DOI: 10.22037/jds.v40i3.41598
Original Article
ISSN 2645-4351

Impact of a Clinical Communication Skill Training Course on the Knowledge of Iranian Dental Students

Mandana Naseri[a], **Mohammad Ali Mozayeni**[a], **Behzad Amooee**[c], **Maryam Amiri**[b]

[a]Professor, Dept. of Endodontics, School of Dentistry, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
[b]Postgraduate Student of Endodontics, School Of Dentistry, Shahid Beheshti University Of Medical Sciences, Tehran, Iran.
[c]Dentistry Student, School of Dentistry, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
Correspondence to Maryam Amiri (email: drmrym91@gmail.com).
(*Submitted: 13 March 2023 – Revised version received: 24 May 2023 – Accepted: 31 May 2023– Published online: Summer 2023*)

Objectives Communication skills are key element of dental practice. In this study, we aimed to evaluate the effects of a communication skill training course on the verbal, listening, and feedback skills of dental students.
Methods A total of 42 (20 males and 22 females) third-year dental students of the School of Dentistry of Shahid Beheshti University of Medical Sciences (Tehran, Iran) were enrolled in this study and asked to complete the Burton GE questionnaire before and after the clinical communication skill training course. The students were instructed through lectures, case-based scenarios, and group discussions. The questionnaire consisted of 18 questions in three dimensions of listening, verbal, and feedback skills, with each area including six questions. The reliability coefficient was determined by measuring Cronbach's alpha coefficient. The validity of the questionnaire was also investigated in this study. The collected data were analyzed using paired t-test.
Results The mean total score of the students increased from 17.07 to 22.17 for the verbal skills, from 11.80 to 15.21 for the listening skills, and from 16.55 to 21.76 for the feedback skills. There were significant improvements in the students' verbal ($P<0.001$), listening ($P<0.001$), and feedback skills ($P<0.001$) after their participation in the communication skill training course. No sex predilection was observed in the baseline and final results.
Conclusion communication skill training courses could have remarkable effects on the improvement of verbal, listening, and feedback skills of dental students.
Keywords Dental Education; Program Evaluation; Scholarly Communication

Introduction

Communication skills are key element of dental practice. A good dentist-patient relationship can promote trust, which is a necessity if a treatment plan is to be initiated and followed. [1] A dentist is expected to extract data regarding the patient's condition, deliver the necessary information to the patients and guide them in evaluating their available options to reach a mutually agreed upon decision. [2, 3] If the communication skill principles are applied in practice, the patient will have reasonable expectations about treatment, and health professionals will face fewer formal complaints and malpractice claims. [4]

Moreover, appropriate dentist-patient interactions help manage anxiety, improving patient compliance, and encouraging oral hygiene and a healthier lifestyle. [5] The direct association between patient satisfaction and the physician's communication skills has been reported in many previous studies. [6-8] In a congress held by the World Health Organization (WHO) in Geneva in 1993, communication skills were deemed critical for all medical students in the two main areas of basic and advanced skills.[9]

Various skills can help build a good dentist-patient relationship, particularly verbal, listening, and feedback skills. A growing emphasis is being placed on communication skills as part of the medical education curriculum. [10] Evidence suggests that communication skill training courses are useful in increasing the knowledge and capacity of dental students in the treatment of patients. [11, 12] Hence, it can be inferred that the acquisition and development of communication skills require proper teaching and learning. Dental students, alike others, are born with different talents and abilities to acquire skills. Communication skills can be addressed and developed via various strategies, such as theory and discussion-based training, simulated patient training, role play, and practice in small groups. [13]

Studies conducted in Iranian dental schools have reported the shortcomings of the educational system in training students in the communication skills. [14-16] Generally, clinical skills are emphasized more than other skills in dental schools, and students mainly learn to interact with patients by imitating their instructors and professors. [17] Recently, a new communication skill training course has been integrated with the dental curriculum of third-year dental students in Iran. In this study, we aimed to assess the outcomes of this course by comparing the students' pre- and post-training scores, using the Barton GE communication skills questionnaire.

Methods and Materials

The research protocol was approved by the Medical Research Ethics Committee of the Dental School of Shahid Beheshti University of Medical Sciences, Tehran, Iran (IR.SBMU.RIDS.REC.1395.234). In this descriptive, analytical, cross-sectional study, a total of 42 (20 males and 22 females) third-year dental students were enrolled. The sampling method was the total enumeration survey method

(census sampling), where all the students passing the communication skill training course were considered eligible and enrolled in the study.

