

## Attitudes of Dentists and Dental Students toward Evidence-Based Medicine, Isfahan Province

Zahra Saberi <sup>1</sup>, Haniye Sadat Sajadi <sup>2</sup>, Laleh Ghadirian Marnani <sup>3</sup>, Adel Tabesh <sup>1\*</sup>,  
Mohammad Reza Tarkesh Esfahani <sup>4</sup>

### Abstract

**Background:** Evidence Based Medicine (EBM) is a progressing field of patient management with extensive advantages in dentistry.

**Aim:** The present study was conducted with aim to assess the attitudes of dentists and dental students in Isfahan Province, Iran, towards EBM.

**Method:** This cross-sectional study was performed on 260 participants using the online version of the Evidence-based Practice Attitude Scale (EBPAS) questionnaire. University, year of study, gender, age, and participation in previous EBM course were also recorded. Data were analyzed by SPSS software (version 22) and T-test, ANOVA, and Pearson correlation.  $p < 0.05$  was considered statistically significant.

**Results:** The mean of the total attitude score was  $85.27 \pm 12.57$ . No significant difference was found between students and graduates, or among the three universities ( $p > 0.05$ ). Participants with previous participation in EBM course had a more positive attitude compared with others ( $p = 0.001$ ).

**Implications for Practice:** Despite the high mean score of evidence-based attitude among students and graduates, last two-year students and graduates had poor use and familiarity with this approach in practice, so continuous and correct training is recommended.

**Keywords:** Dentistry, Evidence-Based Medicine, Graduates, Students

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1. Department of Oral Medicine, Dental Research Center, Dental Research Institute, School of Dentistry, Isfahan University of Medical Sciences, Isfahan, Iran
  2. Knowledge Utilization Research Center, University Research and Development Center, Tehran University of Medical Sciences, Tehran, Iran
  3. Community Based Participatory Research Center, Iranian Institute for Reduction of High-Risk Behaviours, Tehran University of Medical Sciences, Tehran, Iran
  4. Dentist, Isfahan University of Medical Sciences, Isfahan, Iran

\* Corresponding Author Email: [adel.tabesh@dnt.mui.ac.ir](mailto:adel.tabesh@dnt.mui.ac.ir)

## Introduction

The field of dentistry is currently undergoing a significant shift towards evidence-based medicine (EBM), which utilizes the best available evidence in making clinical decisions (1). EBM considers the patient's values, preferences, and circumstance when making decisions regarding diagnosis, treatment, and care (2). This approach offers numerous advantages, such as enhancing treatment outcomes, improving patients' quality of life, and enhancing cost-effectiveness (3, 4).

The incorporation of EBM into dental care has become increasingly prevalent due to ensure the quality and effectiveness of treatment (5). It is crucial to investigate the attitudes of dental students towards EBM as they represent the upcoming generation of dental practitioners (6, 7). Understanding the perspectives of dental students towards EBM can provide valuable insights into the current state of dental education and practice, as well as identify opportunities for improvement of evidence based dental care (not mere treatment) (8). The dental education system plays a crucial role in shaping the attitudes and practices of dentists (9). Therefore, it is essential to ensure that the next generation of dental professionals is well equipped to practice evidence-based dentistry by incorporating EBM into dentist curricula (10). Positive attitudes towards EBM can facilitate behavioral change and lead to the successful adoption of this approach (11). However, little research has been conducted in Iran to examine the perspectives of the emerging trend of physicians and specialists, consisting of last two-year students towards EBM. Therefore, the present study was conducted with aim to explore the attitudes of dentists and dental students in Isfahan Province towards EBM.

## Methods

This cross-sectional study was carried out in 2021. The participants were final two-year dental students from all Isfahan Province dental schools (Isfahan University of Medical Sciences, Islamic Azad University Khorasgan Branch, and Kashan University of medical Sciences), as well as from dentists who were graduated in 2019 and 2020 at mentioned schools. The sampling was done based on a multistage cluster model due to the population difference. The total sample size was 260 participants from all 3 universities, where Isfahan University of Medical Science students were the majority and Kashan University of medical Science graduates were the minority.

