



### Design and implementation of a clinical communication skills training course for dental students at Mashhad University of Medical Sciences

Pegah Mosannen Mozaffari<sup>1</sup>, Abbas Makarem<sup>2</sup>, Mehri Yavari<sup>3\*</sup>, Mehrzad Khorshid<sup>4</sup>, Alireza Sarraf Shirazi<sup>5</sup>, Maryam Amirchaghmaghi<sup>1</sup>, Sharareh Karimi<sup>6</sup>

<sup>1</sup>Oral and Maxillofacial Diseases Research Center, School of Dentistry, Mashhad University of Medical Sciences, Mashhad, Iran

<sup>2</sup>Dental Research Center, School of Dentistry, Mashhad University of Medical Sciences, Mashhad, Iran

<sup>3</sup>Medical Sciences Education Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

<sup>4</sup>Dentist, Mashhad, Iran

<sup>5</sup>Department of Pediatric Dentistry, School of Dentistry, Mashhad University of Medical Sciences, Mashhad, Iran

<sup>6</sup>Provincial Health Center, Health Department, Mashhad University of Medical Sciences, Mashhad, Iran

\*Department of Medical Education, School of Medicine, Mashhad University of Medical Sciences, Azadi Sq, Mashhad, 9189877208 Iran

Tel: +98 9155029884  
Email: yavarim@mums.ac.ir

### تصميم وتنفيذ دورة تدريبية لمهارات الاتصال السريري لطلاب طب الأسنان في جامعة مشهد للعلوم الطبية

الخلفية: نظرا لأهمية تعليم مهارات الاتصال في العلوم الطبية والحاجة إلى منهج مناسب للتعليم السريري، تهدف هذه الدراسة إلى تصميم وتنفيذ منهج مهارات الاتصال السريري لطلاب طب الأسنان في السنة الثالثة في جامعة مشهد للعلوم الطبية.

الطريقة: شملت هذه الدراسة البحثية العملية 60 طالباً من طلاب طب الأسنان في السنة الثالثة. تم تطوير البرنامج التعليمي على أساس نموذج التدريب على مهارات الاتصال - 3 عناصر ونموذج معهد التطوير التعليمي (IDI). تم تصميم أساليب التدريس التفاعلية التي تركز على الطالب من خلال تضمين التدريس القائم على الفريق، والمناقشة الجماعية، والمحاضرات القائمة على العمل، وتمثيل الأدوار، واستراتيجيات تطبيقات الوسائط المتعددة. تم تقديم الدورة على مدار 18 جلسة، مدة كل منها 90 دقيقة، من قبل أساتذة مهارات الاتصال وطب الأسنان، كدورة تعتمد على ورشة عمل بقيمة رصيد واحد في الفصل الخامس من برنامج طب الأسنان العام. وتم تقييم الطلاب فيما يتعلق بمعارفهم ومهاراتهم في نهاية الدورة.

النتائج: معظم مهارات الاتصال المتوقعة، بما في ذلك بدء الجلسة وإنشاء الاتصال وجمع البيانات والأخذ في الاعتبار وجهة نظر المريض وتوفير المعلومات والاتفاق المتبادل وإنهاء الجلسة، كانت في مستوى جيد بعد تطبيق هذا البرنامج. كان أداء الطالب أفضل من نظرائه الذكور في مختلف جوانب الاتصال، على الرغم من ملاحظة وجود فروق ذات دلالة إحصائية فقط في مهارات تقديم المعلومات والاتفاق المتبادل، وإنهاء الجلسة. ( $P = 0.032$ )

الخلاصة: يمكن أن يكون استخدام دورة مهارات الاتصال السريري لطلاب طب الأسنان مفيداً، ومع إجراء المزيد من الدراسات في هذا المجال وفحص فعاليتها في المزيد من مدارس طب الأسنان، يمكن تقديمها إلى كليات طب الأسنان الأخرى أيضاً.

الكلمات المفتاحية: التعليم الطبي، طلاب طب الأسنان، تعليم طب الأسنان، المناهج الدراسية، مهارات الاتصال

**Background:** Given the importance of communication skills education in medical sciences and the need for an appropriate curriculum for clinical education, this study aimed to design and implement a clinical communication skills curriculum for third-year dental students at Mashhad University of Medical Sciences.

