Is peer education more effective than classical training for oral health behavior?

ABSTRACT

Background and Objective: This study aimed to a comparison of two educational methods to improve oral health behaviors among female student.

Materials and Methods: This is a quasi-experimental study. 120 fourth grade female students of 6th region of Tehran, Iran were randomly selected and allocated to group A (received oral health education from a health educator, n=30) and group B (received the same education through the peer education approach, n=30). Data were collected via a valid Tool. After pre-test, an educational intervention was implemented in both groups. Intervention set up for three sessions per session one hour of training. Post-test was performed after one month later using the same questionnaire. The collected data were analyzed by independent t-test and chi-square using Spss ver16.

Results: The average mean score of the knowledge and practice in both group after educational intervention significantly increased (P<0.001). Mean scores of the attitude also increased in both groups after the intervention, but this increase was significant only in child to the child group (P<0.001). The mean score of knowledge, attitude, and practice between the two groups showed that child to child education has been effective than Classic education.

Conclusion: Oral health education using active learning methods and the participant involvement is recommended.

Paper Type: Research Article.

Keywords: peer education; students; oral health

▶ **Citation:** Karami Joyani A, Hidarnia A, Zarei F. Is peer education more effective than classical training for oral health behavior? *Journal of Health Literacy*. Fall 2018; 3(3): 5-15.

Afsaneh Karami Joyani
Department of Health Education and Health Promotion, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran.

Alireza Hidarnia
* Department of Health Education and Health Promotion, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran. (Corresponding Author)
E-mail: hidarnia@modares.ac.ir

Fatemeh Zarei
Department of Health Education and Health Promotion, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran.

Received: 2018/08/23
Accepted: 2018/11/28
Doi: 10.22038/JHL.2018.34410.1012

Introduction

Dental public health is one of the important branches of public health which has significant effect on the people's health (1). World Health Organization (WHO) has considered the oral and dental health as a necessity and part of public health in a lifetime. The WHO states that poor oral health and related untreated illnesses can have a major impact on quality of life (2). One of the most popular chronic diseases of dental public health is tooth decay, which is a major health problem in most countries of the world, especially in developing countries (3).

Oral and dental diseases can cause to irreversible damages and consequences such as pain, depression, reduced self-esteem, low quality of life, decline in growth, iron deficiency, acute and chronic infections, and so on. In addition, oral and dental diseases can restrict individual activities at school, at work, or at home, causing millions of working hours to be lost annually around the world (4). One of the objectives of WHO in the field of the oral and dental health is to reduce the amount of Decay Missing Filled Teeth (DMFT) (5). According to the World Health Organization (WHO) report, the DMFT index for 12-year-old children in United States, in Europe and in Africa is 2.8, 2.6, 1.3, respectively (6). In Iran, the average of this index is 1.7 (3). In 2012, DMFT of students is estimated 1.7 in Yazd (7).

Despite the recommendation for observing and teaching dental public health in children and adolescents, are still witnessing the prevalence of dental caries in students (8). Any changes or improvements in the health behaviors of this group can have a sustainable and significant effects on the health of the society's future generation. (9). Meanwhile, the school is the easiest and most affordable way to reach this age group (10).

There are effective approaches to prevent tooth decay and gum disease. The self-care methods for oral and dental health (using dental floss and brushing) and fluoride therapy are effective (11). On the other hand, wrong nutritional behaviors in children and adolescents such as high consumption of sugar, lack of dairy consumption, and consolidation of unhealthy habits such as the reluctance to brush and use dental floss have increased the prevalence of caries in this age group (12). Interventions in the field of health education are essential in order to change unsanitary habits and reduce oral and dental diseases (13). On the other hand, the findings indicate that individual's oral and dental tissues health is related to their level of knowledge and knowledge about dental public health behaviors (14). Sutherland believes that health education is an essential element in the advancement of health, and one of its important roles is to prepare the people of the community through providing knowledge and giving information to them and displaying their healthy skills and experiences. Hence, considering the correct and effective method of health education is an effective component that effect on the training efficiency and the durability of changing an appropriate healthy behavior (13).

$$n = \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2 \left[P_1(1-P_1) + P_2(1-P_2)\right]}{(P_1 - P_2)^2}$$

One of the approaches that used in t is the Child to Child Training Approach. The original idea of this approach was presented by Hughes and Morley in 1978 (15). In this year, the first meeting was held by the London Institute of Child Health and Education in order to introduce and plan the above-mentioned educational approach for health education.

