THE EFFECT OF COOPERATIVE LEARNING HEALTH EDUCATION SKILLS FOR CORRECT TEETH BRUSHING BY GRADE 4 STUDENTS AT ANUBAN SAMUTSONGKHRAM SCHOOL

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Abstract- This quasi-experimental research, a one group pretest-posttest design, aimed to study the effects of Cooperative learning approach for skill to brush teeth properly. The sample consisted of 47 4th grade students at Anuban Samutsongkhram school. Data were collected before and after the intervention by using a evaluation form of brush teeth properly (Adapted from the Oral Hygiene Skill Achievement Index (S.A.I). Niedermann.R, and Sullivans, M.T.,1981). Descriptive statistics in regard to frequency, percentage, arithmetic mean, and standard deviation were used to describe the general data of the samples. Analytical statistics in regard to paired samples t-tests was employed for testing research hypotheses. The research results showed that after the intervention there was a significantly higher mean score of skill to brush teeth properly. When compared to before the experimentation ($p<0.05$). These finding showed that Cooperative learning approach was effective in enhancing to skill to brush teeth properly for students. The recommendation is that the teaching method should be applied for developing health education learning and other subject's that are related to health.

Key words - Cooperative Learning , Skill To Brush Teeth Properly

I. INTRODUCTION

Oral health improves the quality of life for children. Tooth decay causes pain and early loss of teeth renders eating difficult and may hinder growth. Children aged 6 to 7 may lack self-confidence in all aspects of dental health when their primary teeth fall out, and between 6 and 12 years when their permanent teeth are growing and developing. The incidence of dental caries at these age scan be a predictor of adult oral disease and used to compare the severity of dental decay in different countries [1]. A recent national oral health survey conducted by the Bureau of Public Health, the Department of Health in 2013 found that 52.3%ofchildren aged 12 had tooth decay[2]. In Samut Songkhram Province,92 primary schools within city districts recorded 49.9% of children aged12 with dental caries [3]. Oral health care for children should be promoted to raise awareness of the problems of dental decay, with daily teeth brushing instilled as a habit at an early age to reduce dental disease. The teaching styles suitable for young children were studied. One interesting learning style is cooperative learning as the instructional use of small groups. Children have different learning abilities and can support each other and exchange ideas within a small group, sharing responsibility both at personal and collective levels to achieve the set goals [4]. Group learning is also an instructional style that fits in with modern education, focusing on active, hands-on teaching. For learners at a young age, this is an ideal teaching method to instill good habits, especially in the field of dental health [5]. The researcher taught health education to cooperative forms of grade 4 students at Anunban Samutsongkhram School. Fourth-grade pupils are inquisitive and keen to learn new ideas which they remember and apply in daily life. Good dental instruction at an early age will help to reduce oral health problems and improve national survey statistics regarding the dental health of 12-year-old pupils.

II. RESEARCH OBJECTIVES AND HYPOTHESIS

2.1) Research Objectives: to compare scores for skillful brushing of teeth in grade 4 students before and after the experiment.

2.2) Research Hypothesis: after health education using the Cooperative learning model , the experimental group recorded higher scores for skillful brushing of teeth.

III. RESEARCH METHOD

This quasi-experimental research was studied using a pre-and post-test for 47grade 4 students.
3.1) The experimental group : was grade 4 students at Anunban Samutsongkhram School. Simple random sampling was followed to select one of the five class rooms. The sample group consisted of 47 students.
3.2) The tools used in the research were divided into two types: experimental instruments and tools used to collect data.

3.2.1) The instruments consisted of the health education lesson plan with a cooperative learning model as 2 lessons. The first covered oral health knowledge and the second concerned' How to Brush Your Teeth Properly'. Each lesson plan was based on

the 7-step cooperative learning process. Step 1: Tell your friends about your experiences. Step 2: Focus on your friend's story. Step 3: Compare experiences. Step 4: Participate in the selection of the presenter. Step 5: Pay attention to the instructor. Step 6: Participate in the teaching activities with the facilitator. Step 7: Teaching and learning cooperative activities within the group.