**Method:** This action research study included 60 third-year dental students. The educational program was developed based on the Communication Skills Training-3 Elements Model and Instructional Development Institute (IDI) model. Interactive student-centered teaching methods were designed by including team-based teaching, group discussion, action-based interactive lectures, role-playing, and multimedia application strategies. The course was delivered over 18 sessions, each 90 minutes long, by communication skills and dentistry professors, as a workshop-based course worth 1 credit in the fifth semester of the general dentistry program. The students were evaluated regarding their knowledge and skills at the end of the course.

**Results:** Most of the expected communication skills, including starting the session and establishing a connection, gathering data, considering the patient's perspective, providing information, mutual agreement, and ending the session were at a good level after the implementation of this program. Female students performed better than their male counterparts in various communication aspects, although statistically significant differences were only observed for the skills of providing information, mutual agreement, and ending the session ( $P=0.032$ ).

**Conclusion:** Using this clinical communication skills course for dental students can be beneficial, and with further studies in this field and examining its effectiveness in more dental schools, it can be presented to other dental schools as well.

**Keywords:** Medical Education, Dental Students, Dental Education, Curriculum, Communication Skills

### طراحی و اجرای برنامه آموزشی مهارت‌های ارتباطی بالینی دانشجویان دندان پزشکی دانشگاه علوم پزشکی مشهد

**زمینه و هدف:** با توجه به اهمیت آموزش مهارت‌های ارتباطی در علوم پزشکی و ضرورت طراحی و تدوین برنامه اختصاصی مناسب برای آموزش‌های بالینی، این مطالعه با هدف طراحی و اجرای برنامه آموزشی مهارت‌های ارتباطی بالینی برای دانشجویان دکتری حرفه‌ای دندان پزشکی دانشگاه علوم پزشکی مشهد انجام گردید.

**روش:** این مطالعه از نوع اقدام پژوهی است. شصت دانشجویی سال سوم دندان پزشکی انتخاب شدند. طراحی برنامه آموزشی بر اساس مدل سه عنصری آموزش مهارت‌های ارتباطی و الگوی انستیتیوی توسعه آموزشی (IDI) صورت پذیرفت. راهبردهای آموزشی با رویکرد تعاملی و دانشجو محور به روش‌های آموزش گروهی، بحث گروهی، آموزش مبتنی بر عمل از طریق سخنرانی تعاملی برنامه‌ریزی شده، ایفای نقش و کاربرد چندرسانه‌ای‌های آموزشی طراحی شد. این برنامه بصورت یک واحد درسی کارگاهی در نیمسال تحصیلی پنجم ارائه گردید. برنامه برای همه دانشجویان طی 18 جلسه 90 دقیقه‌ای توسط اساتید مهارت‌های ارتباطی و دندان پزشکی اجرا گردید. در پایان دانشجویان از نظر دانش و مهارت مورد ارزیابی قرار گرفتند.

**یافته‌ها:** بیشتر مهارت‌های مورد انتظار شامل شروع جلسه و ایجاد ارتباط، جمع‌آوری داده، توجه به دیدگاه بیمار و ارائه اطلاعات، توافق دوطرفه و پایان دادن جلسه در سطح خوبی بود. یافته‌ها نشان داد که دانشجویان زن از دانشجویان مرد عملکرد بهتری داشتند، البته این تفاوت فقط در مهارت ارائه اطلاعات، توافق دوطرفه و پایان دادن به جلسه معنادار بود ( $P=0.032$ ).

**نتیجه‌گیری:** استفاده از برنامه آموزشی مهارت‌های ارتباطی بالینی برای دانشجویان دندان پزشکی مفید است و در صورت مطالعات بیشتر در این حوزه و بررسی اثربخشی در مراکز آموزشی بیشتر قابل ارائه به سایر دانشکده‌های دندان پزشکی نیز می‌باشد.

