children through a variety of activities. This method encourages children to take an active role in the development of their families, communities, younger siblings, and themselves [5]. It was created as a way for schoolchildren to educate their peers

and younger siblings on the fundamentals of good health. In more than 70 nations around the world, there have reportedly been more than 250 Child-to-Child (CtC) projects [6]. Child-to-Child (CtC) programs were initially developed for children in the world's poorest nations and focused on primary health care issues. But by the early 1990s, Manchester, UK—and, more recently, London—had adapted and implemented Child-to-Child (CtC) projects as a result of understanding the adaptability and suitability of the method for children's in diverse situations [6]. This is known that young children are profoundly influenced by other children, particularly older siblings, playmates, or those with whom they interact frequently, in addition to their primary caregivers. The education systems can capitalize on this occurrence to systematically affect school preparedness and on-time entry by involving older primary school pupils [7].

Objectives of the Study

1. To assess the knowledge of school children before and after the child to child approach regarding practices of oral hygiene as measured by structured knowledge questionnaire.
2. To find the effectiveness of child to child approach on knowledge regarding practices of oral hygiene in terms of gain in mean post-test knowledge scores.
3. To find the association of the pre-test knowledge score with the selected baseline variables (age, sex, education of parents, present oral hygiene practices etc.)

Methodology

For the present study, a pre-experimental one-group pre-test and post-test design was used. The informed consent was taken from the parents. Sixty four (64) students from third to sixth grade (16 kids from each class) made up the sample. The samples were chosen using a simple random sampling method. In addition to these samples, 12 students were selected to function as the change agents and received oral hygiene instruction from the investigator. Information was acquired from the study samples using the structured knowledge questionnaire on practices of oral hygiene. The change agents were permitted to interact with the study samples on oral hygiene practices, in the presence of the investigator. After seven days, a post-test was performed on the study samples using the same structured knowledge questionnaire. The gathered data was examined and analysed with the help of descriptive and inferential statistics.

Result

Section I: Description of selected baseline variable

Table 1: Distribution of samples according to baseline variables N= 64

Sl. No	Demographic variables	Frequency	Percentage
1	Age in years		
	a) 8 years	16	25.0
	b) 9 years	16	25.0
	c) 10 years	16	25.0
	d) 11 years	16	25.0
2	Gender		
	Male	31	48.4
	Female	33	51.6
3	Education of Father		
	No formal education		
	Primary education	38	59.4
	Secondary education	24	37.5
	Graduation and above	2	3.1
4	Education of Mother		
	No formal education	7	10.9
	Primary education	42	65.6
	Secondary education	12	18.8
	Graduation and above	3	4.7
5	Brush per day		
	Once	10	15.6
	Twice	51	79.7
	After every meal	1	1.6
	More than twice	2	3.1
6	Time taken for brush teeth		
	About 1 minute	5	7.8
	About 2 minute	33	51.6
	More than 2 minute	20	31.3
	Do not know	6	9.4
7	Feel oral hygiene is important		
	Yes	61	95.3
	No	2	3.1
	Not sure	1	1.6
8	Information		
	Parents	50	78.1
	Teachers	12	18.8
	Others	2	3.1

Section II: Assessment of knowledge regarding practices of oral hygiene

Table 2: Distribution of samples according to level of knowledge regarding practices of oral hygiene among the children N= 64

Grading	Level of Knowledge	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
Poor	<10	20	31.2		
Average	10-14	36	56.3	1	1.6
Good	15-19	8	12.5	2	3.2
Excellent	20-25			61	95.2

Maximum score = 25

It is evident in the data presented in table 2 that in the pre test 56.35% of samples had average knowledge, 31.2% had poor knowledge, very few samples (12.5%) had good knowledge and none of the samples had excellent knowledge. In the post test most of them gained excellent knowledge (95.2%), few (3.2%) had good knowledge, very few (1.6%) had average knowledge and none of them had poor knowledge.

Table 3: Range, mean, standard deviation, median and mean percentage of knowledge regarding practices of oral hygiene among the children N=64

Time	Range	Mean	Standard deviation	Median	Mean percentage
Pre-test	5-18	10.95	3.05	10.5	42.0
Post-test	14-25	22.87	2.13	23.0	91.5

Maximum score=25

Data presented in table 3 shows that in pre test mean score was 10.95%± 3.05 and in the post test mean score was 22.87%± 2.13.

Section III: Effectiveness of child to child approach on knowledge regarding practices of oral hygiene in posttest knowledge

Paired't' test was used in order to test the effectiveness of child to child approach on knowledge regarding practices of oral hygiene. To test the statistical significance the following null hypothesis was formulated.