The program has officially begun since 1979 (World Children's Year), and since then many countries, including Iran, have implemented the above program. The main feature of the child-to-child approach is involvement of children directly in the education process and promoting health (15). In this educational approach, behavior change is taken place through Peer Group. In this approach, the power of thinking and creativity increases among people and their comprehensive participation can be seen in the planning, implementation, and even assessment stages of educational practices (16). The effect of this educational method in various studies, including nutrition training for students (17), puberty health training in adolescent girls (16), oral and dental health training in children (18), and effects on the adolescent girls' mental health (19) has been reviewed and the effectiveness of this method has been confirmed in these studies.

The use of Child-to-Child Training Method is a new approach to educate health issues to students, and the use of this method promotes the rapid expansion of health messages among students and their families. The student receives health messages and transfers them to smaller brothers and sisters as well as their friends and becomes a strong health relationship (20).

However, Teacher-to-Child Classic Training Method is recognized as a traditional approach in the field of education. In this way, the concepts are transmitted through the teacher to the child. Many studies have pointed to the Classic Training Method as a safe and successful educational approach (15).

Considering the importance of oral and dental health observance in childhood, the key role of peers group in communication and transferring information, as well as the necessity to pay attention to effective, active and innovative educational methods, in this study, the female peers group was selected for educational programs. Furthermore, two educational methods were compared to provide useful information and appropriate objectives for health authorities and planners in the country. Therefore, the present study aims to determine the Efficiency level of the educational approach through peers group (Child-to-Child Training Method) compared to the classic method (Teacher-to-Child Training Method) in order to improve oral and dental health among elementary school female students in 6th region of Tehran.

Materials and methods

Purpose: The present research is semi-experimental study from a kind of pretest posttest, which lasted from February 1, 2017 to the end of April 2018 for four months. Sampling method in this study was random. In this way, at first, 6th region was chosen randomly from different regions of Tehran and two schools were selected randomly among girls' elementary school in district 6 of Tehran, and a class from each school as a peer education group (child-to-child education) and another class as a classic education group (health teacher to child training). From each school, 60 students in the fourth grade were divided into two groups: peer education and classic education. Written consent was taken from all participants who tended to attend this research.

Sample size and data collection method: Sample size was calculated 46 persons for each group by using Capa-Pookak formula with 80% confidence level and 95% Statistical reliability. For more accuracy and consideration 30% probability of dropping samples,

it was decided to count 60 people for each group (p1=30% and p2= 50%).

Measurement tools: The data collection tool was a researcher-made questionnaire by Goodarzi (21). The questionnaire consisted of four parts: 10 questions about demographic information, 11 questions about knowledge, 8 questions about attitude and 6 questions for measuring behavior. To validate the instrument for measuring the clarity of items, the questionnaire was first provided to 15 similar students (except participants in the study) and studied them and answered the items. Based on the comments and suggestions received from the mentioned individuals, changes were made in the content of the questionnaire. Considering the enormous city of Tehran and high cultural diversity, the validity of the questionnaire (form and content) was re-evaluated.

Using the psychometric properties of the questionnaire, form validity (using the questionnaire viewpoints by ultimate users), content validity, CVI and CVR calculation in quantitative way and using 10 people were in the panel of experts (oral and dental health and health education) in qualitative way has been done in order to provide the validity and reliability of the questionnaire (Goodarzi et al., 1395). The CVR measured on the basis of the Lasheh table, the minimum acceptable CVR value is 0.62. Also, admission of questions based on CVI score was more than 0.79. The reliability test of the questionnaire was used to measure the internal correlation of the questionnaire questions. The results of the validity and reliability of the above-mentioned questionnaire are shown in Table 1.