**واژه‌های کلیدی:** آموزش پزشکی، آموزش دندان پزشکی، دانشجویان دندان پزشکی، کوریکولوم، مهارت‌های ارتباطی

### مشهد یونیورسٹی آف میڈیکل سائنسز میں داتوں کے طلباء کے لیے کلینکل کمیونیکیشن سکلز ٹریننگ کورس کا ڈیزائن اور نفاذ

**پس منظر:** طبی علوم میں مواصلاتی مہارت کی تعلیم کی اہمیت اور طبی تعلیم کے لیے ایک مناسب نصاب کی ضرورت کے پیش نظر، اس مطالعے کا مقصد مشهد یونیورسٹی آف میڈیکل سائنسز میں تیسرے سال کے ڈیٹل طلباء کے لیے کلینکل کمیونیکیشن سکلز کے نصاب کو ڈیزائن اور لاگو کرنا تھا۔

طریقہ: اس ایکشن ریسرچ اسٹڈی میں ڈیٹل کے تیسرے سال کے 60 طلباء شامل تھے۔ تعلیمی پروگرام کو کمیونیکیشن سکلز ٹریننگ-3 ایلیمنٹس ماڈل اور انسٹرکشنل ڈیولپمنٹ انسٹی ٹیوٹ (IDI) ماڈل کی بنیاد پر تیار کیا گیا تھا۔ انٹرایکٹو طلباء پر مبنی تدریسی طریقوں کو ٹیم پر مبنی تدریس کو شامل کر کے ڈیزائن کیا گیا تھا۔ گروپ ڈسکشن، ایکشن پر مبنی انٹرایکٹو لیکچرز، رول پلیئنگ، اور ملٹی میڈیا ایپلیکیشن کی حکمت عملی۔ یہ کورس 18 سیشنز پر دیا گیا، ہر ایک 90 منٹ طویل، کمیونیکیشن سکلز اور دندان سازی کے پروفیسرز کے ذریعے، ورکشاپ پر مبنی کورس کے طور پر پانچویں میں 1 کریڈٹ کا۔ دندان سازی کے عمومی پروگرام کا سمسٹر۔ کورس کے اختتام پر طلباء کو ان کے علم اور مہارت کے حوالے سے جانچا گیا۔

**نتائج:** زیادہ تر متوقع مواصلاتی مہارتیں، بشمول سیشن شروع کرنا اور رابطہ قائم کرنا، ڈیٹا اکٹھا کرنا، مریض کے نقطہ نظر پر غور کرنا، فراہم کرنا۔ اس پروگرام کے نفاذ کے بعد معلومات، باہمی معاہدہ، اور سیشن کا اختتام اچھی سطح پر تھا۔ خواتین طالبات نے مواصلات کے مختلف پہلوؤں میں اپنے مرد ہم منصبوں سے بہتر کارکردگی کا مظاہرہ کیا، حالانکہ اعداد و شمار کے لحاظ سے اہم فرق صرف معلومات فراہم کرنے کی مہارتوں، باہمی اتفاق، اور سیشن کا اختتام ( $P=0.032$ )۔

**نتیجہ:** داتوں کے طالب علموں کے لیے اس کلینکل کمیونیکیشن سکلز کورس کا استعمال فائدہ مند ہو سکتا ہے، اور اس شعبے میں مزید مطالعہ کرنے اور مزید داتوں کے اسکولوں میں اس کی تاثیر کا جائزہ لینے کے ساتھ، اسے دوسرے داتوں کے اسکولوں میں بھی پیش کیا جا سکتا ہے۔

**مطلوبہ الفاظ:** طبی تعلیم، داتوں کے طلباء، داتوں کی تعلیم، نصاب، مواصلات کی مہارتیں

## INTRODUCTION

The importance of clinical training in medical sciences is not hidden to anyone, so that in all fields of medical sciences, including dentistry, more than half of the entire training course takes place practically and at the bedside. In performing clinical skills, having the required and up-to-date knowledge as well as sufficient motivation to work in clinical environments, as well as knowing the correct way of performing processes and skills are of the most basic concepts (1). Therefore, improving the quality of education is always one of the main goals of those involved in higher education in the health system. However, in the curriculum planning system of Iran, the main or exclusive attention is focused on the authoring of textbooks and the headings of university courses, and the framework or guide of educational programs is a relatively unknown phenomenon. Therefore, designing and compiling the educational program is considered one of the professional duties and of course necessary for the academic faculty members of the universities so that they can adjust their programs according to the special characteristics and conditions of the existing educational environment and atmosphere. The model of the Educational Development Institute (IDI = Instructional Development Institute) is one of the most famous models of educational development and has a wide application in educational programs (2, 3), which can be used in the reform and improvement of university educational processes.