Data were collected using the Burton GE questionnaire before and after the students passed the communication skill training course in 2017. [18] The Burton GE questionnaire is a tool to measure the communication skill level and progress, using 18 questions about three components: verbal, listening, and feedback skills. The Persian version of this questionnaire was used in this study. The students answered the questions with the following options: "totally disagree", "partially disagree", "not sure", "partially agree", and "totally agree"; scores 1-5 were assigned to each question. To evaluate the validity of the questionnaire, five faculty members reviewed the questions and evaluated their level of difficulty and apprehensibility. Subsequently, they were reviewed and revised based on the comments. Moreover, to determine the reliability of the questionnaire, 16 second-year students, who had not previously participated in any communication skill training courses, were asked to complete the questionnaire twice within intervals of two weeks.

In the first session of the course right before the initiation of training, the questionnaires were completed after obtaining the participants' consent. The training course consisted of sessions on the importance of communication skills, current barriers to learning skills, and various basic and advanced communication skills, such as verbal and nonverbal skills, active listening, and feedback skills. Each session consisted of a one-hour active lecture and two hours of practical tasks using methods, such as case-based scenarios, class role-play scenarios, group discussion, and movie discussion, which were instructed by dentists who had been previously trained on communication skills and advanced medical education. Moreover, the students were asked to complete the assigned homework during the course to receive feedback on their performance; in this way, a formative evaluation was performed. All the participants successfully finished the course and completed the questionnaire again in the final session. Pretest-posttest differences were calculated using the data extracted from the questionnaire.

The collected data were analyzed using SPSS Version 22 (SPSS Inc., Chicago, IL, USA). The mean and coefficient of variation (CV) for the scores of students were calculated and compared before and after the course separately, using paired *t*-test by considering sex differences. The reliability coefficient was determined by measuring the Cronbach's alpha coefficient. The significance level was set at 0.05.

Results

A total of 42 third-year dental students (mean age, 20±2 years), who completed the communication skill training course, participated in this study. The reliability of the questionnaire was approved by comparing the total scores of students who completed the forms in an interval of two weeks without participation in the training course. The Cronbach's alpha coefficient was 0.834 for verbal skills, 0.754 for listening skills, and 0.919 for feedback skills.

The mean total scores of verbal skills were 17.07 and 22.17 before and after the training course, respectively. The mean total score of the questionnaire increased from 11.80 to 15.21 for the listening skills and from 16.55 to 21.76 for the feedback skills (Table 1). There was a significant difference regarding the verbal (P<0.0001), listening (P<0.001), and feedback (P<000.1) skills before and after participation in the communication skill training course.

Table 1- Barton GE questionnaire scores before and after participation in the communication skill course

Skill	Phase	Mean	Standard deviation	Median	Standard error	Minimum	Maximum
Verbal	Pre-course	17.07	6.07	19.0	0.94	6	26
	Post-course	22.17	4.13	22.0	0.64	15	30
Listening	Pre-course	11.88	3.23	12.0	0.49	6	20
	Post-course	15.21	4.99	13.5	0.77	9	25
Feedback	Pre-course	16.55	5.39	18.0	0.83	6	24
	Post-course	21.76	3.99	21.0	0.62	12	30

Comparison of the questionnaire scores according to sex showed no significant differences between males and females in terms of the pre-intervention verbal skills (P=0.59), pre-intervention listening skills (P=0.75), and pre-intervention feedback skills (P=0.36). Also, there were no sex differences regarding the post-intervention verbal skills (P=0.59), post-intervention listening skills (P=0.87), and post-intervention feedback skills (P=0.78) (Table 2). According to the results of paired *t*-test, improvement in verbal skills in males (P<0.03) and females (P<0.001), improvement of listening skills in males (P<0.005) and females (P=0.006), and also improvement of feedback skills in males (P<0.004) and females (P<0.001) were statistically significant.

Although females tended to show slightly better improvements in verbal skills (5.77±5.73) compared to males (4.35±8.47), and males (4.25±5.96) showed better improvements in listening skills compared to females (2.5±5.92), differences were not statistically significant. Similarly, there was no significant difference between males and females concerning the extent of improvement in verbal (P=0.52), listening (P=0.35), and feedback (P=0.77) Improved communication skills can be gained through participation in a communication skill training course.

