Abstract

Objective: Standardized patients play an important role in medical education and it seems that they can be used for improvement of various counseling skills like smoking cessation counseling. Although some studies have confirmed the benefits of this method for smoking cessation counseling training, its positive aspects have yet to be fully recognized. The present study aimed at determining the effect of smoking cessation counseling training with a standardized patient on self-confidence and skills of senior dental students in Shahid Beheshti Dental University during 2010-2011.

Methods: In a controlled semi-experimental trial, 28 term 11 (control group) and 39 term 12 students (test group) were selected and their self-confidence and skills in providing smoking cessation counseling services were first evaluated through a questionnaire. The test group then received smoking cessation counseling training with practicing on a simulated patient according to the evidence-based counseling strategies (the Five As/the Five Rs). At the end of study, students in the two groups were evaluated by the same primary criteria and changes in the self-confidence and skills of the two groups were compared using student t-test and ANOVA.

Results: The mean skills score in the test group was 5.10 and 13.05 before and after the training, respectively. These rates were 5.14 and 5.25, respectively in the control group. The mean score for self-confidence in the test group was 43.19 and 47.13 before and after the training while these rates were 43.75 and 43.32 in the control group, respectively. A significant difference was detected between the two groups in terms of increase in self-confidence (P<0.001) and skills (P<0.001) scores. After matching for age, sex, marital status and baseline self-confidence and skills scores, ANCOVA demonstrated that training with a standardized patient could significantly improve the skills and self-confidence scores of students (both Ps<0.001).

Conclusion: Based on the study results, smoking cessation counseling training with a simulated patient could improve smoking cessation counseling skills and increase the self-confidence of students in the test group compared to controls.

Key words: Simulated patient, Self-confidence, Smoking cessation counseling skills

Introduction:

Cigarette smoking is a global public health hazard resulting in increased rate of preventable morbidity and mortality. It is estimated that tobacco consumption, especially cigarette smoking will be the main cause of morbidity and mortality in the year 2030 (1). Furthermore, various types of tobacco consumption are responsible for 75% of morbidities and mortalities due to oropharyngeal cancer and more than 50% of exacerbations of periodontitis and other oral diseases in humans (2). Despite all the above, a significant number of people in different countries still smoke. Currently, there are about 10 million smokers in Iran and the rate of morbidity and mortality among them is estimated to be about 70,000 individuals per year. If the present trend of tobacco use continues, the related morbidity and mortality will reach 200,000 individuals/year by
Overall prevalence of tobacco consumption among male Iranians increased from 12.6% in 1994 to 16.3% in 1998 (3). Dental offices and clinics are an ideal place to provide patients with smoking cessation counseling services for preventive treatments, screening of oral diseases or simply education of patients. Many patients have regular visits to the dentist. It has been revealed that about 60% of adults and 83% of teenagers in the age group of 15-19 yrs. visit a dentist at least once a year (4). A continuous relationship between patients and their dental care workers provides a suitable situation to offer smoking cessation counseling services to the patients. This method may actually increase the number of quit attempts. In addition to several other methods, standardized patients (SPs) have numerous applications in improving the quality of care and function of students when it comes to providing health care services (5-8). Standardized patients are actor/mentors that have received required trainings to play the role of patients in various clinical situations based on the students’ current needs. These patients provide students with beneficial experiences as a hypothetical patient by telling them symptoms helpful for clinical diagnoses. At the same time, video tapes of these sessions are also available. By watching them after receiving the primary training, students will learn how to interact with actual patients. These methods improve the self-confidence of students when offering counseling services to the patients. Due to several advantages, use of SPs is considered an efficient method for tobacco cessation counseling training (6).

Koerber et al. (2003) used standardized patients for teaching dental students brief motivational interviewing for smoking cessation counseling. They demonstrated that motivational interviewing resulted in increased participation of patients in smoking cessation counseling sessions (7). Walsh et al, in 2007 reported that participants of tobacco cessation counseling training courses with standardized patients developed a positive and receptive attitude towards this method and their counseling skills significantly improved following participation in these training courses (9). In general, various studies have shown that use of standardized patients is an effective and accredited educational method for teaching clinical and interviewing skills (10-12) although there is a critic that this method is not cost-effective (10). Additionally, some studies conducted on this subject have been experimental and their reported results may be biased (9).

Despite the numerous advantages of tobacco cessation counseling training with standardized patients, its effects have not been evaluated from various aspects. The outcomes of this method in different societies and cultures have not been assessed either. Therefore, further investigations are required to evaluate the efficacy and the results of this method in improving counseling skills of students and dentists. Considering all the above, the present study was conducted to determine the effect of tobacco cessation counseling training with standardized patients on self-confidence and skills of senior dental students in Shahid Beheshti Dental University in 2010.