Learning clinical skills can be defined as making permanent changes in the ability to perform a task that is the result of training, practice and experience (4). In the field of medicine and Para medicine, establishing effective communication with patients is one of the necessities of medicine and a condition for success in performing clinical skills in the field, because good communication between the doctor and the patient not only improves the health of the patient, but also leads to an increase in the satisfaction of the patient and the doctor (5). Also, there are new studies based on the applications of artificial intelligence (AI) and virtual reality (VR) to facilitate the communication between the doctor and the patient, which shows the importance of this two-way communication (6). On the other hand, taking the history and performing a correct and accurate physical examination is the way to reach the correct diagnosis of the patient's problem, and this is important when the dentist, by using communication skills, can interact constructively with the patient. Therefore, learning effective communication skills will improve the clinical skills of students (7).

Despite the general agreement on the usefulness of teaching communication skills, there are major methodological challenges in the field of how to teach these skills (8). The evidence indicates that experimental and practical methods are preferable to theoretical methods in this field (9, 10). Based on what was explained, effective communication between doctors and patients significantly affects treatment planning and ultimately patient satisfaction (11). Therefore, teaching communication skills as a part of the dental curriculum and as one of the key areas of medical science education leads to increasing the dentist's ability to

understand and provide appropriate answers to the patients' needs and their opinions (12). However, despite the importance of communication skills among dental students, no standard training in this regard has been planned in dental schools (13). The findings of the study by Emadzadeh et al. (2004) in Mashhad University of Medical Sciences showed that the studied clinical assistants did not have a favorable condition in terms of communication skills and less than fifty percent of them had a favorable condition in terms of communication skills (14). In the study of Alaei et al. (2014), the results indicated that the level of empathy among the dentists under study was lower than the expected conditions, which necessitates the need for educational planning to strengthen empathy among dentists (15).

Considering the importance and necessity of the problem, teaching communication skills is one of the important subjects of dental training in universities of medical sciences, and it is necessary to acquire original learning experiences in order to achieve an effective educational program. Since 2011, the revised dental curriculum has been implemented in universities across the country and the course "Clinical Communication Skills" is presented in it. Considering the exception of the general objectives of the course, no instructional package that includes the complete components of the educational program has been provided for this course; therefore, in order to achieve the maximum educational effectiveness of this course, attitudinal dimensions are much more important than knowledge dimensions. This research was conducted with the aim of designing and implementing clinical communication skills training program and its evaluation in dental students of Mashhad University of Medical Sciences.

## METHODS

This study was done by action research method. The study population consisted of third-year dental students of Mashhad University of Medical Sciences. The research sample was estimated by census method and included 60 third-year students studying at the Faculty of Dentistry. This research was designed and implemented based on the three-element model of communication skills training (CST-3EM) (16). This model is shown in Figure 1.

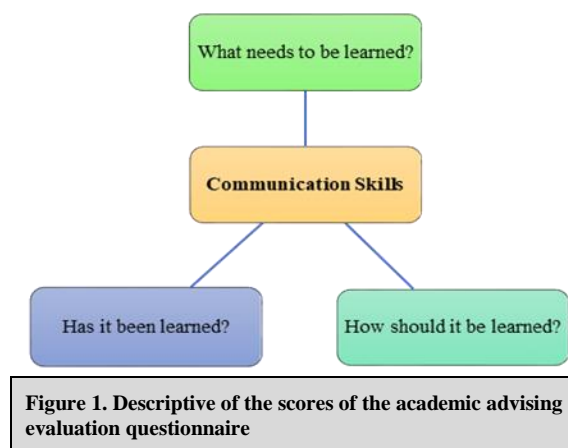


Figure 1. Descriptive of the scores of the academic advising evaluation questionnaire

