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Evaluation of Oral and Dental Hygiene in Students: Film- and Lecture-based Educational Intervention

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Abstract

Aim: Oral health is among the important components of individual general health that affects the health of entire body. This study aims at investigating the effect of educational intervention on the primary school students' oral health.

Methods: This quasi-experimental study was conducted on 175 primary school students recruited randomly from different regions of Dehloran City during the school year of 2014-15. The testimonial was obtained after holding briefings for the parents. Data were collected using a researcher-made questionnaire, which was administrated at baseline and 3 months after the intervention. The content validity was approved by the expert panel and its reliability was confirmed by Cronbach's alpha coefficient. Data were analyzed by SPSS software 18, inferential statistical tests, and paired t-test. This study was supported by the HSR Council and the Ethics Committee of Ilam University of Medical Sciences.

Findings: The results indicated significant changes in the samples' knowledge (from 3.6±1.37 to 4.98± 1.57), attitude (from 28.17±5.7 to 30.98±6.35) and behavior (15.03 ±2.98 to 17.08 ±2.60) after the intervention.

Conclusion: The positive results of educational intervention indicate that the education through appropriate methods can improve students' behavior in the field of oral health. Therefore, it is suggested more emphasis on oral health education at school age.

Keywords: Educational intervention, Dental hygiene, Students

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Introduction

Mouth is a mirror of the body, and teeth are the main components [1]. The oral cavity has many functions associated with the daily living of people such as eating, beauty, speech and social interactions [2]. Oral diseases such as tooth decay and periodontal are among the most common diseases worldwide [3-5], and poor oral and teeth hygiene not only causes diseases related to the oral cavity but also can be a threat to the vital body systems and even lead to death [6]. World Health Organization (WHO) has focused on the use of experiences and evaluation of previous objectives with an emphasis on the importance of oral health as an indispensable component of public health until 2020 [7].

Tooth decay has been climbing in our country; this is likely due to poor public awareness of the role and importance of oral hygiene in maintaining dental health [8]. In order to reduce public oral health problems and mitigate the costs of subsequent treatment, additional efforts should be made in order to raise the awareness, attitude, and enhanced performance of people, especially children, who are in the course of learning, and intellectual and cultural growth and development [9]. Oral health education at schools as a small but important social institution with diverse training needs and systematic planning tailored to each country is of fundamental interest to organizations providing health, as well as a recommendation of WHO. Hence, one of the principles in PHC, The Alma Ata Declaration, has been health promotion through education to reduce unnecessary health inequalities considered in the Ottawa conference [10].

In domestic literature review, few studies were found in which the impact of using video tutorials on the oral health of students was investigated [10-12]. However, the dramatic ways in addition to the educational aspect are used to create or modify attitudes and skill training in health education programs [13].

Therefore, due to the high rate of tooth decay at schools [14], the present study was implemented to investigate the effect of combined educational intervention including lecture and film screening on the knowledge, attitude, and behavior of elementary students about oral health in Dehloran City during the academic year 2014-15.

Objective

Oral health is among the important components of individual general health, and affects the health of the entire body. This study aims at investigating the effect of educational intervention on the primary school students' oral health.

Materials and Methods

This study was performed on 175 students of

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fourth and fifth grades at an elementary school in Dehloran City during the academic year 2014-15. The samples were selected through random cluster sampling (in two schools and six classrooms). The inclusion criteria were studying at the fourth or fifth grade of elementary schools in Dehloran City, filling in a consent form by the parents, participating in the training courses, and cooperating until the end of the project. The drop-out students and those who did not participate in the educational programs were excluded from the study.

The data collection tool was a self-made questionnaire with 39 questions including 4 parts of the personal information (9 questions), knowledge (10 questions by scoring zero and one), attitude (10 questions or 5-point Likert scale and scoring 1-5), and behavior (10 questions by scoring 0-4).

The initial questionnaire was developed according to the research purposes based on credible literature. The questionnaire's validity was assessed through the content validity by the comments of experts in health and dentistry education. Cronbach's alpha determined the reliability of the questionnaire with a score of 0.75. Upon coordinating with the authorities, the students' parents were invited to attend a briefing, and complete the consent forms. The first phase questionnaires were collected before the educational intervention. The questionnaires were completed by trained dental hygienists through interview method. The contents of intervention were provided based on the results of the first stage by relying on the initial assessment of requirements and literature.

Twenty five elementary students participated in the pilot study. In this study, the students' opinions about the best way to learn were collected in addition to investigating the reliability of the tools. Based on the results of the pilot study, film screening and training was selected with the help of experts as the transmission method of educational content.

The educational intervention included screenings (from production of the Oral Hygiene and Health Unit of the Health Center of Ilam Province) for students and providing additional details by the dentist. The training was conducted three times during a month.

The video composed of an introduction to the oral parts, layers and surfaces of the mouth and teeth, showing healthy and unhealthy gums, the use of proper toothbrush and toothpaste, the right way of brushing and flossing and the use of sodium fluoride mouthwash, as well as additional details about the side effects of not observing oral hygiene, regular visit to the dentist, healthy nutrition and so on presented by the dentist. Three months after the intervention, the questionnaires were completed by referring back to the respective schools. Data were analyzed using the

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statistical software SPSS 18 by independent sample t-test and correlation coefficients. Each student was donated a toothbrush and a toothpaste to ensure they have access to them. In addition, this study was approved by the HSR Council and the Medical Ethics Committee of Ilam University of Medical Sciences.

