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Assessment of Awareness, Knowledge, and Attitude of Dentistry Students in Kermanshah University of Medical Sciences Regarding Evidence-Based Dentistry (EBD)

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ABSTRACT

Background and aim: Evidence-Based Dentistry (EBD) in clinical education for students and based on the specific conditions governing over any university, including the difference in the rate of focusing on this area of education in various fields and how much Kermanshah Faculty of Dentistry has dealt with this field. The aim of this study was, Assessment Thus, awareness, knowledge, and attitude of dentistry students have been examined about Evidence-Based Dentistry (EBD) in Kermanshah University of Medical Sciences.

Materials and methods: This study is a cross-sectional (descriptive-analytical) research that has been carried out on junior and senior students of dentistry faculty of Kermanshah University of Medical Sciences. Finally, 82 subjects were included in this study. Their awareness, knowledge, and attitude were examined about EBD using a standardized questionnaire. Data entered SPSS.v24 software after completion of information forms and were finally analyzed.

Results: The scores of students in variables of awareness, attitude and self-assessed knowledge were 23.22 ± 3.57 EBD (maximum=50), 48.04 ± 3.35 EBD (maximum=60), and 17.62 ± 3.81 EBD (maximum=45) respectively. The mean score was higher among female students than males, and this difference was statistically significant ($P < 0.05$). The mean score of self-assessed attitude had a significant positive correlation with the academic year ($P < 0.05$). Similarly, the average of students showed a significant relationship with their self-assessed awareness and knowledge regarding EBD ($P < 0.01$).

Conclusion: students' relatively right attitude toward EBD did not acquire adequate awareness and knowledge about Evidence-Based Dentistry (EBD).

1. Introduction

A new process called Evidence-Based Medicine (EBM) was introduced to review scientific evidence in the field of medical sciences in the 1990s.^[1] Evidence-Based Dentistry (EBD) is a branch of evidence-based care science that is according to American Dental Association as follows: It is a method for deciding dental, medical cares that require for a rational assessment of scientific texts and deduction of the best existing evidence in combination with clinical experiences of the dentist, patient's dental conditions, medical history and medical requirements and preferences of the patient.^[2] EBD's final objective may be expressed in three subjects:^[3] Minimization of personal errors, confidence in making the best decisions for treatment of the patient, and achieving the best clinical judgment. Rising longevity of individuals and healthcare level and developing access to the given services have also caused them to preserve their teeth all or some of them to the end of their lifetime. Using this technique improves the quality and results of therapy. The studies have shown that for those dentists who act based on EBD, their clinical experience and skill are upgraded compared to those who only employ personal thoughts and judgments in making decisions. Likewise, dentists can

determine the advantages and disadvantages of the existing therapeutic methods by employing EBD. The selection of the best treatment based on the existing scientific texts may also contribute to responding to legal references. Also, patient's awareness (Being present and paying attention to the subject and understanding the situation at present) of this fact that the given treatments have been based on the best documentation may increase patient's trust in the conducted dental services.^[4] It seems EBD to be assumed as a requisite in everyday treatment for the patients as it has also so far acquired great popularity.^[5] In a study, most of the teachers in the dentistry faculty and about three-quarters of employed dentists utilized the EBD method in their daily activities.^[6] Likewise, about 41% of Kuwaiti dentists have claimed EBD concepts have well perceived them. 76% of Iranian dentists have reported shallow knowledge (Is a structure for producing and organizing findings of the world of nature in the form of testable explanations and predictions) or no knowledge about EBD.^[7,8] It has shown in another study that in 80% of dentistry students in Tehran, the rate of familiarity with the EBD concept was at a low or shallow level.^[9] Through the training of EBD principles to the