This study was carried out in three main steps according to the model of the Educational Development Institute (3). In the implementation phase of the program, in the form of a 60-minute session, introducing the course and the expected learning outcomes, consisting of the skills of starting the meeting and creating communication, the skill of gathering information, the skill of paying attention to the patient's point of view and the skill of presenting information, mutual agreement at the end of the course. Achieving these goals was mandatory for all students at the end of the training. Then, during 9 weeks (two sessions of 90 minutes each week), clinical communication skills with interactive and student-centered educational approaches was taught through using group training methods, group discussion, practice-based training through planned interactive lectures, and the application of educational multimedia such as video. After the training course, the students were divided into groups of 6-8 people and each group was supervised by an expert (specialist in clinical communication skills) for 3 weeks. In this course, students were evaluated using the end-of-course test and self-evaluation checklist. In this way, the assignments after preparation to determine the validity of the content were shown to a number of faculty members (expert professors in this field who were not course instructors) and students. Practical assignments were graded (10 marks) and judged by guest professors. To evaluate the theoretical part, students were asked to answer a multiple-choice written exam. 3 marks from the final exam were assigned to the students' active participation in the practical homework review sessions. 2 marks were assigned to attendance. At the time of entering the clinical department, students' practical skills were checked using a self-assessment checklist. After the trial implementation of the course, information gathering and evaluation of the educational program, the results of the evaluation were taken into consideration and final decisions were made for the full implementation of the program.

**RESULTS**

After designing and implementing the clinical communication skills training program for dental students, the expected outcomes of the participants were evaluated. As can be seen in Table 1, the majority of students participating in the training course are in the medium and good groups in terms of evaluating their clinical communication skills. However, in the skill of 'paying attention to the patient', the number of students who were in the "weak" group in terms of this skill indicated that there is a need to pay more attention to this skill and revise the designed educational program.

Table 2 compares the clinical communication skills based on the gender of the students participating in the study. In general, the findings indicated that female students performed better than male students in communication skills, although this difference was only statistically significant in the skills of presenting information, mutual agreement, and ending the meeting. (P=0.032).

**DISCUSSION**

Communication, as one of the important aspects of the interaction between patients and medical service providers,

can help improve healthcare services (17). The purpose of this research was to design and implement a clinical communication skills training program for dental students of Mashhad University of Medical Sciences. According to the results obtained from this study, the frequency of the skill 'starting the meeting and establishing communication in the participating students' was in the good rank of 65% and in the skill of 'gathering information' it was in the good rank of 53.3%. These results were in line with Matthew et al., concluding that the students who received the desired training performed better in the mentioned skills (11). It was also found in the results that the frequency of the skill of 'paying attention to the patient's point of view' was in the average rank of 43.3% and the frequency of the skill of 'presenting information, mutual agreement and ending the meeting' was in the average rank of 56.7%. According to the findings of the study, it seems that the training of dental students in the field of increasing the skill of paying attention to the patient's point of view should be reviewed and effective training should be provided. Of course, Jabari Far et al., also came to the conclusion in their research that dental assistants have more effective communication skills and better professional ethics in dealing with patients than dental students (18); however, this aspect can also be comparable with the results of the present research. In other words, perhaps one of the reasons for obtaining an average rank in the skills of 'paying attention to the patient's point of view' is the less experience of students in dealing with patients. Mousavi and his colleagues confirmed this fact that holding communication skills training workshops is useful for dental students and their patients and has good effects on the dentist-patient bond (13). According to Tabeii et al., although the assistants' communication skills have been evaluated at an acceptable level, but in a number of cases such as 'obtaining permission from the patient to start the examination', 'explaining to the patient about his problem', and 'participating the patient in the decision' there is a need

**Table 1. Evaluation results of dental students in terms of clinical communication skills**

Skill	Classification	Number (Percentage)
Start meeting and establish communication	Weak	-(0)
	Medium	21 (36)
	Good	39 (65)
Data collection	Weak	2 (3.3)
	Medium	26 (43.3)
	Good	32 (53.3)
Attention to the patient's point of view	Weak	11 (18.3)
	Medium	26 (43.3)
	Good	23 (38.3)
Providing information, mutual agreement, and ending the meeting	Weak	2 (3.3)
	Medium	34 (56.7)
	Good	24 (40)
The total number of participating students		60 (100)