Methods:

This non-randomized controlled trial was performed on 28 term 11 (control group) and 39 term 12 students (test group) in Shahid Beheshti Dental School. A questionnaire was prepared along with compiled scenarios for this study and their validity and reliability were approved by performing a pilot study on 20 students. Face and content validity of the questionnaire were also evaluated and approved by the experts in the Tobacco Control Unit of Masih Daneshvari Hospital and the professors at the Departments of Community Oral Health and Periodontics of Shahid Beheshti Dental University. Research tools included a questionnaire and a play script (with similar history and representing various stages of change for each standardized patient). The first section of the questionnaire assessed the self-confidence of students and contained 12 questions regarding the following domains:

- Student’s ability to start counseling
- Student’s ability to determine the stage of smoker
- Student’s ability to follow up patient after the counseling

Students’ answers to the self-confidence questions were assessed using a five-point Likert
scale (I am not sure at all, I have some doubts, no comment, I’m relatively sure, I am completely sure). Answers were allocated scores from 1 to 5 (respectively) and the total score for each student was calculated. When analyzing the results, “I’m not sure at all” and “I have some doubts” answers and also “I am relatively sure” and “I am completely sure” were combined with each other.

Second part of the questionnaire evaluated the smoking cessation counseling skills of students by using three different scenarios. Standardized patients in these scenarios were representing various stages of change. The questions in this section had been designed on three different domains:
- Determining the patient’s stage of change
- Determining the type of counseling intervention required based on the patient’s status in each stage of change
- Method of follow up for the process of change

At the beginning of the study all students were pre-tested and the results were recorded. The students were then divided into two groups of test and control (term 11 students were considered as the control and term 12 as the test group).

Students in the test group received tobacco cessation counseling training with simulated or standardized patient (SP) according to the evidence-based clinical strategy of the Five As/the Five Rs approved by the World Health Organization. The standardized patient in our study was one person who had received necessary trainings to play the role of a smoker with different scenarios. Training of students in the test group included various stages of smoking cessation counseling services for patients who are ready to quit (5As) and patients who are not interested in quitting (5Rs), determining the smoker’s stage of change and method of continuation and follow up of the counseling program based on various stages of change. This training was completed by observing the receptive and positive attitude of students when providing the simulated patient with effective smoking cessation counseling.

Students in the control group received no training and at the end of study both groups participated in a post-test. Post-test was also done by using the same questionnaire used in the pre-test and three different scenarios. The questionnaire assessed the self-confidence while the scenarios evaluated the smoking cessation counseling skills of students (similar to the pre-test questionnaire). One score was given to every skills question with a correct answer. “I’m not sure at all”, “I have some doubts”, “no comment”, “I am relatively sure” and “I am absolutely sure” in the attitude section were allocated scores from 1 to 5, respectively. Total pre-test and post-test scores of students were calculated. The increase in skills and self-confidence scores of students in the two groups of test and control was assessed using student t-test. ANCOVA was used to determine the effect of training on self-confidence and skills scores of students after matching for age, sex, marital status and baseline skills and self-confidence scores. Reliability of the questionnaire was determined using Cronbach’s alpha and ICC.

Results:

In order to evaluate validity and reliability of calculations after reaching a consensus on the accredited research tool by asking the opinions of experts, Cronbach’s alpha coefficient of internal consistency was used in a pilot study on 28 samples and calculated to be 0.83. Thus, the reliability of the tool was approved considering a cut-off point of 0.7.

Additionally, ICC (intra class coefficient) of the tool was estimated to be 0.887 in the same sample size using test-retest method which was indicative of the stability of data in time.

The mean age was 24.04±0.38 yrs. in term 11 and 25.05±0.59 yrs. in term 12 students. Twenty of term 11 (71.4%) and 28 of term 12 (75.7%) students were females and 8 term 11 (28.6%) and 9 term 12 (24.3%) students were males. Gender of two term 12 students had not been mentioned. Twenty-six (92.9%) term 11 and 31 (83.8%) term 12 students had no previous history of tobacco consumption.

The mean±SD values of pretest and post-test scores of term 11 and 12 students are demonstrated in Tables 1 and 2, respectively. Considering the normal distribution of skills (p=0.396) and self-confidence (p=0.835) pretest
By doing so, statistically significant differences were found in the two groups in skills (P<0.001) and self-confidence (P<0.001) scores. To reach a higher accuracy and eliminating the effects of variables like age, sex, marital status and baseline skills and self-confidence scores on the final scores of students, ANCOVA was used. After matching for the mentioned variables, it was revealed that training could significantly improve the skills and self-confidence scores of students (P<0.001).