Method of intervention: We conducted this study after verifying the validity and reliability of the questionnaire, as well as obtaining an approval from the Education Department of Tehran University (region 6). After the agreement of schools, eligible student was identified and they confirmed their constants to attend in this study. Therefore, we briefly explained the purpose and method of this research as well as how to answer the questionnaire questions. Then, all students were asked to complete the pre-test questionnaire based on their personal information about oral and dental health. After collecting pre-test questionnaires, educational needs and subsequent educational content were designed.

In the next stage, in each school, according to the studies, and with the suggestion of the manager and the school's deputy, among the 5th grade students, 3 students who had the ability to teach and have sufficient power of speech were selected as peers group educator and were trained in terms of health education. The educational program included educational pamphlets, posters, several educational animation films, and practical training for brushing and dental floss that were carried out by the researcher for three consecutive 60 minutes' sessions at the school or prayer hall, and was taught to the peer educators (5th grade students) in the hours of sport or art classes.

In the intervention phase, these three peer educators trained 10 students from the fourth grade in the peers group during the recreation or exercise hours in terms of three consecutive sessions of one hour with the presence of a teacher, health trainer and researcher. Along with the beginning of the peer educators' work, the health instructors of both schools already received the same educational content through pamphlets, poster, oral and dental moulage, and slides by the researcher; during the three 60-min-

ute training sessions attended by researcher, the educational content was provided to the training group students through the trainer. After the intervention, the waiting time was considered to be one month. During the waiting period, peer educators, as well as health educators in the role of oral and dental health care providers, trained the students in the target group. After completing the one-month waiting period, a post-test questionnaire was completed by students in both groups.

Data analysis: The results were analyzed using SPSS version 16 software. The data distribution status was evaluated in terms of normal and non-normality by Kolmogorov-Smirnov test. The results of the Kolmogorov-Smirnov test showed that the distribution of data in the variables of knowledge, attitude and behavior is abnormal. Wilcoxon test was used for intergroup comparison and for comparing the classic education group (teacher-to-child) with the classic group (child to child) at each evaluation stage, the non-parametric U Mann-Whitney and the Chi square test was applied for quantitative and qualitative variables, respectively. Meanwhile, the significance level in this study was considered 0.05.

Findings

The aim of this study was to determine and compare two methods of peer's education and classic education in promoting oral and dental health behaviors of 6th grade girl students in 6th region of Tehran, during 2017-2018. In this study, one group was received relevant training by peers and another group through the mentor.

It should be noted that the Kolmogorov-Smirnov test showed that the distribution of samples was not normal (P <0.05); therefore, nonparametric statistical tests were used for data analysis. Also, in all tables, the significance at 95% level (alpha 0.05) was marked with a star (*) and at 99% level (alpha 0.01) with two stars (**) (P <0.001** P <0.05*). Based on the Table 2, the results showed that none of the demographic variables had a significant difference in two groups (P> 0.05), except for father's job and family's economic situation (P <0.001).

Based on the results of Wilcoxon test in Table 3, the mean of knowledge scores before and after educational intervention was significantly different in teacher to child training group and the peer education group. This amount in the first mentioned group was 6.43 before training which has increased to 7. 28 after training (P <0.001) and in the second mentioned group it has increased from 3.47 to 7.23 (P <0.001). The mean score of performance before training between two groups was not significant (P> 0.05), but after training, this difference was significant (P <0.001); so that peer education in comparison with the training by the instructor has had a greater impact on the students' performance. This result was confirmed by comparing the difference in mean of performance score (P <0.001). Also, there was a significant difference between the attitude before and after education in the peer education group (P <0.001). However, this difference was not significant teacher to the child training group (P> 0.05).

Table 4 demonstrates that the mean scores of knowledge and attitude before training were significant between two groups of health educator and the peer education; so, the statistical difference between the two groups after training is not valid. In order to make the comparison between the two groups in a correct and accurate way, the difference between the mean score of knowledge and attitude was measured in each group. Then,

the scores difference was compared by using the Mann-Whitney test.