H_0: There will be no significant difference in the mean pre-test and post-test knowledge score of samples regarding practices of oral hygiene.

Table 4: Mean, standard deviation, mean difference, t value and p value of knowledge regarding practices of oral hygiene among the children N=64

Time	Mean	SD	Mean difference	t value
Pre-test	10.95	3.05	11.92	27.235*
Post-test	22.87	2.13		

t_{63}= 1.998

*Significant, p<0.001 level

Data presented in table 4 shows that the obtained value (t=27.23) is higher than the table value (t_{63}= 1.998, p<0.001). Therefore the null hypothesis is rejected and research hypothesis is accepted. It can be inferred that child to child approach was effective on improving the knowledge regarding practices of oral hygiene.

Section IV: Association of mean pre-test score with selected baseline variables

This section deals with the association of pre-test mean knowledge score with selected baseline variables. To find out the association Chi-Square test was used. To test the statistical association a null hypothesis was formulated:

H_{01}: there will be no significant association of pre-test mean knowledge score with the selected baseline variables.

Table 5: Association of knowledge regarding practices of oral hygiene among the children with their selected demographic variables N= 64

Sl. No	Demographic variables	Knowledge score		Total	χ^2 test
		≤Median (≤10.5)	>Median (>10.5)		
1	Age in years				
	a)8 years	12	4	16	χ^2=7.500, p=0.058(NS)
	b) 9 years	6	10	16	
	c) 10 years	9	7	16	
	d) 11years	5	11	16	
2	Gender				χ^2=0.563, p=0.453(NS)
	Male	17	14	31	
	Female	15	18	33	
3	Education of Father				
	No formal education				χ^2=2.105, p=0.349(NS)
	Primary education	18	20	38	
	Secondary education	12	12	24	
	Graduation and above	2	0	2	

4	Education of Mother				χ^2=5.143, p=0.162(NS)
	No formal education	5	2	7	
	Primary education	18	24	42	
	Secondary education	6	6	12	
	Graduation and above	3	0	3	
5	Brush per day				χ^2=2.776, p=0.427(NS)
	Once	7	3	10	
	Twice	24	27	51	
	After every meal	0	1	1	
	More than twice	1	1	2	
6	Time taken for brush teeth				χ^2=3.224, p=0.358(NS)
	About 1 minute	1	4	5	
	About 2 minute	19	14	33	
	More than 2 minute	10	10	20	
	Do not know	2	4	6	
7	Feel oral hygiene is important				χ^2=1.016, p=0.602(NS)
	Yes	31	30	61	
	No	1	1	2	
	Not sure	0	1	1	
8	Information				χ^2=0.413, p=0.813(NS)
	Parents	26	24	50	
	Teachers	5	7	12	
	Others	1	1	2	

NS- Not Significant

It is evident from table 5 that there was no significant association of selected baseline variables like age, sex education of parents, attitude towards oral hygiene, present practices and source of information. The obtained values of all these were lower than the table value. Therefore null hypotheses was retained and research hypotheses was rejected.

Discussion

Section I: Description of selected baseline characteristics of subjects

1. In this study each category of age group (8,9,10 and 11 years) of samples constituted 25% of total sample size
2. The study revealed that 48.45 of samples were males and 51.6% were females
3. The study revealed that majority (59.4%) of fathers of the study samples had primary education, 37.5% had secondary education and 3.1% were graduates.
4. The study showed that 10.9% of mothers of study samples had no formal education, most (65.6%) of them had primary education, 18.8 had secondary education and 4.7 % were graduates.
5. The study showed that 15.6% of the samples brush their teeth once a day, majority of students (79.7%) brush their teeth twice a day, few number of students (1.6%) brush their teeth after every meal and 3.1% of samples brush their teeth more than twice a day.
6. Study revealed that 7.8% of samples take about 1 minute to brush their teeth, nearly half (51.6%) of samples take about 2 minutes, 31.3% take more than 2 minutes and 9.4% of samples do not know the duration taken for brushing teeth.
7. Study showed that majority 95.3% of samples feel that oral hygiene is important, 3.1% disagree with it and 1.6% are no sure about it.
8. Study showed that majority (78.1%) of samples received information on oral hygiene from their parents, 18.8% received it from teachers and remaining 3.1% from other sources like friends.

Section II: Assessment knowledge level of children on practices of oral hygiene

The findings of the present study showed that in the pre-test 56.35% of samples had average knowledge, 31.2% had poor knowledge, very few samples (12.5%) had good knowledge and none of the samples had excellent knowledge. The mean score of pre-test knowledge was 10.95. In the post test most of them gained excellent knowledge (95.2%), few (3.2%) had good knowledge, very few (1.6%) had average knowledge and none of them had poor knowledge. The mean score of post-test knowledge was 22.87 which was much higher than the pre-test mean score (10.95).