The Evidence-Based Practice Attitude Scale-36 (EPBAS-36) was used for data collection, along with six additional items related to the participants' demographic characteristics. The EPBAS-36 measures attitudes towards evidence-based practice in 12 dimensions, including requirements, appeal, openness, divergence, limitations, fit, monitoring, balance, administrative burden and time, job security, organizational support, and receiving feedback. The scale consists of 36 items, and each dimension includes three items scored on a five-point Likert scale ranging from 0 (strongly disagree) to 4 (strongly agree). The questionnaire used in this study was an English version previously validated and utilized in similar research. A translated version had been used in previous studies in the country and its validity and reliability was confirmed (12). The pre-evaluated Persian version of the questionnaire was obtained after conducting a translation-retranslation process and consulting with the main authors of the questionnaire. To ensure its validity, six experts evaluated the Persian version and the intra-class correlation (ICC) was calculated at 85.5%. The questionnaire is a shorter version of the EBPAS-50 questionnaire. In the questionnaire, 12 dimensions were analyzed as dependent variables. Negative questions were scored reversely to evaluate various attitudes and reduce bias. Therefore, the score range of the questionnaire was between 0 and 144, while a higher final score indicated a more positive attitude towards using Evidence Based Practice (EBP). The questionnaire was completed in the form of an online survey that participants could answer autonomously and confidentially. The study also included five independent variables, including university, year of study, gender, age, and participation in EBM courses.

Data were analyzed using SPSS (version 22) and descriptive indices including frequencies, mean and standard deviation. T-test, ANOVA, and Pearson correlation were also used.  $p < 0.05$  was considered statistically significant.

## Ethical Consideration

To ensure the protection of participants' rights, the researcher obtained approval from the research ethics committee of Isfahan University of Medical Sciences (IR.MUI.RESEARCH.REC.1399.431), and informed consent was obtained from each participant.

## Results

A total of 260 dentists (43%) and students (57%) participated in this study. The mean age was  $25.58 \pm 2.77$ , with 57.3% women vs. 43.7% men. Meanwhile, 24.6% of participants had passed a previous EBM course. Total and domain scores of attitude are shown in Table 1.

**Table 1: Total and domain scores of attitude**

<b>Domain (Possible Range: 0-12)</b>	<b>Score (Mean <math>\pm</math>SD)</b>
Appeal	8.08 $\pm$ 2.72
Divergence	5.03 $\pm$ 2.23
Requirements	7.25 $\pm$ 2.19
Openness	8.20 $\pm$ 2.04
Fit	8.79 $\pm$ 2.26
Limitations	6.04 $\pm$ 2.18
Monitoring	6.23 $\pm$ 2.66
Balance	7.36 $\pm$ 1.88
Administrative burden & time	4.43 $\pm$ 2.23
Job security	7.02 $\pm$ 2.48
Organizational support	7.83 $\pm$ 2.52
Feedback receiving	8.97 $\pm$ 2.72
<b>Total Score (Possible Range: 0-144)</b>	<b>85.27 <math>\pm</math>12.57</b>

The results of t-test revealed that although the difference between the total score in women and men was not significant ( $p=0.364$ ), women had higher scores in domains "Requirements" and "Openness" ( $p=0.026$ ,  $p=0.016$ , respectively). The subjects with previous participation in EBM course had a more positive attitude toward EBM compared with others ( $89.93 \pm 8.88$  vs.  $83.75 \pm 13.23$ ,  $p=0.001$ ).

There was no significant difference between the scores of dentists and dental students ( $p=0.691$ ), but among dental students, final year ones had a significantly more positive attitude toward EBM than their lower year counterparts ( $87.88 \pm 16.04$  vs.  $83.24 \pm 10.50$ ,  $p=0.047$ ).