The findings showed that, this difference between two groups was significant, so that peer education had more impact on the students' knowledge and attitudes toward training by instructor. The mean of performance scores before training between two groups of teacher to child training group and peer education group was not significant, but the statistical difference between two groups after the training was valid and significant. Therefore, students in the peer education group showed better performance in terms of oral and dental health behaviors than the instructor's training group.

Table 1: Results of the validation of the questionnaire used in this study

variable	CVI	CVR	α	β
Awareness	0.92	0.9	0.78	0.77
Attitude	0.83	0.87	0.74	0.73
Behavior	0.98	0.91	0.76	0.75
Overall scale	0.91	0.89	0.76	0.75

Table 2: Comparison of the status of demographic variables between the health educator group and peer education group

Variables \ Groups		Health educator group		peer education group		P-Value
		n	%	n	%	
Age	nine	6	10	2	3.3	0.136
	ten	54	90	58	96.7	
Education mother	Under diploma	18	30	19	31.7	0.650
	diploma	6	10	9	15	
	Academic degree	36	60	32	53.3	
Education father	Under diploma	9	15.5	6	10.2	0.224
	diploma	12	2.07	20	33.9	
	Academic degree	37	63.8	33	55.9	
Mother job	Housewife	22	36.7	28	46.7	0.528
	Employee	25	41.7	18	30	
	Self-Employee	7	11.7	6	10	
	others	6	10	8	13.3	
Father Job	worker	3	5	5	8.3	0.039
	Employee	28	46.7	16	26.7	
	Self-Employee	19	31.7	17	28.3	
	others	10	16.7	22	36.7	
Economic statue family	Poor	0	0	5	8.3	0.017
	medium	8	13.3	13	21.7	
	good	34	56.7	20	33.3	
	Rich	18	30	22	36.7	
Housing family	Private	36	60	25	41.7	0.241
	Leased	15	25	20	33.3	
	Organizational	6	10	10	16.7	
	Relatives	3	5	5	8.3	
Number of family	≤3	17	28.3	18	30	0.760
	4	39	65	36	60	
	≥5	4	6.7	6	10	
A child of several families	1	29	48.3	29	48.3	0.435
	2	26	43.3	21	35	
	3	4	6.7	6	10	
	4	1	1.7	4	6.7	

Table 3: Comparison of mean score of knowledge, attitude and behavior between two groups before and after the intervention

Variables \ Groups		Health educator group		peer education group		P-Value
		mean	SD	mean	SD	
knowledge	Before	6.43	1.82	3.47	2.27	< 0.001**
	After	7.28	1.70	7.23	2.14	0.802
P-Value		<0.008**		<0.001**		
Attitude	Before	29.82	4.47	27.78	4.52	**0.004
	After	30.78	4.92	34.85	3.40	< 0.001**
P-Value		< 0.253		< 0.001**		
Behavior	Before	1.22	1.21	1.08	1.05	0.682
	After	2.15	1.64	3.18	1.29	< 0.001**
P-Value		< 0.001**		< 0.001**		
Tests used: Wilcoxon (intra-group comparison) and Mann-Whitney U test (comparison between the two groups)						

Table 4: Comparison the difference of mean score of knowledge, attitude and behavior between two groups before and after the intervention

Variables \ Groups	Health educator group		peer education group		P-Value
	mean	SD	mean	SD	
Difference in mean of knowledge score	0.85	2.36	3.77	2.47	< 0.001**
Difference in mean of Attitude score	0.97	6.13	7.07	4.32	< 0.001**
Difference in mean of Behavior score	0.93	1.76	2.10	1.63	< 0.001**