Table 2- Gender-specific Barton GE questionnaire scores before and after participation in the communication skill course

Skills	Groups	Mean	Standard deviation	Standard error	95% confidence interval	
					Lower	Upper
Verbal	males	4.35	8.47	1.89	0.38	8.32
	females	5.77	5.53	1.18	3.32	8.22
	Overall	5.09	7.03	1.09	2.9	7.29
Listening	males	4.25	5.96	1.33	1.46	7.04
	females	2.5	5.92	1.26	0.12	5.12
	Overall	3.33	5.93	0.92	1.48	5.18
Feedback	males	5.55	7.62	1.7	1.98	9.12
	Females	4.91	6.18	1.32	2.17	7.65
	Overall	5.21	6.82	1.05	3.09	7.34

Discussion

Currently, the need to integrate communication skills into the curricula of dental schools is evident to many decision-makers. [16, 19] Shahid Beheshti Dental School is one of the most competitive schools in Iran. The present results can be attributed to the community of Iranian dental students; therefore, it is suggested to conduct similar studies using this questionnaire in other dentistry schools. In this study, the mean progress of undergraduate students was evaluated in three areas of communication skills (i.e., verbal, listening, and feedback) using the Barton GE questionnaire to appraise the efficacy of the communication skill training course.

The Barton GE questionnaire, designed by Barton in 1990, is considered a suitable tool for evaluating the level and progress of student's communication skills. It contains 18 questions on three components of communication skills described above. The validity of this questionnaire was evaluated to be fair, according to reviewers who were asked to evaluate the apprehensibility and difficulty of the questions. Moreover, the reliability of the questionnaire was investigated by measuring Cronbach's alpha coefficients. Overall, a questionnaire is considered reliable if the alpha coefficient is above 0.7. [20] In the present study, the alpha coefficient was above 0.7 for all three domains of verbal, listening, and feedback skills.

Additionally, in a study by Sangappa et al. in India, third-year dental students participated in a communication skill training course, comprising six sessions of lectures and simulated patient training. Based on their findings, the post-intervention scores were significantly higher than the pre-intervention scores. [21] In another study by Alvarez et al., a total of 81 dental students participated in a preclinical experimental communication skills course. They found that the students' communication skills were significantly stronger after the workshop, which is consistent with our results. [11]

In another similar study, Mascarenhas et al. evaluated the improvement of communication skills in 43 postgraduate dental students after simulation-based education. They reported the immediate benefits of their skillfulness and reliance on their expertise when communicating with the patients and their caregivers; empathy and professionalism were also positively influenced. [22] The present results showed significant improvements in the communication skills of students in all three areas of verbal, listening, and feedback skills after the students participated in the course. However, this positive change is not merely dependent on participation in the training course, since variables, such as the educational method and the course instructor, could influence the results; therefore, the selection of the best educational strategy is crucial for more achievements.

In the past decades, there has been a growing understanding among the dental community that dental education must incorporate professionalism and communication skills in addition to the technical aspects of dentistry. Considering the subject, nature of attendees, and time limitations, the instructor must select suitable methods. In this study, various methods, such as active lectures, case-based scenarios, role-play, group discussion, and movie discussion, were used. Meanwhile, the learning process must be interactive, as it involves feedback and constant evaluation of student's performance. [23] In the present study, the students' performance was regularly assessed and discussed after each task for formative feedback. [13] Similar courses are suggested at the beginning of clinical practice when students are in their most responsive phase, although they need to be repeated in the following years to establish an everyday practical skill. In this regard, a study by Hannah et al. showed that students preferred to participate in this course before the third year and to repeat it in the following years. [23] In the current study, the course was introduced in the third year before the begining of the clinical course. However, as the effect of these instructions diminishes over time, other courses in the following years and even after graduation must be planned to maintain the skills. [24, 25]

Based on the present findings, no sex predilection was observed in students' progress. Overall, by using various learning methods of communication skills, both females and males developed the skills efficiently and showed significant improvements in all three skills after the course. The verbal skill development was slightly better in females, whereas males developed better listening skills; however, the difference was insignificant.

Finally, it should be noted that the communication skill training course implemented in this study was obligatory

for all students, which might have encouraged them to pay more attention and put more effort into the course. Further studies on the effects of such courses on the student's performance in patient treatment are suggested. Also, the questionnaire can be administered again in the last year of dental education to explore the durability of instructions.

Conclusion

To the best of our knowledge, this is the first study evaluating the effectiveness of a communication skill training course incorporated into the curriculum of a dental school in Iran. Based on the present results, a communication skill training course can have remarkable effects on the improvement of verbal, listening, and feedback skills of students, with no significant difference between females and males. The present findings are of importance to policymakers and organizers of dental curricula.

Acknowledgments

We would like to thank Mehdi Azizian for his assistance in the data collection process. This research received no financial or material support.

Conflict of Interest

No Conflict of Interest Declared ■

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How to cite:
Naseri M, Mozayeni MA, Amooee B, Amiri M. Impact of a Clinical Communication Skill Training Course on the Knowledge of Iranian Dental Students. J Dent Sch 2022;40(3):107-110.