

# Attitude and Professionalism in Education of Residents at the School of Dentistry of Islamic Azad University of Tehran

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## Abstract

**Background and Aim:** Positive attitude of dentists towards the professional ethical principles can improve the quality of provided services and minimize occupational stress. This study aimed to assess the attitude and professionalism in education of dental residents at the School of Dentistry of Islamic Azad University, Tehran.

**Materials and Methods:** This descriptive cross-sectional study was conducted on all dental residents attending the School of Dentistry of Islamic Azad University in Tehran in 2022. Data were collected using the American Board of Internal Medicine (ABIM) professionalism questionnaire, which was translated to Persian by Aramesh, and its validity and reliability were confirmed. This questionnaire includes two parts of (I) demographic information, and (II) questions regarding the perception of professionalism at work (totally 17 questions) in four main domains of excellence, honor/integrity, altruism/respect, and empathy. Data were collected through face-to-face interviews and analyzed by one-way ANOVA and regression test.

**Results:** Of 57 dental residents, 26.3% were males and 73.7% were females. The mean total score of professionalism was found to be  $114.96 \pm 23.45$  out of 153, and the overall percentage of professionalism was calculated to be  $75.13\% \pm 15.33\%$  out of 100%. The percentage of professionalism score in the third-year and higher residents was 8% higher than that in second-year residents ( $P=0.052$ ). The mean percentage of professionalism score was not significantly correlated with the field of specialty, gender, age, participation in related courses, or grade point average (GPA) ( $P>0.05$ ).

**Conclusion:** It appears that attitude and professionalism of dental residents of School of Dentistry of Islamic Azad University of Tehran in 2022 were optimal. The honor/integrity domain acquired the highest, and the altruism/respect domain gained the lowest score.

**Key Words:** Professionalism; Students, Dental; Education, Dental

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## Introduction

Poor adherence to the principles of professionalism is a major problem in dental

practice [1]. Although professionalism is an inseparable part of medical practice, the fact is, professionalism as a topic is not instructed or

assessed in dental residency programs in many countries [2]. Evidence shows that the knowledge level of residents about the principles of professionalism is also low [3,4].

Professionalism is among the most influential factors determining the competency and proficiency of clinicians, and includes a series of behaviors that build trust in the relationship of clinicians with patients and the community [5]. According to a statement by the American Dental Education Association, the main aspects of professionalism include altruism, responsibility, service, honor, integrity, justice, professional excellence, accountability, responsiveness, and respect [6]. Professionalism includes a series of behaviors, goals, and characteristics that define a profession or a professional individual [5]. Professionalism is defined as acquiring and retaining high level of professional knowledge, technical skills, and professional behaviors that are necessary for efficient provision of clinical services to patients [5]. Amini et al. in their study in Tabriz reported that 46% of residents were not familiar with professionalism. The mean score of perceived professionalism of residents was 6.85 out of 10 [4]. Mianehsaz et al. [7] in Kashan reported a mean professionalism score of 4.93. Aramesh et al. [6] in Tehran reported a professionalism score of 6.12 out of 10 in residents. The excellence domain acquired the lowest mean score (5.5) in their study. Moreover, Ahadi et al. reported a mean professionalism score of 7.67 for residents of physical medicine and rehabilitation, and the integrity domain acquired the highest score (mean score of 8.92) [8]. Evidence shows that residents with limited professionalism and responsibility skills are more likely to commit medical errors than their peers [9].

Since professionalism is a major pillar of provision of high-quality care to patients, and residents are a trained group of students to provide healthcare services to patients, attention to professionalism in this particular group of medical students is highly important [10]. After graduation, some residents may be appointed as university faculty members and become role

models for their peers and medical students. Thus, any professional misconduct by them can compromise their patients' health and wellbeing [7].

Considering the significance of this topic and lack of studies on professionalism of dental residents, this study aimed to assess the attitude and professionalism of dental residents of School of Dentistry of Islamic Azad University of Tehran in 2022.

## Materials and Methods

This descriptive cross-sectional study was conducted on all residents attending the School of Dentistry of Islamic Azad University of Tehran in 2022. The study was approved by the ethics committee of the university (IR.IAU.DENTAL.REC.1400.150). Residents were briefed about the study objectives, and signed informed consent forms prior to enrollment. Residents in their first 6 months of residency program were excluded since they did not have long enough communication with patients.