Discussion and conclusion

The effectiveness of the peers' group educational approach is based on the theory that sensitive information is more easily transmitted among peers (22). In this regard, the present study aimed to determine and compare two methods of peer education and classic education on the improvement of oral and dental health behaviors of female students. Comparing the mean difference of knowledge score between two groups before and after educational intervention demonstrated that the two groups had a significant difference in terms of impact on the students' Knowledge. Moreover, education through peers group were more effective than classic education in increasing students' awareness regarding oral and dental health. This has been confirmed by numerous studies inside and out of the country (23, 24, 25), including the study of Lashgari et al., (2013) about the effect of child-to-child education on improving the health awareness among female students. The results of this study showed that education by peers group not only increases student learning, but also leads to the achievement of educational goals in training and upbringing (22); however, review of literature illustrates that all studies in different circumstances have not confirm the positive effects of peer education or child-to-child education. In this regard, the results of Moeeni et al., (2011) study demonstrated that there was no significant difference in terms of knowledge score, perceived sensitivity, perceived benefits and practice guidance with the child mentoring group after the educational intervention of the child-to-child group, and the two

groups had almost the same performance (15). Furthermore, Moeeni et al., assumption regarding the lack of awareness raising and perceived benefits among the students of the child-to-child group after the educational intervention is that children helpers (small instructors) did not succeed well because they did not have enough adult information. They could not explain the relationship between oral and dental health and its benefits in the field of decay and other oral and dental illnesses to the students.

In the study of Kargar et al., there were no significant differences between peer and adult intervention groups before, immediately, and one month later, meaning that education by peers and health workers has been effective to a certain extent (26). It seems that the choice of proper education in the peers group that is accepted by other students and the ability to express and appropriate control on the target group is one of the factors that increase the level of awareness in the peers group. The results of this study showed that the students' awareness who trained by peers increased significantly from pre-test to post-test. Therefore, it seems that peers group has been able to give better sense of self-confidence to the target group in terms of oral and dental health information, or perhaps due to the responsiveness and emphasis of peers on the points that most have been questioned by the students. Also, peers' educators seem to have emphasized the same information because they considered the needs of the target group (their same age class) better than adults, and in transmitting this information they were more effective and successful than the instructor-oriented training group.

In the present study, the attitude of students was increased in peers group and classic group after intervention, but this increase was significant only in peers group (P <0.001). Also, the comparison of attitude mean score between two groups of teacher-to-child education and peer education before and after educational intervention showed that there was a significant difference between these two groups (P <0.001), so that peer education had more impact on the attitude of the students than training by the instructor. Studies have demonstrated that peers-led educational programs have more impact on the attitude and understanding of children and adolescents regarding health issues than those who did not use these programs (27). Furthermore, in the study of Akbarzadeh et al., a significant increase in the students' attitudes who trained by peers group after intervention in relation to health workers, shows the impact of education by peers group (28).

Also in the study of Noori Sistani, there was significant statistical difference (p<0.001) between mean scores of attitude in two educated groups with the peer education approach and speech method after the educational intervention. Due to the fact that given, peer education approach is more effective than speech group in terms of changing attitude (6). But regarding significance of attitude difference before and after the intervention in the peers group, it should be pointed out that students who provide educational content to fourth grade students , as a successful role model, caused significant changes in the attitude of the target group for some reason, such as one year older than the target group students, the superior scientific members of the class, as well as the manner in which the content were expressed and type of communication with the target group. While in the classic group, in which education was transmit-

ted by the trainer to the students, in contrast to the peers group, there was no significant change in the attitude level before and after the intervention. Moreover, the trainer only provided health information in this group and as a model, could not has a great influence on changing the attitude of audience group.

In this study, the performance of students about oral and dental health behaviors increased significantly before and after education in the peers group and the classic group. The mean score of pre-training performance was not statistically significant between the two groups ($P<0.05$). However, after training, this difference was significant ($P<0.001$), so that peer education was more effective than training by the instructor. Perhaps the result can be interpreted in a way that students who have a high level of awareness and attitude towards oral and dental health have a better performance than others.

This result was confirmed in several studies, including Kaveh in 2016 (28) and Leana (29) in 2017. A study by Walvekar et al., showed that the child-to-child education program had a significant effect on increasing awareness, attitude change and behaviors related to diarrhea among students in the child-to-child group compared to the control group (30); However, in the Kaveh study (2016), the results demonstrated that there was no significant difference in the mean scores of nutritional behaviors in the control group (28). Also, Tolli's survey (2012) compared with the control group showed no evidence regarding the effectiveness of peer education in relation to the desired behaviors (31). For Tolli, the reason for the failure of peer group approach in comparison with the control group is that in studies which confirmed the effectiveness of peers' group approach, there were beneficial factors in favor of this approach and its effectiveness compared to the control group. These factors comprise of proper education and supervision on the work of peer educators, the participation of peer educators in planning, and so on.