Table 2. Comparison of clinical communication skills based on the gender of participating students

Skill	Gender	Classification	Number (Percentage)	Significance level ( <i>p-value</i> )
Start meeting and establish communication	Female	Weak	-	0.284
		Medium	11(29.7)	
		Good	26(70.3)	
	Male	Weak	-	
		Medium	10(43.5)	
		Good	13 (56.5)	
Data collection	Female	Weak	2 (5.4)	0.817
		Medium	14 (37.8)	
		Good	21 (56.8)	
	Male	Weak	-	
		Medium	12 (52.2)	
		Good	11 (47.8)	
Attention to the patient's point of view	Female	Weak	5 (1.5)	0.194
		Medium	16(43.2)	
		Good	16 (43.2)	
	Male	Weak	6 (26.1)	
		Medium	10 (43.5)	
		Good	7 (30.4)	
Providing information, mutual agreement and ending the meeting	Female	Weak	-	0.032
		Medium	19 (51.4)	
		Good	18 (48.6)	
	Male	Weak	2 (8.7)	
		Medium	15 (65.2)	
		Good	6 (26.1)	

for more review and interaction and more accurate evaluation (19). Based on the results of the present research, the skills of 'paying attention to the patient's point of view and providing information, mutual agreement and ending the meeting' need to be strengthened and revised in the teaching and learning process of the clinical communication skills training course. Zamani et al., also stated that the use of educational tools is effective in communicating with patients and training students in this field should be included in the educational texts of doctors (20). Mimarpour et al., found in their research that teaching communication skills for dental students who have clinical exposure is one of the requirements (21) and this study is in line with the results of the present research relating to the positive effect of teaching communication skills among dental students. Richa et al., also came to the conclusion that there is a need to integrate the communication skills course in the dental curriculum. Therefore, the results of this study can be used as a valuable guide in the integration of the clinical communication skills course in the dental curriculum. In general, the opportunities to learn communication skills during the dental course should always be continued (22) and special emphasis should be placed on the need to teach dental students about the acquisition of communication skills (23).

Those involved in medical education should design the training courses necessary to strengthen the clinical communication skills of the students in the fields of medical sciences and supervise their effective implementation. Also, the comparison of the results of this research with the conducted studies indicates that the training of communication skills is an essential component for the educational system in the field of health and treatment, especially in clinical fields.

#### Ethical considerations

Ethical issues including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been completely observed by the authors. This article is extracted from a student's thesis to receive a master's degree in Medical Education with the Code of ethic: IR.MUMS.MEDICAL.REC.1397.709.

#### ACKNOWLEDGEMENT

We thank the dental students of Mashhad University of Medical Sciences who helped us in the implementation of this research. Thanks to the Research Vice-Chancellor of

Mashhad University of Medical Sciences, who took the trouble to finance this project.

of student thesis No: R1283 and Grant No: 971126, with the support of Research Vice-Chancellor of Mashhad University of Medical Sciences.