The similar findings were seen in study conducted to find out the effectiveness of child-to-child programme on prevention of worm infestation among primary school children. The findings showed that the pre-test scores ranged from 14-32 with mean 23.72 whereas the post-test scores ranged from 14-37 with mean post -test score 28.14. Mean difference 4.42 indicated apparently higher post-test knowledge scores. The findings showed that child-to-child program was effective in improving the knowledge of students [8].

Section III: Effectiveness of child to child approach

The findings of the present study showed a significant increase in the post test knowledge score. The computed 't' value (27.23) was higher than the table value (t_{63}= 1.998, p<0.001) at 0.05 level of significance. This showed that child to child approach is very effective in improving knowledge regarding the practices of oral hygiene.

These findings are consistent with findings of other studies like;

In a chosen school in Mangalore, a study was done to determine the efficacy of a child-to-child program to health education regarding good habits of television viewing among schoolchildren. According to the results, Group I's mean post-test score was 21.60+/-1.812 and Group II's was 24.27+/- 1. 172, with a mean difference of 2.27. Table value ' t'_{58} =1.67 was less than the calculated 't' value 4.98. This showed that teaching children to teach children was a highly

successful way to increase the understanding of children of school age about healthy television viewing habits [9]

Section IV: Association of the baseline variables with mean pre-test knowledge score

It was found that there was no significant association between mean pre-test knowledge score and other selected demographic variables like age, sex, and education of parents, previous practices of oral hygiene, attitude towards oral hygiene and source of knowledge.

The results were consistent with the Cross-sectional methodology utilised to assess the knowledge, attitude, and oral health care practises among 11 to 13-year-old children as well as the connection between these factors and the prevalence of dental caries in Mangalore. The study's sample included 494 men and 364 women. Even though men were 60% more likely than women to have high levels of knowledge, the difference was not statistically significant. Parents were cited as the key source of information on oral health by the majority of children (68.6%), followed by dentists (43.5%) and schools (13.5%). In this instance, television (10.7%), newspapers (8.9%), and friends (6.1%) all had less substantial effects [10].

Conclusion

Child-to-child approach had been evolved from the recognition of the role that older children play in looking after their younger siblings. The child-to-child approach helps to learn about health in active and meaningful ways. It helps to find out information and to take action for bettering their health. As messages spread, it is evident that the original concept and rationale for child-to-child approach has remained strong.

Conflicts of interest

None

References

1. Kumarajeewa RA, Jayarathne PG. Improving Children's Oral Hygiene Habits in Sri Lanka via Gamification. Asian J Manag Stud, 2022, 2(1).
2. Naseem S, Fatima SH, Ghazanfar H, Haq S, Khan NA, Mehmood M, Ghazanfar A. Oral hygiene practices and teeth cleaning techniques among medical students. Cureus, 2017, 9(7).
3. Mlenga F, Mumghamba EG. Oral hygiene practices, knowledge, and self-reported dental and gingival problems with rural-urban disparities among primary school children in Lilongwe, Malawi. Int J Dent,2021:2021:1-10.
4. Dixit PL, Shakya A, Shrestha M, Shrestha A. Dental caries prevalence, oral health knowledge and practice among indigenous Chepang school children of Nepal. BMC Oral Health, 2013, 13:1-5.
5. Haque SE, Rahman M, Itsuko K, Mutahara M, Kayako S, Tsutsumi A, *et al*. Effect of a school-based oral health education in preventing untreated dental caries and increasing knowledge, attitude, and practices among adolescents in Bangladesh. BMC Oral Health,2016:16(1):1-10.
6. Jupp M. The International Year of the Child: Ten Years Later. Proc Acad Polit Sci,1989:37(2):31-44.
7. Gibbs S, Mann G, Mathers N. Child-to-child: A practical guide. Empowering children as active citizens [Internet], 2002.
8. Leena KC. Effectiveness of child-to-child Approach to health education regarding worm infestation and its prevention among children of selected primary schools of Mangalore. Unpublished MSc Nursing dissertation, Rajiv Gandhi University of Health Sciences, Bangalore, 2002.
9. D'Souza S. Effectiveness of child-to-child approach to health education regarding healthy practices of television viewing among school-age children in a selected school at Mangalore. Unpublished MSc Nursing dissertation, Rajiv Gandhi University of Health Sciences, Bangalore, 2010.
10. Suprabha BS, Rao A, Shenoy R, Khanal S. Utility of knowledge, attitude, and practice survey, and prevalence of dental caries among 11-to 13-year-old children in an urban community in India. Glob Health Action,2013:6(1):20750.