Regardless of the implementation problems and entering into the education and training context and justifying the authorities in this area, this study, like many studies, has some limitations. In the area of educational intervention, studying the educational program in two groups of peer's education and teacher-to-child education was not performed simultaneously (in one day and one hour). On the other hand, the students of the two groups during the educational intervention were connected with each other in the break time and there is a likelihood that the study results to be distorted. The research team, of course, tried to prevent the sharing of information between peer groups by creating reassurance between peer groups.

In the area of data collection, due to the fatigue and losing of the quality of students' responding to the questions of the answer sheet, the number of questions related to the field of attitude as well as performance has been declined, and this may be has had an effect in measuring the attitude and performance of students. On the other hand, students completed most of the questionnaires on their own. However, one of the strengths of this study is the application of peer education approach as an interventional approach in the field of oral and dental health in 6th region schools of Tehran metropolitan areas.

Conclusion

The purpose of this approach is to empower students to engage in effective activities lead-

ing to increased information and services that the group needs to improve their health. The achievements of this approach were to develop an appropriate behavior and change behavior in target groups. Considering the results of the study on the effectiveness of peer education on oral and dental behaviors of students, it is suggested that the peers group should be used in the oral and dental promotion program in this age group. This will increase the attention and participation of students in the program and, as a result, improve their learning.

References

1. world health organization. The objectives of who Global oral Health program(ORH).Available From: http/www.who.int/oral Health/objectives/en/index.htme.at: 2006/02/18, At 10a.m.
2. Badri Gargari R, N. SH. The role of factors related to perceived selfefficacy and health behavior brushing and flossing pull the visitors to the private office of Tabriz. Int J Res Med Sci. 2011;9:130-8.
3. Fallahi A, Morovati M. Between tooth cleaning behaviors of the transtheoretical model-based pre-university student-ts in Yazd. Tehran Uni Med Sci J. 2010;4:45-8.
4. Kwan S, Petersen P, Pine C, A. B. Health-promoting schools: an opportunity for oral health promotion. Bulletin of the World Health organization. 2005;83:677-85.
5. Ciancio S. Improving oral health: current considerations. Journal of Clinical Periodontology. 2003;30:4-6.
6. Yang F, Zhang Y, Yuan X, Yu J, Chen S, Chen Z, et al. Caries experience and its association with weight status among 8-year-old children in Qingdao, China. Journal of International Society of Preventive & Community Dentistry. 2015;5(1):52.
7. Haherian A, Ardakani A, Soleymani A, Rashidi I, Meybodi F, N. G. DMFT evaluation of first permanent molars in primary-school students in Yazd. 2012;11(2):1-9.
8. Arora A, Scott J, Bhole S, Schwarz E, A. B. Early childhood feeding practices and dental caries in preschool children: a multi-centre birth cohort study. BMC Public Health. 2011;11(1):28.
9. Amalia R, Schaub MH, Widyanti N, Stewart R, J. G. The role of school-based dental programme on dental caries experience in Yogyakarta Province, Indonesia. International journal of paediatric dentistry. 2012;22(3):203-10.
10. Petersen PE. Global policy for improvement of oral health in the 21st century–implications to oral health research of World Health Assembly 2007, World Health Organization. Community dentistry and oral epidemiology. 2009;37(1):1-8.
11. Nyvad B. Cariology in the 21st century. State of the art and future perspectives. Journal Caries Res. 2004;38(3):170.
12. mahmoudian ZH. The relationship between nutrition and dental caries in chidren 3 to 5 years old in the city of Ray. Tehran: Tehran university of medical science; 2003.
13. Watt RG. Emerging theories into the social determinants of health: implications for oral health promotion. Community dentistry and oral epidemiology. 2002;30(4):241-7.
14. Andrakhora F, Bohrani M, Goodarzi A. Comparisionof The Effect of Lecture and Multimedia Screening on Oral Health Behavior of Students in Tehran . Tehran.Military caring Sciences.2017;4(3).213-220.
15. Moeini B, Ghaderi A, Hazavehei S, Allahverdipour H, Moghimbeigi A, Jalilian F. A Coparative Study Of Peer Education and Trainer Education On The Basis OfHealth Beliff Model (HBM) In Improving Oral Health In Sanandaj Boys'Elementary Schools. 2013;2(39).
16. Sistani N, Khoi M, MH. T. Promoting knowledge, attitude and practices (KAP) of the mothers in their Girls' pubertal health based on peer education approach. Journal of Babol University of Medical Sciences. 2010;11(6):33-9.
17. Mainbolagh BL, Rakhshani F, Zareban I, Montazerifar F, Sivaki HA, Parvizi Z. The effect of peer education based on health belief model on nutrition behaviors in primary school boys. Journal of Research & Health Social Development & Health Promotion Research Center. 2012;2(2):214-25.
18. Romadlon DS, Bramantoro T, Luthfi M. The effect of peer support education on dental caries prevention behavior in school age children at age 10-11 years old. Dental Journal (Majalah Kedokteran Gigi). 2016;49(4):217-22.
19. Taghdisi MH, Noori sistaniM, Merghat Khoi E, Hoseini F, Asgharnejad F. Impact peer education approach on knowledge and practice about Mental Health of Adolescent Girls. 2012;10(4):92-105.
20. Elewa AA-A, Saad AM. Effect of child to child approach educational method on knowledge and practices of selected first aid measures among primary school children. Journal of Nursing Education and Practice. 2017;8(1):69.
21. Goodarzi A, Tavaffian S, Heidarnia A, Ziaoddini H. Health Literacy and OralHealth In Primary School Students Of Distract 14 In Tehran, Iran. 2016;2(4):229-237.
22. Najar Lashgari S, Rahim Aghaee F, Nayeri N. The effect of child to child education on health awareness of third grade female students in primary school. 2013;10(2):132-140.
23. Shirzad M, Taghdisi MH, Dehdari T, Abolghasemi J. Oral health education program among pre-school children: an application of health-promoting schools approach. Health promotion perspectives. 2016;6(3):164.
24. Akbarzadeh M, Zangiabadi M, Moattari M, Tabatabaei H.