Professionalism of 57 dental residents in pediatric dentistry, orthodontics, prosthodontics, restorative dentistry, oral medicine, periodontics, endodontics, radiology, and oral and maxillofacial surgery programs in 2022 was evaluated by the American Board of Internal Medicine (ABIM) professionalism questionnaire. This questionnaire is a reliable tool for assessment of professionalism of residents in different medical fields, which was developed by the ABIM [11]. It was translated to Persian and its validity and reliability based on Cronbach's alpha (0.88) were confirmed by Aramesh et al. [6].

This questionnaire has two parts. The first part asks for demographic information of residents such as their age, gender, academic year, and grade point average (GPA). The second part includes questions regarding perception of professionalism at work (a total of 17 questions) in four main domains of excellence (4 questions; #1 to #4), honor/integrity (4 questions; #5 to #8), altruism/respect (7 questions; #9 to #11), and #14 to #17), and empathy (2 questions; #12

and #13). The items in the excellence domain (questions 1 to 4) evaluated the opinion of residents regarding the availability of good role models in terms of professional commitment, patient instruction, and student instruction. The honor/integrity domain (questions 5-8) evaluated the opinion of residents regarding the integrity of their peers and avoiding unprofessional behaviors. The altruism/respect domain (questions 9-11 and 14-17) included questions regarding respecting the patients and peers, and university rules and regulations by residents, avoiding wasting the university resources, and considering patient comfort in diagnostic and dental procedures. The empathy domain asked for the viewpoint of the respondents regarding their colleagues paying attention to patient needs and comfort in scheduling the tests and selection of treatment procedures.

Data were collected through a face-to-face interview by dental residents, and each resident estimated the level of professionalism of his/her peers. Scoring was performed using a 9-point Likert scale from 1 (never) to 9 (always). The maximum and minimum attainable scores were 153 and 17, respectively [4,6]. The comparisons in this study were secondary objectives and side findings. Data were analyzed by SPSS version 26 using one-way ANOVA and regression test.  $P < 0.05$  was considered statistically significant.

## Results

Of 57 residents, 15 (26.3%) were males and 42 (73.7%) were females. The mean GPA of residents in their undergraduate program was  $16.56 \pm 1.01$  out of 20 (range 13 to 18). The mean precision of residents was  $4.02 \pm 0.74$  (range 2 to 5). Of all, 7 (12.3%) were residents of pediatric dentistry, 6 (10.5%) were residents of periodontics, 4 (7%) were residents of endodontics, 4 (7%) were residents of oral medicine, 9 (15.8%) were residents of prosthodontics, 6 (10.5%) were residents of restorative dentistry, 8 (14%) were residents of orthodontics, 6 (10.5%) were residents of radiology, and 7 (12.3%) were residents of oral

and maxillofacial surgery. Of all, 21 (36.8%) were second-year, 27 (47.4%) were third-year, and 9 (15.8%) were fourth-year residents. Also, 18 (31.6%) residents were not familiar, and 31 (54.4%) were familiar with the definition of "professionalism" and "professional commitment".

Of 57 residents, 33 (57.9%) had not participated in any medical ethics course while 22 (38.6%) had passed this course. Regarding self-study in the field of medical ethics, 44 (77.2%) had no self-study in this regard while 11 (19.3%) reported self-study in this respect. The educational time per week was 50-60 hours in 35 residents (63.6%), 61-70 hours in 7 residents (12.7%), over 90 hours in 5 residents (9.1%), 71-80 hours in 4 residents (7.3%) and 81-90 hours in 4 residents (7.3%) (Table 1).

The mean total score of professionalism was  $114.96 \pm 23.45$  out of 153 (range 56 to 149). The overall mean percentage of professionalism was  $75.13\% \pm 15.33\%$  out of 100% (range 36.60% to 97.39%). Of all 55 (100%) residents, 6 (10.9%) acquired less than 50%, 16 (29.1%) acquired 50%-75%, and 33 (60%) acquired over 75% of the professionalism score. The comparisons in this study were secondary objectives and side findings. Table 1 presents the mean and standard deviation of the score (percentage) of different domains of professionalism acquired by dental residents. As shown, excellence followed by honor/integrity acquired the highest scores, and altruism/respect and empathy domains acquired the lowest scores.