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dentistry students, they learn how to update their knowledge based on new studies and employ it in clinical treatments after graduation.^[9] Due to fast development of science and knowledge and emerging of new techniques within the field of dental treatment and diagnosis, it is required for the students to be familiarized with the latest studies and to do dental tasks based on modern science where EBD method is the best-organized process to achieve this goal for familiarity and awareness of students about this technique. However, a similar study has been conducted under the same title in the Mashhad Faculty of Dentistry^[10], given the importance of EBD in clinical education of students and the fact that to what extent any university has dealt with the field of education in different universities based on specific governing conditions. It is necessary to examine this subject in the Kermanshah Faculty of Dentistry and to propose appropriate and specific solutions (including holding practical workshops regarding Evidence-Based Dentistry EBD) proportional to the given findings from this study. It should be noted that due to the existing differences in the admission of students at various scientific levels and also, different teaching methods are taken by teachers; the results came from other universities may not be generalized to all academic centers and universities. For this reason, parameters of awareness, knowledge, and attitude of dentistry students toward EBD have been examined in Kermanshah University of Medical Sciences in this study.

2. Materials and methods

This study is a cross-sectional (descriptive-analytical) research conducted on junior and senior students in the Kermanshah Faculty of Dentistry. The students were selected using the census method. All junior and senior students in the Kermanshah Faculty of Dentistry were included in the study unless those who personally expressed their declining. Considering $\alpha = 0.05$ and $d = 1$ (accuracy) the minimum sample size was 82. The following formula calculated sample size.

$$n = \frac{Z_{1-\frac{\alpha}{2}}^2 P(1-P)}{d^2}$$

Finally, 82 subjects were included in this study. The rates of their awareness, knowledge, and attitude about EBD subjects were examined using a questionnaire. This questionnaire had been designed and administered in a similar study by Khani et al. To measure validity and reliability of questionnaire in that study, a pilot review was carried out on a 15 member group of students who did not participate in the main study using the test-retest method, and the necessary adjustments were made according to the given agreement coefficients.^[11] The questionnaire used in that study included the following items: The first part comprised demographic data such as variables e.g., age, gender, and academic semester, an average of the previous semester, and access/ non-access to the internet at home and workplace. The second part of the questionnaire was composed of questions relating to EBD that comprised of three parts. In the first section, ten questions were proposed about awareness of EBD that included five choices (from very low/ nothing to very high). In the second part, 12 questions have been presented about the attitude toward EBD in 5 modes (strongly disagree to agree strongly). The third part included nine questions about self-assessed knowledge with five choices, ranging from non-awareness of the term to the perception of term plus capability to define it. The score one (very low or nothing, strongly disagree and non-awareness of the given term) to five (very high, strongly agree, perception, and ability to define the term) is attributed to an answer. As a result, the possible range is the sum of scores in the first section of a questionnaire regarding awareness (10-50), in the second part about attitude (6-12), and the third part comprising of self-assessed knowledge (9-45). The reliability of the questionnaire was 0.85. The questionnaire forms were distributed among participants, and they were asked to fill out a questionnaire with the presence of the researcher so that if they had any questions or problems, the researcher could remove the given ambiguity about the content.

Data entered SPSS.v24 software after completion of information forms and were finally analyzed. The significance level was set at 0.05.

3. Results

The studied population included 41 males (50%) and 41 females (50%) with an average age (24.8±3.05 years). The junior students (70.7%) included 58 participants with 24 senior students (29.3%). The mean average of the previous semester was (15.16±0.83) for studied students, and all participants (100.0%) had declared they had access to the internet and related services.

Table 1 shows the level of awareness and knowledge of students about EBD. Similarly, levels of awareness, attitude, and knowledge of studied subjects have been compared among males and females by independent T-test in Table 1. Although the level of awareness, attitude, and knowledge of female subjects are higher than male students, there is only a significant difference in attitude level among two genders ($p=0.012$). The score of the variable of attitude level was higher in female students than in male students.

Table 1: Comparison of levels of awareness, attitude, and knowledge of dentistry students regarding Evidence-Based Dentistry (EBD) among males and females.