Comparing the effect of teaching breast self-examination by peers and health care personnel on students knowledge and attitude. Iranian Journal of Medical Education. 2009;8(2):195-203.

25. Moeini B, Hazavei S M M, Sohrabi Vafa M, Soltanian AR, L. R. Assessment of oral–dental health status: using Health Belief Model (HBM) in first grade guidance school students in Hamadan. Jundishapur Journal of Health Sciences. 2012;4(3):65-76.
26. Kargar M, Jamali Moghadam N, Moattari M. The effect of osteoporosis prevention education by peers and health personnel on self-efficacy of adolescents with nephrotic syndrome. Iran Journal of Nursing. 2013;26(81):44-53.
27. Krones T, Keller H, Becker A, Sönnichsen A, Baum E, Donner-Banzhoff N. The theory of planned behaviour in a randomized trial of a decision aid on cardiovascular risk prevention. Patient education and counseling. 2010;78(2):169-76.
28. Kaveh MH, Nejad ZK, Nazari M, Ghaem H. Evaluating the effect of the child-to-child approach based on the Theory of Planned Behavior on the eating behaviors of elementary school students. International Journal of medical research & health sciences. 2016;5(5):121-6.
29. Leena K, D'Souza J. Effectiveness of child to child approach to health education on prevention of worm infestation among children of selected primary schools in Mangalore. Nitte University Journal of Health Science. 2014;4(1):113.
30. Walvekar P, Naik V, Wantamutte A, Mallapur M. Impact of child to child programme on knowledge, attitude practice regarding diarrhoea among rural school children. Indian Journal of community medicine. 2006;31(2):56-.
31. Tolli M. Effectiveness of peer education interventions for HIV prevention, adolescent pregnancy prevention and sexual health promotion for young people: a systematic review of European studies. Health education research. 2012;27(5):904-13.