The results of ANOVA revealed that there was no significant difference between the total and domain scores of participants from different universities ( $p>0.05$ ), except for the domain "Feedback receiving". Further analyses by the LSD method revealed that this fact is due to the significant domain score difference between Isfahan ( $8.55 \pm 2.41$ ) and Khorasgan ( $9.20 \pm 3.5$ ) universities ( $p=0.006$ ). Pearson Correlation test found that although there is no significant correlation between age and total score ( $p=0.654$ ), older participants had a higher attitude score in the domain "Divergence" ( $p=0.003$ ,  $r=0.191$ ).

## Discussion

The present age is the age of information, exploration, and innovation, which has provided an excellent opportunity to use evidence-based information (2). Evidence-based Practice (EBP) is widespread in many healthcare domains. One of its main features is its reliance on the relationship between scientific evidence, clinical expertise, needs, and individual choices. EBM is defined as integrating individual clinical expertise with the best clinical evidence available in systematic research (6, 7).

The American Dental Association has defined Evidence Based Dentistry (EBD) is an approach to oral healthcare that requires a judgmental consensus, systematic evaluation of scientific evidence on the patient's history of oral and medical conditions, the dentist's clinical experiences, treatment needs, and patient desires (4), which clarifies the importance of evaluating and teaching evidence-based dental practice.

The EBPAAS-36 depicted a relatively high total mean score of evidence-based attitude among students and graduates, which can indicate a positive attitude toward using this approach. However, a study conducted on dental assistants in 2018 in Iran showed the positive attitude of the participants toward EBP (13). This fact may be a consequence of strong community dentistry course presentation in dental faculties, which include evidence-based dentistry explanations. Besides, extra-curriculum workshops might have influenced the attitude.

The study by Bramberg et al. in Sweden showed a positive attitude toward EBP and emphasized that

this point of view is more individually perceived rather than institute-based approach (14). The results of the present study found no significant difference between total score of attitude toward EBM in different universities of the Isfahan province. Some research revealed that although positive attitudes toward EBM are present individually, they hardly progress to action due to the lack of institutional support (15, 16). In the study by Capras et al. in Romania, more participants were women than men, which is similar to the present study. They also concluded that despite positive attitude, knowledge regarding EBP is insufficient (17). Bello et al. reported the same results (18), whereas Abdulwadud et al. reported lack of EBP education among Ethiopian students (19). It seems that dental faculties as education infra-structures should improve EBP courses in their plans.

The results of the present study showed significant difference between the attitude scores of participants who had passed EBD courses and those who had not. Besides, last year students had a significantly higher attitude score than their junior counterparts. These results are somehow in agreement with the findings of the study of Najafi et al. on dental students at Khorasgan University of Medical Sciences (8). In another similar study conducted in 2019 to evaluate evidence-based attitudes among the assistants of Kermanshah University of Medical Sciences, there was a significant difference in the application of EBP between the groups familiar with this approach and groups that were not (20).

As practical hand-work seems to be a major part of dental practice, dentists and dental students may inevitably ignore evidence-based aspects of improving their skill. Since this fact might potentially result in patient care failure, it is necessary to provide EBD courses along with clinical skill lessons across dental schools to improve attitude and practice among both graduates and students.

### **Implications for practice**

The findings of the present study showed a relatively positive attitude among dentists and dental students in Isfahan Province regarding evidence-based medicine. Implementing courses about up-to-date evidences in dentistry seems necessary to lead this positive attitude towards action and treat dental patients by evidence-based dentistry.

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### **Conflicts of interest**

The authors declared no conflict of interest.

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### **Authors' Contributions**

Zahra Saberri designed and supervised the study protocol. Haniye Sadat Sajadi and Laleh Ghadirian Marnani conducted data interpretation and statistical analysis. Adel Tabesh prepared the manuscript and Mohammad Reza Tarkesh Esfahani collected the data. All authors have read and agreed to the published version of the manuscript.

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