Variables	Score	Gender		P-Value
		Male	Female	
Awareness score	23.22±3.57	22.83±4.47	23.61±2.37	0.326
Attitude score	48.04±3.35	47.12±3.52	48.95±2.93	0.012
Knowledge score	17.62±3.81	17.41±3.68	17.83±3.97	0.625

The levels of awareness, attitude, and knowledge have been compared among studied subjects based on academic year using independent t-test. Although levels of awareness, attitude, and knowledge are higher in senior students than in junior students, there is an only significant difference between the two groups in terms of knowledge level ($P<0.001$) so that the scores of knowledge level among senior students were higher than in junior students.

Table 2: Determination of levels of awareness, attitude, and knowledge among dentistry students concerning EBD based on the academic year.

Variables	Academic year		P-Value
	Junior (5th year)	Superior (6th year)	
Awareness score *	22.81±2.54	24.21±5.24	0.107
Attitude score *	48.00±3.06	48.13±4.03	0.879
Knowledge score *	15.90±2.22	21.79±3.65	<0.001

The relationship among age with awareness, attitude, and knowledge of students has been compared using Pearson's statistical correlation test in Table 3. The results of the statistical test indicated that there was no statically significant difference among age and variables of awareness, attitude, and knowledge of students' awareness, attitude, and knowledge of students ($P>0.05$).

Table 3: Determination of relationship among age with awareness, attitude, and knowledge of students regarding EBD.

Variables	Pearson's Correlation	P-Value
Awareness score	0.001	0.996
Attitude score	0.073	0.513
Knowledge score	0.092	0.409

The relationship among the average students in the previous semester with awareness, attitude, and knowledge of students has been compared using Pearson's statistical correlation test in Table 4. The results of the statistical test showed that there was a statistically significant relationship among the average score of students in the previous semester and awareness ($P=0.005$) and knowledge ($P=0.003$). At the same time, there was no statistically

significant relationship between the average scores of students in the previous semester and their attitude ($P>0.05$).

Table 4: Determination relationship among awareness, attitude, and knowledge of students concerning EBD with their average score in the previous semester.

Variables	Pearson's Correlation	P-Value
Awareness score	0.304	0.005
Attitude score	0.156	0.160
Knowledge score	0.326	0.003

4. Discussion

The present study has been conducted to determine the awareness, knowledge, and attitude of dentistry students about Evidence-Based dentistry EBD. The results of a study done by Razavian indicated that there had been a significant difference between scores of control and intervention groups, and one could add to the level of clinical awareness and skills of students by taking the EBD approach.^[12] Similarly, Goldberg et al. also measured the effect level of this training, and the results of this study expressed a preference for EBD education.^[13] At the same time, Slavin conducts a study in which he showed the EBD training technique was the most successful for improving clinical knowledge and skills in students in higher education centers and institutes.^[14] It has been emphasized on the implementation of EBD education in a reviewing study on upgrading clinical services.^[15] The high-speed growth of knowledge and lack of updating curricular references and recalling therapists about the educational environment has caused most of them to deal with treatment and care for patients with reliance on their previous knowledge, current experience in the clinical environment, which caused the related services not to be duly put at the disposal of patients. In his investigation, Kumar has also emphasized this issue and mentioned that there is no alternative except performance based on EBD for physicians and other medical personnel following the growing trend in medical sciences.^[16] Hey, et al. identified that the studied physicians have mainly relied on clinical experiences, comments of colleagues, and abstract of electronic paper when making medical decisions and giving clinical care instead of directly referring to valid papers and sources.^[17] Also, the given conducted studies in Iran indicate that the EBD approach toward clinical training and performance is subject to ignorance. In a study that was carried out by Moeintaghavi, the finding showed that despite the existing positive approach, only 5% of them took the EBD method, and most of them were not acquainted with EBD specialized websites.^[10] Likewise, the findings indicated in another survey that fewer percent of medical assistants in their clinical activities employed the EBD method. They referred to books and then clinical experiences in the first place while referring to EBD papers, and approaches were ranked in third place for this purpose.^[18] The results of the present study showed that the scores of awareness, attitude, and self-assessed knowledge of students about EBD were 23.22 ± 3.57 (maximum=50), 48.04 ± 3.35 (maximum=60) and self-assessed knowledge 17.62 ± 3.81 (maximum=45) respectively. Consequently, it can be implied that the mean scores of awareness, attitude and self-assessed knowledge of these students have been respectively 46.44%, 80.06%, and 39.15%. In another study which was conducted by Dehghani et al., the result indicated that the mean scores for variables of awareness, attitude, and self-assessed knowledge of the students were respectively 25.6 ± 4.8 (possibly maximum=50), 28.8 ± 8 (maximum=45) and 42.5 ± 5.3 (maximum=60).^[19] In comparison with the present research, the results of a study by Dehghani et al.^[19] indicate that while the students of Mashhad Faculty of Dentistry had a lower level attitude than studied students in the present survey, their