3.2.2) The data collection tool was a method for assessing proper brushing skills. To evaluate the students , the researcher observed and recorded 16 teeth, 2 parts of bulges of the cheek and the tongue for a total of 19 items. (Table 1)

No.	Position	No.	Position
1	Upper right outer teeth	11	Upper front inside teeth
2	Upper front outer teeth	12	Upper right inside teeth
3	Upper left outer teeth	13	Upper right chewing
4	Lower left outer teeth	14	Upper left chewing
5	Lower front outer teeth	15	Lower left chewing
6	Lower right outer teeth	16	Lower right chewing
7	Lower right inside teeth	17	tongue
8	Lower front inside teeth	18	cheek bulge right
9	Lower left inside teeth	19	cheek bulge left
10	Upper left inside teeth	total	

Table 1 The position of brush teeth properly.

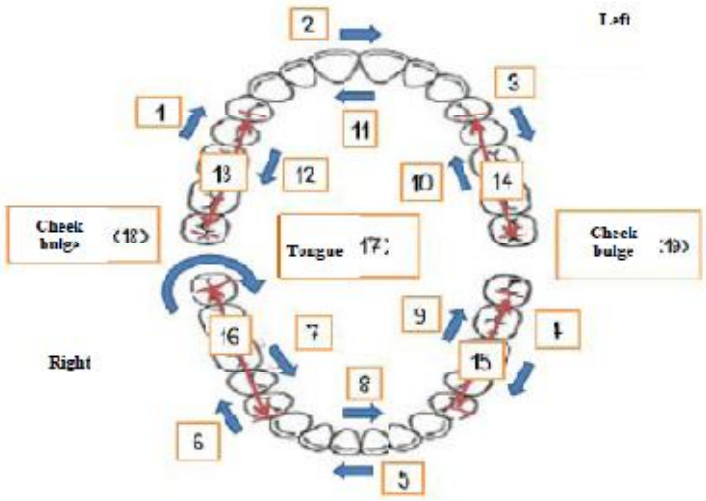


Fig 1 : The position of brush teeth properly
(Oral Hygiene Skill Achievement Index (S.A.I). Niedermann.R, and Sullivans, M.T.,1981[6])

3.2.3) Criteria and Score

- Criteria are divided into 2 parts.
  - A. Placing the Toothbrash
    - Score 0 is incorrect brash placement or brush placement.
    - Score 1 is a correct brush paste.
  - B. How to brush
    - Score 0 is the method of brushing in that part is not correct or not brushed it.
    - Score 1 is the correct way to brush your teeth.

- Scoring method : $\frac{\text{Total score of total brushing}}{\text{Number of oral measurements}}$

- Score translation
  - Score 1.60 - 2.00 means levels of skill to brush teeth properly is good.
  - Score 1.20 - 1.59 means levels of skill to brush teeth properly is moderate.
  - Score 0.00 - 1.19 means levels of skill to brush teeth properly is low.

(Oral Hygiene Skill Achievement Index (S.A.I). Niedermann.R, and Sullivans, M.T.,1981[6])

3.2.4) Before the tool was used in the research, to try out with the 30 people. Reliability in this section is 0.768 , the confidence level is high.

3.4) Experimental procedures and data analysis:
3.4.1) Prior to commencement , ethical research in humans was approved and endorsed by the Ethics Committee on Human Research.
3.4.2) The school was contacted to select the trial group and ask for permission from the pupil s' parents to participate in the activity by sending them a detailed explanation of the research objectives. A letter of consent was required for students to attend the activity.
3.4.3) Before beginning the first hourly activity, the students were instructed clearly in the cooperative teaching methodology and sat the pre-test exam.
3.4.4) Learning activities were conducted according to the hours of health education stated in the lesson plan. Activities were organized for60 minutes (1 period) every 2 weeks with 2 lesson plans.
3.4.5) At the end of the experiment the students reset the same exam. Data were collected, checked for completeness and the results were analyzed.