Discussion:

All forms of tobacco consumption especially cigarette smoking are considered a threat to the health of oral and dental tissues. Considering the fact that in most countries, particularly in the developed ones, the majority of people have regular dental visits we may take this opportunity to provide smoker patients with smoking cessation counseling and encourage them to quit smoking. Positive role of dentists in offering smoking cessation counseling has been confirmed in several studies. It has been reported that dental clinics have been able to successfully implement tobacco control programs along with other medical fields (13-15). On the other hand, use of standardized patients is considered a suitable method for education of students in various fields of medicine and dentistry. This method has also been noticed as an effective method to improve the skills and capabilities of students and dentists in providing smoking cessation counseling services. The present study evaluated the efficacy of tobacco cessation counseling training with a standardized patient in improving the skills and self-confidence scores of students.

Based on the study results, the mean skills score of students in the test group was 5.10 and 13.05 in the pretest and post-test, respectively. These rates were 5.14 and 5.25 in the control group with no training, respectively. The mean self-confidence score of test group students was 43.19 and 47.13 in the pretest and post-test respectively; whereas, these rates were 43.75 and 43.32 in the controls, respectively. T-test revealed statistically significant differences between the two groups in term of increase in self-confidence (P<0.001) and skills (P<0.001).
scores. Thus, receiving smoking cessation counseling training with a standardized patient could improve the counseling skills and self-confidence of students in the test group compared to controls. Additionally, receiving such training with a standardized patient had a greater effect on improving the self-confidence of test group students compared to their skills. This finding may be due to the positive attitude of control students towards this issue which may be due to the fact that control students might have received some training regarding the hazards of smoking somewhere else. Furthermore, obtaining skills and expertise is a gradual process that occurs in time and requires practice. Greater expertise and skills are achieved through more practice.

In order to achieve higher accuracy and eliminating the effects of variables like age, sex, marital status and baseline skills and self-confidence scores on the final scores of students, ANCOVA was used. After matching for the mentioned variables, it was revealed that training could significantly improve the skills and self-confidence scores of students (P<0.001).

In a similar study by Walsh et al, in 2007 with standardized patients, a significant increase in objective knowledge about tobacco cessation counseling was reported (9). In the mentioned pilot study, knowledge of participants increased after the training and they demonstrated greater self-confidence in following treating tobacco use and dependence (TTUD) guidelines. Walsh et al, in their study were able to improve the self-confidence of participants in providing a tobacco cessation counseling by a mean of 4.47 scores which was lower than the mean score reported in our study (7.95). However, the two studies are similar in that both were able to increase the skills score. Walsh et al, study was conducted on a groups of dentists and residents and the lectures on general health hazards of smoking were given by cancer specialists; whereas, the present study was conducted on dental students and lectures were given by oral medicine specialists who compared to cancer specialists had a more comprehensive knowledge about the periodontal tissues and smoking-related oral lesions as well as precancerous and cancerous lesions and could provide students with greater knowledge in this respect. This issue could create greater self-confidence in students. In contrast, in a study by Adkins (2009) on dental hygienists with standardized patients no statistically significant difference was detected in the knowledge of subjects based on the Kolb learning theories (mean score of knowledge was 12.92 in the test and 11.5 in the control groups)(16) which is in contrast to our finding. However, in the mentioned study, significant differences were detected between the two groups of test and control in terms of total scores of self-confidence and the change in this score was 34.57 in the test and 14.19 in the control group. Additionally, students in the test group gained more confidence. The greatest improvement in confidence was observed in the initiation of smoking cessation counseling (mean score of 2.24 versus 0.83). In the mentioned aspects, our study results were in agreement with those of Adkins. In other words, training results in gaining more knowledge which per se results in improved self-confidence in the test group. Small differences between the two studies may be due to the different understudy population. Dental students generally have a greater knowledge about the adverse effects of smoking on periodontal tissues as the result of their educational curriculum compared to dental hygienists.