Results

Girls represented 48% of our subjects. The mean age of the samples was 10.55±0.78 years. Most of the students (53.7%) were in the fifth grade, and the average of the students' family size was 3.71. Majority of the mothers were housewives (70.9%), while only 33.7% were employees. While the education (26.9 percent) of the fathers was at the bachelor's level, and at the middle school's level for 30.9% of the mothers. The usage rate of toothbrush and dental floss was 59% and 36%, respectively (Table 1).

Table 1: Distribution of the demographic characteristics of study participants

Variable		**Frequency (N = 175)**	**Percent**
Gender	Girl	84	48
	Boy	91	52
Age	Mean ± SD	10.55 ± 0.778	
Grade	Fourth	81	46.3
	Fifth	94	53.7
Children sequence	First	81	22.3
	Second	39	17.1
	Third	30	9.7
	Fourth	17	9.7
	Fifth and more	8	4.6
Number of family members	Two	1	0.6
	Three	8	4.6
	Four	70	40
	Five	55	31.4
	Six and more	41	23.4
Mother's job	Housewife	124	70.8
	Employee	11	6.3
	Teacher	29	16.6
	Self-employed	11	6.3
Father's job	Teacher	20	11.4
	Employee	59	33.7
	Labor	25	14.3
	Self-employed	57	32.6
	Unemployed	14	8
Mother's education	Illiterate	28	16
	Guidance	54	30.9
	Diploma	43	24.6
	Associate degree	20	11.4
	Bachelor's	30	17.1
Father's education	Illiterate	18	10.3
	Guidance	38	21.7
	Diploma	45	25.7
	Associate degree	27	15.4
	Bachelor's	47	26.9

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Moreover, the mean scores of knowledge, attitude, and behavior of the students changed significantly following the intervention (Table 2).

Table 2: Mean scores of knowledge, attitude and behavior of the participants before and after intervention

Variable		Mean (SD)	df	Sig. (2-tailed)
Knowledge	Before intervention	3.60 ± 1.37	149	P = 0.000
	After intervention	4.98 ± 1.57		
Attitude	Before intervention	28.16 ± 5.7	173	P = 0.000
	After intervention	32.18 ± 8.24		
Behavior	Before intervention	15.03 ± 2.98	145	P = 0.000
	After intervention	17.08 ± 2.60		

Statistical tests showed no statistically significant relationship between gender, age and number of children in the family of participants and the students' knowledge, attitude and behavior. While studying the relationship between the classroom of participants and the study variables, it was found that there was a significant relationship just between classroom and behavior. In the present study, no significant relationship was found between the education level of parents and the knowledge, attitude and behavior of students.

Discussion

This study examined the effect of combined education of lectures and screening as animations on the knowledge, attitude, and behavior of elementary students regarding oral health in the City of Dehloran. The results revealed significant differences in the mean score of the students' knowledge, attitude, and behavior before and after the educational intervention. 36% of the subjects used dental floss. Karami [15], Ramezankhani [16], and Mazloomi [14], respectively, reported the dental floss uses of 51.7, 21, and 37.5 percent by the subjects.

Although no statistically significant relationship between gender and knowledge, attitude and behavior was found, the mean scores of attitude and behavior among the girls were higher than in the boys, and the mean scores of knowledge among the boys were higher than in the girls. In the study of Neda Babaei et al, girls had more knowledge than boys [17]. This could be due to the kind of intervention conducted by Babaei for students at the middle school level, because probably girls are more sensitive about their beauty including their oral health and beauty as compared to boys.

A number of studies have demonstrated the effect of teaching through various media on the oral health status. Mohammad-khah [11] showed that oral health education through

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lectures and screenings increased the awareness, attitude, and practice of elementary students in Chabahar City, in which the effect of screening was found to be better than speech. In a study by Zarei [18], the mean scores of knowledge and practice to dental health increased after the intervention among the elementary school students in Qazvin Province. Babaei [17] also detected the impact of oral health education on raising the awareness of secondary school students in Hamadan. Karami [15] confirmed the effect of education based on a health belief model (HBM) on the changes in oral health behavior in the fifth grade students in Ahvaz City. Bourke studied Australian students and concluded that oral health training through theater had tremendous impacts on improving their attitude and performance [19]. An increase also occurred in the awareness of ten-year old children as a result of health education in a study by Worthington [20]. In a study by Athraa on128 students aged 11-12 years in Iraq, it was also observed that training using video and photo tutorials had an impact on the oral health of students [21], and these results were consistent with the results of the study by Hussain conducted on the students in the City of Erbil, and with the findings of Bankole in Nigeria [22,23].

Changes in oral health behaviors are related to visual technologies (photos and video clips) and lead to reinforcing the impact of learning because seeing and hearing have high impact on behavior [24].

It seems that health education in accordance with new practices away from tensions based on childish exhilaration is a shortcut to achieve the goal of promoting children's oral health. In the present study, the relationship between the participants' classroom and their behavior was significant, in the sense that the fifth-grade students had better preventive behaviors. In this study, there was no significant relationship between the education level of parents and the knowledge, attitude and behavior of students. These results were consistent with the results of Babaei [17] and colleagues on middle school students in Babol.

The results of this study suggest that gathering students' comments on training practices at early ages, along with the use of attractive methods for educational content delivery such as video display, can promote their knowledge, attitude, and behavior concerning oral and dental health. The researchers were able to simultaneously compare the impacts of several training methods such as lectures, film screenings, or using methods such as painting and wall newspapers.

Conclusion

The positive results of educational intervention indicate that education through appropriate

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methods can improve students' behavior in the field of oral health. Screening is effective in improving students' knowledge and skills as a training method. Therefore, it is suggested to have more emphasis on training oral hygiene during school ages.

Conflict of interest

The authors state that there is no conflict of interest.

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