



Assessing the Effect of Education on the Level of Awareness about Preventive Orthodontics among School Hygiene Instructors in Sari

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Abstract

Background: Proper education in oral and dental health behaviors and preventive orthodontics is vital for preventing dental diseases and orthodontic abnormalities. Since children spend much time in schools and in contact with their teachers, the current study aimed to assess the level of awareness about preventive orthodontics among school hygiene instructors in Sari, Iran.

Methods: Seventy-one hygiene instructors were included in this semi-experimental study with a pre-test and post-test design. The participants completed a questionnaire before any intervention. A one-day workshop about preventive orthodontics was held for the instructors, and an educational CD and pamphlet were provided for them. The participants were asked to answer the same questions after a month. Data were compared and analyzed with SPSS 22, using paired t-test and chi-squared test.

Results: The findings revealed that the training could significantly increase the level of orthodontic awareness among hygiene instructors ($P < 0.001$). However, the participant's level of education and years of experience was not significantly associated with their level of awareness ($P > 0.05$).

Conclusion: Considering the importance of health education, efficient training should be provided for school hygiene instructors to increase their awareness in the field of preventive orthodontics.

Keywords: Awareness, Preventive Orthodontics, School Hygiene Instructors

Background

Healthy teeth allow for the maintenance of overall physical health as well as an appealing look and a radiant smile. Oral disorders known as malocclusions can impact appearance and facial function. Hereditary and environmental variables can be mentioned among the factors causing

malocclusion. Some of the most important environmental causes of malformations are dental caries, parafunctional habits, and early or delayed loss of deciduous teeth (1,2).

Orthodontics is a branch of dentistry dedicated to monitoring, guiding, and correcting growing or non-growing dental structures (3). The necessity for orthodontic treatment can be categorized



depending on the degree of the existing malocclusion and the patient's perspective. Orthodontic treatment can enhance the patient's dental health, appearance, and quality of life (4).

There is a golden period for the treatment of some orthodontic anomalies. Timely diagnosis and early therapeutic intervention are vital, such as extraction of deciduous teeth in serial extraction cases, extraction of deciduous teeth that resist exfoliation and prevent the growth of permanent teeth, early extraction for preventing future crowding and treating Class II and Class III skeletal abnormalities during the growth period to obtain optimum results. Since preventing abnormalities is preferable to treatment due to less time, cost, pain, and discomfort, the current system concentrates on preventive treatment options (5-7). Therefore, programs about orthodontic knowledge and healthy lifestyle choices should focus on school-aged children.

Schools are indeed the most appropriate and efficient place to work with children in any society. Teachers have a profound impact on students and can have a significant role in determining the need for orthodontic treatment. Studies have suggested that primary school teachers can serve as oral health educators after proper training to increase their knowledge of oral health (8). However, since children's academic activities are very important for school personnel, they might have focused less attention on oral and dental health and preventive orthodontics. A similar study by Karandish et al. assessed the orthodontic knowledge of care providers and suggested poor knowledge of them (9). However, the authors did not find any studies on the knowledge of school instructors.

The policies that exist in many schools are very limited and do not consider many important aspects of prevention and education (10). Considering the critical role of educators in promoting and increasing students' level of awareness, the current investigation aimed to measure the awareness of school hygiene instructors before and after being provided with basic information about preventive orthodontics.

Methods

The current semi-experimental study with a pre-test and post-test design obtained ethical approval from Mazandaran University of Medical

Sciences (IR.MAZUMS.REC.1397.3347). All 71 primary school hygiene instructors working in Districts 1 and 2 of Sari, a city in northern Iran, in 2017, were included using the census method.

Before any intervention, the hygiene instructors were asked to complete a questionnaire about their awareness of preventive orthodontics. The questionnaires included 20 questions; questions 1 to 6 were related to oral health, and the rest were about preventive orthodontics. Each correct answer had 1 point, and any wrong answer received 0 point. The hygiene instructors were categorized as follows: poor awareness (0-5), moderate awareness (6-10), good awareness (11-15), and excellent awareness (16-20). The validity and reliability of the questionnaire were previously assessed by Basir et al. in Iran (11).

After the pre-test, a one-day training workshop was held for the hygiene instructors. During the workshop, the participants were trained in oral hygiene and preventive orthodontics using oral training and educational pictures. An educational pamphlet and a CD were also provided for the instructors. The participants took the post-test with the same questions after a month. Data were analyzed with SPSS 22.0 (SPSS Inc., Chicago, USA) using paired t-test (non-parametric) and chi-squared test. The significance level was considered at 0.05.

Results

Seventy-one female hygiene instructors with a mean age of 37.87 ± 3.38 (ranging from 25 to 57) years were included in this investigation. The findings suggested that no instructor had poor awareness during the pre-test. Furthermore, the findings obtained from the post-test revealed that all hygiene instructors had excellent and good levels of awareness.

Table 1 shows a significant difference between the pre-test and post-test scores ($P < 0.001$). On the other hand, according to Table 2, the hygiene instructors' levels of education and awareness had no significant association ($P > 0.05$). Furthermore, no significant association was observed between the participants' work experience and level of awareness ($P > 0.05$) (Table 3).

Table 1. The level of awareness among the hygiene instructors before and after the intervention

Level of awareness	Pre-test		Post-test		P-value
	N	%	N	%	
Excellent	36	50.7	61	85.9	<0.001
Good	32	45.1	10	14.1	
Moderate	3	4.2	0	0	
Mean ± SD	14.64 ± 2.36		16.77 ± 1.62		

Table 2. Association between the hygiene instructors' level of awareness and level of education

Degree	Level of awareness						Total	Mean	SD	P-value
	Pre-test			Post-test						
	Excellent N (%)	Good N (%)	Moderate N (%)	Excellent N (%)	Good N (%)	Total N (%)				
High School Diploma	1 (33.3)	2 (66.7)	0 (0)	2 (66.7)	1 (33.3)	3 (100)	2.20	1.18	P>0.05	
Associate Degree	7 (41.2)	8 (47.1)	2 (11.7)	15 (88.2)	2 (11.8)	17 (100)	1.82	1.46		
Bachelor	18 (51.4)	16 (45.7)	1 (2.9)	30 (85.7)	5 (14.3)	35 (100)	2.14	1.22		
Master	10 (62.5)	6 (37.5)	0 (0)	14 (87.5)	2 (12.5)	16 (100)	1.96	1.48		
Total	36 (50.7)	32 (45)	3 (4.3)	61 (85.9)	10 (14.1)	71 (100)	2.03	1.34		

Table 3. Association between the hygiene instructors' work experience and level of awareness

level of awareness	Years of experience						P-value
	Pre-test			Post-test			
	1-10 N (%)	11-20 N (%)	21-30 N (%)	1-10 N (%)	11-20 N (%)	21-30 N (%)	
Excellent	14 (19.8)	12 (16.9)	10 (14)	27 (38)	18 (25.4)	16 (22.6)	P>0.05
Good	17 (23.9)	10 (14)	5 (7)	4 (5.6)	5 (7)	1 (1.4)	
Moderate	0 (0)	1 (1.5)	2 (2.9)	0 (0)	0 (0)	0 (0)	
Total	31 (43.7)	23 (32.4)	17 (23.9)	31 (43.6)	23 (32.4)	17 (24)	

Discussion

Health education is one of the primary principles for preventing oral and dental diseases and aims to enhance people's lifestyles by encouraging them not to perform harmful behaviors. Moreover, social, cultural, and environmental aspects should be considered when designing educational programs. The current investigation assessed the level of awareness about preventive orthodontics in school hygiene instructors in Sari. It revealed a significant difference between the pre-test and post-test findings, and the instructors improved their awareness after a one-day educational workshop. Consistent with this study, Oshagh et al. also reported an increase in parents' awareness about their children's orthodontic issues after providing them with informative pamphlets (12).

Moreover, Shamsaei et al. investigated the effect of oral health education through role-playing on the health behaviors of mentally challenged male students in Hamedan, Iran. The results showed that this method improved these students' health behaviors and the simplified oral health index (OHI) (13). Furthermore, in a study by Babaee and Kardan, the effect of oral and dental hygiene education on dental caries preventive behaviors among middle school students was quite evident, and the knowledge of all students increased through indirect training using booklets (14). On the other hand, Pandey et al. assessed orthodontic awareness among a group of preadolescents in India and reported a moderate awareness level (15). This difference might be attributed to the difference in the educational programs held in different countries.

Moreover, this investigation revealed no significant association between the participants' level of education and level of awareness. Similar findings were reported by Rafighi et al.; they found that the orthodontics awareness of teachers living in two cities in Iran was unaffected by their level of education (16). Although the level of education in school hygiene instructors did not affect their level of awareness, those with higher levels of education are expected to act on their higher knowledge and provide more informative data for their students.

Years of experience was another factor assessed in this research, which revealed no significant association with the participants' level of awareness. Consistent with the findings, Mansoor et al. evaluated the level of orthodontic awareness in school teachers and parents and reported no significant association between work experience or level of education and orthodontic awareness in both teachers and parents (17).

The main limitation of this study was the lack of surveillance on the participants regarding the use of educational pamphlets and CDs. Therefore, future studies should be performed in more controlled situations to obtain more precise findings.

Since teachers can influence their pupils, providing information for teachers can be an effective way to increase awareness about orthodontics and its benefits for schoolchildren. Therefore, educational workshops and pamphlets should be provided for teachers to train them in sufficient knowledge.

Conclusions

Considering the importance of health education, efficient training should be provided for school hygiene instructors to increase their awareness in the field of preventive orthodontics.

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