Cornuz et al, in 2002 evaluated the efficacy and the outcome of smoking cessation counseling training program for residents using standardized patients. The training program on smoking cessation could significantly improve the quality of physicians' counseling and increase smokers' motivation to quit and rates of abstinence from smoking during the one year follow up (17). In the present study, skills and self-confidence of students in the test group significantly improved after receiving the training. The increase in mean score of skills in the test group in Cornuz et al, study (2002) was equal to 4 points while this increase was equal to 13 points in our study. This considerable difference despite not mentioning the educational method may be attributed to the different method of training provided for the test group and type of workshops in our study and that of Cornuz (2002). Also, the same method of tobacco cessation
counseling training was used by Foley et al, in 2006 on medical students and by Martin and Chewning (2011) on pharmacists. They all reported positive educational results and emphasized on the important role of standardized patients in improving the quality of smoking cessation counseling offered by students (18-19).

According to the Kolb’s learning style inventory, experience transforms into concept through reflection and the concept per se is used as a guide for an active experience and new learning experiences. In concrete experience approach, an individual actively participates in practical educational sessions and in his reflective observations he curiously refers to his learning experiences. In abstract conceptualization one tries to imagine the observed theory or model. Also, in active widespread experiments, one tries to design a model or theory for his future experiences. A statistically significant increase observed in the mean scores of skills and self-confidence of students in the test groups following receiving the training in our study and several others mentioned earlier were indicative of the completion of these three steps in test group students (20).

On the other hand, based on the Roger’s experimental learning theory (1997), the process of learning is facilitated in the following cases:
- When the student completely participates in the process of learning and controls its nature and direction
- When learning is primarily based on exposure and encounter with practical, social, personal or research problems (problem-based learning)
- When self-assessment is used as the main method for assessment of progression or success

It seems that by providing the three abovementioned self-assessment situations in the present study, skills score of students increased following receiving smoking cessation counseling training with standardized patients (21).

Ramseier et al, in 2006 demonstrated that oral health care professionals did not observe a correlation between the theoretical content of educations and clinical training and practice on patients and could not gain positive clinical experience in smoking cessation counseling through effective interventional skills (22). It seems that in this study self-confidence of students following participation in the training with standardized patient and completion of the theoretical content and clinical experiences significantly improved.

Further investigation of the study results revealed that students in the test group had a higher percentage of correct answers to all the questions regarding the diagnosis, stage of change and follow up of standardized patient scenarios at the end of the course; whereas, no significant change in this respect was observed among controls. Furthermore, through one by one evaluation of self-confidence questions, it was revealed that the frequency of “I am relatively or completely sure” answers increased after the training in the test group students. At the same time, the frequency of “I am not sure at all” and “I have doubts” answers decreased among the test group students. Details of these findings are demonstrated in Tables. No significant difference was detected in this respect in the pretest and post-test answers of control students. Thus, it seems that training students with a standardized patient could improve the self-confidence and knowledge of students in providing patients with smoking cessation counseling. This will result in a higher level of counseling skills in private dental offices in the future.

However, it is a reality that this method is more costly compared to giving lectures. Based on Atkins study (2009) a considerable amount of 2000 dollars was spent for the conduction of their experiment which is significant compared to standard principles (16). If the costs of preparation and training of SPs are also considered, this rate will further increase. However, the present study had no cost as the result of cooperation of mentors in the COH Department in holding smoking cessation counseling training courses and calibration of the standardized patient (who in this study was the author of this thesis project). Therefore, if medical and dental universities are interested to use this method to improve the smoking cessation counseling skills of students, they should evaluate and compare the costs of
holding these sessions with their positive results in decreasing future therapeutic costs and allocate a specific budget for this purpose and other community health interventions. It is noteworthy that most expenses related to training with standardized patients are imposed in the primary design of the course and if this form of training continues, the expenses will decrease during the next courses (18). Despite the fact that tobacco cessation counseling training in this study was done with a standardized patient based on different scenarios, tools with approved validity and reliability were used for analysis of the results. Appropriate statistical tests were employed as well. However, generalization of the obtained results must be done with caution and consideration of some limitations among which small sample size in both groups of test and control can be named. There were some possible biases as well like the attentional bias since the students were aware of being in a study and there was a possibility of intentionally giving the correct response to pretend improved function and bias of contamination due to the possibility of receiving education from other sources in the control group which can decrease the differences between the two groups (although in the present study we tried to decrease the effect of this bias by reducing the duration of study). Furthermore, students who volunteered to participate in this study were most probably interested in this subject and thus cannot be the true representatives of the senior dental students in Shahid Beheshti Dental School.

Conclusion:

The pretest and post-test results of this study revealed that smoking cessation counseling training with a standardized patient based on different scenarios of tobacco cessation in dental clinics can significantly improve the self-confidence and counseling skills of dental students. Application of this method can be a step forward towards increased learning, enhanced educational programming and promotion of scientific knowledge and practical and clinical skills of future dentists.

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References:


