

## Assessing Moral Skills in General and Post-Graduate Dental Students in the Southeast of Iran: A Cross-Sectional Study

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### ABSTRACT

**Objective:** To assess the level of moral skills in dental students and residents. **Material and Methods:** This cross-sectional and descriptive-analytical study was conducted on dental students and residents of Kerman University of Medical Sciences, selected by census sampling. Data collection tools included a demographic information checklist (age, gender, marital status, educational level (before basic sciences, after basic sciences, residency), and moral skills inventory questionnaire. The data were analyzed using a T-test and multiple regression analysis at a confidence level of 95%. **Results:** The total score of the moral skills questionnaire was about 44 out of 80, and there was no difference between males and females in moral skills ( $p=0.79$ ). However, there was a significant difference in moral sensitivity between married and single students ( $p=0.036$ ). Residents gained significantly higher moral integrity scores than students ( $p=0.046$ ). **Conclusion:** The study highlights that the level of professional moral skills in Kerman dental students and residents was acceptable. Single students got higher scores in the moral sensitivity domain, although residents got the highest scores in the moral integrity domain. There was no significant correlation between gender and the level of moral skills.

**Keywords:** Ethics, Professional; Ethics, Dental; Students, Dental.

## Introduction

Ethics is derived from the Greek word *ethos*, which means human behavior, habits and a series of acquired traits and attributes that are accepted as moral principles [1-3]. Medical Ethics has a long history of over 2500 years in the world. The traditional Hippocratic moral obligation of medicine contains the ancient principles of medical ethics and is still read as a medical oath during the graduation of medical students [4]. Iranian medical ethics also has a long history and belongs to the period before Hippocrates [5].

One of the most important principles in the field of medical professional ethics is respect for the patient's rights, regardless of their race, gender, socio-cultural class, and level of education [6]. Patients demand the rights of autonomy, confidentiality, fair treatment, impartial application of justice as well as the beneficence of medical care with minimal harm from the healthcare providers [7]. Patient vulnerability makes the infractions and weaknesses of the healthcare system more prominent [8].

In the past, health professionals have generally tried to keep patients away from questioning the treatment they receive [9], but today, since the latest healthcare developments are introduced to the patients through the mass media, patients are considered active members of the healthcare system [10]; thus, the importance of receiving healthcare services is much more evident for patients than ever before [11].

Some authors suggested that the level of professional ethical skills was low to moderate in dentistry students and general dentists, although they had higher scores in moral sensitivity and moral integrity than dentists [12,13]. Nevertheless, in the domains of moral reasoning and moral courage, general dentists got higher scores than the students.

Soleimani et al. [14] found no significant relationship between the moral skills of the students, their parents' jobs and their education level. In addition, although the level of moral sensitivity in female students was significantly higher, the age of students was not significantly correlated to the level of moral skills [14].

The level of moral skills in students significantly correlates with some components of their emotional intelligence, even though no significant relationship was found between demographic factors and their moral skills [15]. Nadoushan et al. [16] reported that the level of professional moral skills of dentistry students significantly correlates to their interest in dentistry. Afshar et al. [17] suggested that among the four ethical domains - moral sensitivity, moral reasoning, moral integrity and moral courage, moral sensitivity showed a higher level than other domains. Also, Borhani et al. [18] suggested that the level of moral sensitivity of nursing students was moderate and among all variables, only the age of students was significantly related to the level of moral sensitivity.

Dental students, as well as medical students, need to be educated in the field of professional moral skills and respect for the patient's rights [19]. The American Dental Association calls on dentists to adhere to ethical standards with the primary purpose of patient satisfaction and fundamental pillars of honesty, love, kindness, justice, and benevolence [20,21]. Dentists encounter a lot of ethical challenges every day, and having a high level of moral skills could lead to better performance and fewer conflicts in clinical settings.

Little is known about the 'knowledge and skills in medical ethics and respect for patients' rights in Kerman. Therefore, the main objective of this study was to investigate the knowledge of dental students and residents of Kerman University of Medical Sciences about the principles of medical ethics as well as their level of professional moral skills toward patients in clinical settings.

## Material and Methods

Study Design, Sampling and Ethical Clearance

This cross-sectional and descriptive-analytical study was carried out on 308 general and post-graduate dental students of the Dentistry Faculty of Kerman University of Medical Sciences selected by census sampling method. First, the list and number of all general and post-graduate students of dentistry faculty for each field were prepared. The total number of students was 382 (332 general and 50 post-graduate), of which only 308 volunteered to participate in our study.