3.5) Data analysis: A statistical program was used significance level p <0.05 was selected as the criterion for acceptance of the research hypothesis. Data were analyzed by paired samples t-test descriptive statistics of percentage, mean and standard deviation, and skill to brush teeth correctly both before and after the trial.

IV. RESEARCH RESULT

Data analysis results were divided into two parts as general demographic data of the experimental group and results of differential skill analysis scores to brush teeth correctly before and after the experimental procedures.
4.1) Regarding demographics , the majority of the samples were female at 61.7% with38.3% male. Students have dental care by brushing 100% and See dentists every 6 months 76.7 %
4.2) Analysis results of the level of skill to brush teeth correctly revealed that the experimental group had a significantly higher post-test score than before the experiment (p <0.05).

Levels of skill to brush teeth properly	Before Number (%)	After Number (%)
Good	2(4 30)	37 (78 70)
Moderate	11 (23.40)	10 (21.30)
Low	34 (72.30)	0 (0)
Mean	1.04	1.82
Standard deviation	5.129	3.908
Min - Max	0 42 , 1 74	1 26 , 2 00

Before : The most of experimental groups had levels of skill to brush teeth properly of low 72.30% and moderate 23.40% , mean score 1.04 and After : had levels of skill to brush teeth properly of good 78.70 % and moderate 21.30% , mean score 1.82

Table 2 Levels of skill to brush teeth properly of experimental group before and after the experiment (n = 47)

(n – 47)

Variables and period	$\bar{X}$	S D	df	t-value	p-value
Skill to brush teeth properly					
Before	1.01	5.129			
			46	14.021	<0.001
After	1.82	3.908			

When testing compare of mean scores before and after the experiment, the mean score of brushing skills was higher than before the experiment at the .05 level of significance.

Table 3 Compare mean of skill to brush teeth properly of experimental group before and after the experiment

V. DISCUSSION

Results determined that after the experiment, the experimental group showed higher skill to brush teeth correctly. A cooperative learning model describes learning as a learner-centered technique that can be used to teach small groups. Cooperative learning gives advice and encourages students to share their knowledge and experiences with each other. Awareness is gained in relation to real life as practicing acquisition skills, knowledge of acquisition skills, thinking skills, knowledge management skills, expression skills, practical skills, new knowledge building skills and teamwork skills. After instruction, the experimental group was able to follow the 7-step cooperative learning process. Step 1: Tell your friends about your experiences. Step 2: Focus on your friend's story. Step 3: Compare experiences. Step 4: Participate in the selection of the presenter. Step 5: Pay attention to the instructor. Step 6: Participate in the teaching activities with the facilitator. Step 7: Teaching and learning cooperative activities within the group.

Results concurred with Phawat Sangchai (2014) [7] who studied the development of imaging skills using cooperative learning activities. A total of 52 students in grade 4 were compared for print skills before and after the use of cooperative learning activities by pre- and post-test achievements. Students who followed the cooperative learning activities recorded a statistically significant difference at the .01 level between pre- and post-test scores.

CONCLUSION

6.1) Conclusion for the use of research results:

The activity should be taught in each of the seven steps, which in 60 minutes may not be enough. Step 1: Tell your friends about their experiences. Step 2. Interest in a friend's story Step 3 compares his or her experiences with a friend in a group. Each member intends to share their experiences and compare their own experiences and friends. Some people have not spoken fully.

6.2) Conclusion for further research:

The grouping of the experimental group should be conducted in a way that is different from the students themselves, such as counting numbers, etc. If they are intimate groups, attention for study less.

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Fig 2 : Activity of cooperative learning

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