**Financial Support:** This research was carried out in the form

**Conflict of Interest:** None

## REFERENCES

1. World Health Organization and JHPIEGO. Manual R. Effective Teaching: A Guide for Educating Healthcare Providers. 2005. WHO Press. ISBN: 9241593806
2. Gaff JG. General Education: The Changing Agenda. The Academy in Transition: ERIC; 1999.
3. Fardanesh H. Theoretical Foundation of Instructional Technology. SAMT. 2009. Persian.
4. Monagheb E ZA, Shams B, Farajzdegan Z. Effect of communication skills training by video feedback on capability Clinical interns. Iranian Journal of Medical Education. 2010;10(2):164-70.
5. Memarpour M, Bazrafkan L, Zarei Z. Assessment of dental students' communication skills with patients. Journal of Advances in Medical Education & Professionalism. 2016;4(1):33-8.
6. Antel R, Abbasgholizadeh-Rahimi S, Guadagno E, Harley JM, Poenaru D. The use of artificial intelligence and virtual reality in doctor-patient risk communication: A scoping review. Patient Education and Counseling. 2022 Oct 1;105(10):3038-50.
7. Madjar N, Kushnir T, Bachner YG. Communication skills training in medical students: do motivational orientations predict changes over time in psychosocial attributes? Advances in health sciences education : theory and practice. 2015;20(1):45-57.
8. Hausberg MC, Hergert A, Kröger C, Bullinger M, Rose M, Andreas S. Enhancing medical students' communication skills: development and evaluation of an undergraduate training program. BMC Med Educ. 2012;12(1):16.
9. Shankar J, Ip E, Khalema E, Couture J, Tan S, Zulla RT, et al. Education as a Social Determinant of Health: Issues Facing Indigenous and Visible Minority Students in Postsecondary Education in Western Canada. International Journal of Environmental Research and Public Health. 2013;10(9):3908-29.
10. Nielsen AE, Noone J, Voss H, Mathews LR. Preparing nursing students for the future: an innovative approach to clinical education. Nurse education in practice. 2013;13(4):301-9.
11. Mathew T, Shetty A, Shetty C, Narasimhan D, Shetty S, Hegde M. Comparison of communication skills between Undergraduate Dental students with or without prior training in effective communication. Journal of Health and Allied Sciences NU, 2015. 8-11.
12. Sangappa SB. Communication Skills for Patient Care using a Dental communication assessment tool by the Graduate Students in an Indian Dental School. Oral Health Dent Manag- 6th Indian Dental Congress. 2015;14(6):44.
13. Moosavi H NS, Vosugh I. Study the Effects of Communication Skills Training on Satisfaction and Anxiety Level of Dentistry Students and their Patients. Journal of Dentistry and Oral Care Medicine. 2015;1(3).
14. Emadzadeh A, Yavari M, Ebrahimzadeh S, Ahmadian N. The effects of dental graduate students' communication skills on patients' satisfaction in Mashhad University of Medical Sciences in 2004. Journal of Mashhad Dental School. 2004;28(1,2):69-76.
15. Alaei A FT, Chaharkameh M. Survey of the attitude of dentists towards "dentist and patient empathy" and its related factors in the year 2014. Journal of Research in Dentistry. 2015;12(4):208-14.
16. Emadzadeh, Ali. Hazavehei, S. Moeini, B. Moghimbeigi, A. Karimi Moonaghi, H. "Curriculum Development for Medical Students' Communication Skills Training: An Instructional Model Presentation". Thesis for the Degree of Ph.D. in Health Education. Hamadan University of Medical Sciences. Faculty of Health February 2016.
17. Laorujiralai K. Dentist-patient Communication: How do patients make sense of oral health information and translate it into action? Submitted to the faculty of the University Graduate School in partial fulfillment of the requirements for the degree Master of Arts in the Department of Communication Studies, Indiana University. 2016.
18. Jabarifar SH, K. Khalifeh Soltani, FS. Shamir, H. Nilchian, F. Evaluation of communication skills and ethics of students and residents faculty of Isfahan University of Medical Sciences. Journal of Isfahan Dental School 2012, Special Issue 7 (5): 753-762.
19. Tabee Z BaL, Mahmidian F, Nonezhad N. Investigation of communication skills of domestic residents of Shiraz University of Medical Sciences. Journal of social sciences and humanities of shiraz university. 2010. (17-22).
20. Zamani A SA, Mohseni M. Design, implementation and evaluation a tool to strengthen physician- patient communication skills of medical students. Iranian Journal of Medical Education. 2011;10(5):578-85.
21. Emarpour M BL, Zarei Z. Assessment of dental students' communication skills with patients. Journal of Advances in Medical Education & Professionalism. 2015;4(1):38-3.
22. Yashoda R, Puranik M. Dental students; attitude toward learning communication skills in Bengaluru city, India. Journal of Indian Association of Public Health Dentistry. 2016;14(3):327-31.
23. Kadanakuppe S. Effective Communication and Empathy Skills in Dentistry for Better Dentist-Patient Relationships. Journal of Dental Problems and Solutions. 2015;2(3):058-9.