The proposal of this study was approved by the ethics code IR.KMU.REC.1397.244 in the research ethics committee of Kerman University of Medical Sciences. Before distributing the questionnaire, the objectives and importance of the project were clarified to students and residents and informed consent was obtained from them. They were also informed that their information would be confidential.

#### Data Collection

Data collection tools included a demographic information checklist (age, gender, marital status, educational level (before basic science, after basic science, resident) and Moral skills inventory questionnaire designed by Chambers [22].

The questionnaire is divided into four domains and each one contains 10 questions. The first 10 questions are related to the moral sensitivity, the second to moral reasoning, the third to moral integrity and the last 10 questions were related to moral courage. The study of Afshar et al. [17] translated the questionnaire into Persian, then revised by a professor of medical ethics into a version in accordance with our religion and culture. Thus, in order to verify the validity of the Persian questionnaire, it was revised again by eight professors of Shahed Dental School. Finally, the reliability of the questionnaire was approved by the distribution of the questionnaire to eight dental school residents twice a week [17].

The Likert method was used for scoring and each question was assigned a score between zero and 2. For this purpose, the highest score that a person gets was 80 and the lowest score was 0. For each of the questions in 4 areas, answer a: 2 points, answer b: 1 point, and answer c: zero were considered [22]. Students' questions were then carefully answered, and they were given time to complete the questionnaires.

#### Data Analysis

The data were analyzed by SPSS 25 software (IBM SPSS, Armonk, NY, USA) using Pearson t-test coefficient, T-test and multiple regression analysis at a 95% confidence level.

### Results

In this study, 308 students and residents with a mean age of  $22.47 \pm 2.87$  participated, of which 37% were males and 61.7% were female (Tables 1 and 2).

**Table 1. Sample distribution according to demographic information.**

Variables	N	%
Gender		
Female	190	61.7
Male	114	37.0
Non-responded	4	1.3
Marital status		
Single	263	85.4
Married	40	13.0
Non-responded	5	1.6
Grade		

Basic Sciences Grade (Undergraduate)	70	22.7
Clinical studies Grade (Undergraduate)	201	65.3
Residency (Post-graduate)	37	12.0

**Table 2. Frequency distribution of the sample mean age according to demographic variables.**

Variables	Mean	Mean Standard Error
<b>Gender</b>		
Female	22.28	0.20
Male	22.80	0.29
<b>Marital status</b>		
Single	22.10	0.16
Married	25	0.51
<b>Grade</b>		
Basic Sciences Grade (Undergraduate)	19.88	0.21
Clinical studies Grade (Undergraduate)	22.33	0.13
Residency (Post-graduate)	27.92	0.28

The score obtained from the questionnaire is about 44, compared to the ideal score, which is 80. Therefore, the participants in this study obtained more than 50% of the total score. There is no significant difference between males and females regarding moral skills in different domains ( $p=0.79$ ). The results indicated a statistically significant difference between single and married students in the field of moral sensitivity and single students were significantly at a higher level of moral sensitivity ( $p=0.036$ ). However, the mean total score of the questionnaire was higher in married people, but it was not statistically significant ( $p=0.922$ ). Moreover, residents were at a significantly higher level of moral integrity than general students ( $p=0.046$ ) (Table 3).

**Table 3. Comparison of various domains of moral skills scores regarding gender, educational level and marital status.**

Variables	Gender		Marital Status		Grade		
	Female	Male	Married	Single	Basic Sciences	Clinical Studies	Residency
Moral Sensitivity	9.35	9.54	8.39	9.56	9.65	9.43	8.44
p-value	0.611		0.036		0.135		
Moral Reasoning	12.96	12.78	12.5	12.98	13.08	12.72	13.63
p-value	0.707		0.496		0.397		
Moral Integrity	10.07	10.1	10.8	9.97	9.74	9.98	11.24
p-value	0.928		0.116		0.046		
Moral Courage	11.35	10.61	11.26	11.06	11.43	10.87	11.56
p-value	0.068		0.724		0.315		
Total Score	43.85	43.53	43.91	43.75	43.75	43.66	44.34
p-value	0.729		0.922		0.938		

While the average total score of students decreased from the level of the basic sciences to clinical and residency levels, it was not statistically significant ( $p=0.938$ ). Table 4 shows that the mean age of participants is only significantly related to the level of moral sensitivity domain ( $p<0.001$ ).

**Table 4. Comparison of various domains of moral skills scores according to age.**

Age	Moral Sensitivity	Moral Reasoning	Moral Integrity	Moral Courage	Total Score
Correlation Coefficient	-0.262**	0.044	0.055	0.067-	0.089-
p-value	0.000*	0.456	0.351	0.255	0.160
Number	286	284	294	289	251

\*Correlation is significant at the 0.05 level (2-tailed); \*\*Correlation is significant at the 0.01 level (2-tailed).

## Discussion

Professional moral skills, education, and respect for patients' rights in clinical university settings are recommended for general dental students and residents. Ethical signs in students include responsibility, respect for patients, benevolence, effectiveness, justice, fairness and sacrifice in providing dental services [23].

This study shows that the score obtained from the questionnaire is more than 50% of the ideal score, and the moral skills of dental students and residents are at an acceptable level. The results were similar to those of Razeghi et al. [15]. By contrast, Yazdani and Asefi [24] reported that the level of moral skills in dental students of the Tehran University of Medical Sciences was lower than in the present study. In contrast to previous authors [17], the highest level was related to moral reasoning in our research. This discrepancy is related to the residents that participated in the present study.

A significant dimension of the present study is that the females obtained higher scores than boys in the field of moral reasoning, moral courage, and the average overall score. Also, there was no significant difference between male and female students regarding moral skills. This is consistent with Razeghi et al. [15], Gorter and Eijkman [25], and Jafari Nadoushan et al. [16].

Concerning gender, Yazdani et al. reported that female students obtained significantly higher scores in the domains of moral sensitivity, moral reasoning and moral courage [24]. In this context, You and Bebeau [26] showed that gender plays a significant role in all domains of moral skills except for moral sensitivity.

The results of this study indicated that there is a significant difference in the field of moral sensitivity between married and single students. Single students had significantly higher moral sensitivity, which agrees with Razeghi et al. [15], especially in the domain of moral courage. In contrast, Jafari Nadoushan et al. [16] and Gorjidoz and Greenman [27] reported no significant relationship between behavioral skills and marital status.

We conclude that residents were at a significantly higher level of moral integrity than general students, similar to Jabbarifar et al. [23]. This could be related to the fact that residents are more experienced and skillful compared to general dental students due to passing professional moral skills courses during residency.

It is documented that the variable of age significantly correlates with the level of moral sensitivity, which is also directly related to the increasing years of education. This finding is similar to Chambers [22] and Al-Zain et al. [28], who concluded that last year students obtained higher scores in the field of moral skills. However, Razeqi et al. [15] suggested no difference between students' entry year and moral skills. This may be related to the young age of the participants in that study, which only investigated the difference between the students in the third and sixth years.

We found that the mean score of moral sensitivity in basic science students, post-basic sciences and residency decreased, although the difference among the participants was not statistically significant. Conclusively, the basic science students were at higher levels of moral sensitivity since they had not begun clinical case studies and consequently had not been faced with patients. Yazdani et al. [13] also found similar results to our research and noted that the average score in all four areas was higher in younger dentists.

Although ethics is essential in all professions, moral skills and ethical decisions are very important in dentistry because the dentist deals with a person in a state of pain and discomfort [29].

## Conclusion

This study highlights that the level of moral skills in students and residents of Kerman University of Medical Sciences is at an acceptable level, even though single students in the field of moral sensitivity and residents in the field of moral integrity obtained higher scores. Also, there was no significant relationship between gender and the level of moral skills.

### Authors' Contributions

FSS		<a href="https://orcid.org/0000-0002-5855-6533">https://orcid.org/0000-0002-5855-6533</a>	Conceptualization, Methodology, Formal Analysis, Investigation, Data Curation, Writing - Original Draft, Writing - Review and Editing.
MTP		<a href="https://orcid.org/0000-0002-3116-2382">https://orcid.org/0000-0002-3116-2382</a>	Conceptualization, Methodology, Writing - Review and Editing and Supervision.
RA		<a href="https://orcid.org/0000-0003-2605-5221">https://orcid.org/0000-0003-2605-5221</a>	Investigation, Writing - Original Draft and Writing - Review and Editing.
SK		<a href="https://orcid.org/0000-0001-5802-8186">https://orcid.org/0000-0001-5802-8186</a>	Formal Analysis, Investigation, Data Curation and Writing - Review and Editing.
All authors declare that they contributed to critical review of intellectual content and approval of the final version to be published.			

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### Conflict of Interest

The authors declare no conflicts of interest.

### Data Availability

The data used to support the findings of this study can be made available upon request to the corresponding author.

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