awareness and knowledge were higher. This difference may be due to a method of students' election, the higher background of Mashhad Faculty of Dentistry, and further experiences of the teacher in this faculty and more efforts made by educational planners of this faculty for EBD trend.^[19] While our studied students have positive beliefs and approaches (attitude) toward EBD in the present research, they lacked motive and probably suitable facilities, time, and method to learn this approach, which is visible in their poor awareness and knowledge. Thus, concerning the current higher attitude level in these students and at the same time, their lower knowledge and awareness, the necessity for holding EBD educational course may become more evident. Almost all students took a proper approach toward the EBD technique and also 80% of them regarding related phases of this process^[8] and this was consistent totally with the findings in the present research. And this may be emphasized in this point that despite the existing relatively appropriate approach among the studied dentistry students, their awareness and knowledge about EBD subject was at a low level. The familiarity of students with reference sources and sites may play an essential role in enhancing their awareness about the EBD subject. This issue was covered by questions about awareness in the present study. Curro et al. showed the positive effect of Practice-Based Research Networks (PBRNs) on raising awareness in students.^[2] Despite the presence of a higher level of attitude among specialist assistants about EBD in Shiraz University of Medical Sciences in a study done by Amini et al. but most of them had also been unaware and or with little awareness about EBD related specialist websites.^[21] To poor awareness (46.44%) of students about this subject in the current study, the requisite is revealed to allocate an educational course for training this subject. Likewise, in this study, it can be mentioned that superior dentist students have acquired higher levels of attitude and awareness, bypassing more educational courses and probably with some contents about EBD and passing dissertation credit. Familiarity with researching topics, recognizing various relevant electronic papers, and websites to the researching materials, and their level of knowledge became upgraded noticeably about the EBD approach. Similarly, the average curricular score was also enhanced by rising knowledge and awareness in students who showed this approach to enhance educational capability and achievement in these students. In a study, Khami et al. showed that the mean score of awareness in male students was significantly higher than female students.^[8] no difference was observed in the level of their awareness based on gender in the studied students of the present research, but the mean score of attitude was higher in female students than in males. The studied students had full access to the internet (100%) in the current research. Given this fact, the lack of utilization from EBD websites could be assumed as the reason for their poor awareness and knowledge in this field. The findings also indicated this trend. Sjöström et al. showed that despite internet access, only 29% of studied subjects knew special terms of EBD, and they could present a definition of them.^[22] A notable limitation was the lack of collaboration between the fifth and sixth-year students to participate in the present study. Encourage them to participate in an evidenced-based dental leaflet; a questionnaire was developed to encourage them to become more familiar with the questionnaire.

5. Conclusion

Knowledge and awareness about EBD were at a low level; therefore, the necessity is felt for planning in this field to upgrade their awareness and knowledge and recommended to planning appropriately for holding educational courses and preparation of conditions, facilities, and suitable environment for the growth of these educational approaches in this faculty. Concerning the existing positive and reasonable belief and attitude

concerning EBD between dentistry students in Kermanshah University of Medical Sciences.

Conflict of Interest

The authors declared that there is no conflict of interest.

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