Table 2 presents the percentage of professionalism score based on gender, academic year, and type of specialty program. One-way ANOVA showed no significant difference in the mean professionalism score percentage among different specialty programs ( $P = 0.563$ ).

The regression test showed no significant effect of gender, age, participation in medical ethics course, and GPA on the percentage of professionalism score ( $P > 0.05$ ). The percentage of professionalism score of third-year and higher residents was 8% higher than that of second-year residents ( $P = 0.052$ , Table 2).

**Table 1.** Mean and standard deviation of the percentage of scores of professionalism domains acquired by dental residents

Domain	Number	Mean (out of 100)	Std. deviation
Excellence (4 items)	55	94.84	05.19
Honor/integrity (4 items)	57	94.76	35.19
Empathy (2 items)	57	05.67	33.18
Altruism and respect (7 items)	57	37.66	71.16

**Table 2.** Professionalism score percentage based on gender, academic year, and field of specialty of residents

Variables	Category	Number	Mean	Std. deviation
<b>Gender</b>	Male	13	50.74	79.16
	Female	42	33.75	06.15
<b>Academic year</b>	Second	21	49.70	52.16
	Third	26	82.77	08.14
	Fourth	8	59.78	83.14
<b>Field of specialty</b>	Pediatric dentistry	7	38.73	99.15
	Periodontics	6	77.77	31.21
	Endodontics	4	84.82	49.7
	Oral medicine	4	47.76	08.10
	Prosthodontics	8	36.9	04.77
	Restorative dentistry	6	44.66	31.20
	Orthodontics	8	84.14	14.80
<b>Field of specialty</b>	Oral and maxillofacial radiology	6	99.77	21.11
	Oral and maxillofacial surgery	6	63.19	14.65

## Discussion

The present results showed that the mean total percentage of the professionalism score of dental residents was optimal, standing at 75.13% out of 100%. Additionally, 60% of residents acquired a professionalism score over 75%.

Consistent with the present findings, Ahadi et al. [8] evaluated 43 residents of physical medicine and rehabilitation using the Persian version of ABIM professionalism questionnaire, and reported a mean professionalism score of 7.67 out of 10. DeLisa et al. [12] assessed 122 physical medicine and rehabilitation residents and reported their high professionalism score (7.67 out of 10). Elyassi Gorji et al. [13] evaluated 106 dental students using a researcher-designed questionnaire and reported optimal level of professionalism. Jabarifar et al. [14] assessed 20 dental residents using a researcher-made questionnaire and showed optimal level of professionalism (4.25 out of 5). Alfari et al. [15] reported optimal attitude of

medical residents towards professionalism. The results of the abovementioned studies were in agreement with the present findings.

Unlike the present study, Kazemipoor et al. [5] assessed 56 senior dental students using P-MEX and reported their low level of professionalism. Mianehsaz et al. [7] used the Persian version of ABIM professionalism questionnaire to assess 160 medical residents and found very low professionalism scores. Amini et al. [4] used the Persian version of ABIM professionalism questionnaire to assess 250 medical residents and reported a mean perceived professionalism score of 6.85 out of 10. The perceived professionalism of medical specialists was not acceptable in their study [4]. Differences in sample size, field of study, and field of specialty can explain the differences in the results. In the study by Aramesh et al. [6], on 259 residents, the mean professionalism score was found to be 6.12 out of 10, which was not acceptable. Differences in field of education, geographical location of education, and culture can affect the results. Also, 9 dental specialties

were evaluated in the present study and the samples were homogenous across the groups; while, other studies evaluated 18 to 19 specialties.

In the present study, excellence followed by honor/integrity, altruism/respect, and empathy acquired the highest percentage of professionalism scores, which was consistent with the results of Mianehsaz et al. [7].

In the present study, excellence acquired the highest score, which indicates that the respondents believed that their role models were good and did not need further improvement. The honor/integrity domain indicates that whether the respondents believe that their peers are honorable and avoid unprofessional behaviors. A high score in honor/integrity domain indicates that the residents believe that their peers are completely honest and honorable. Amini et al. [4], Aramesh et al. [6], Ahadi et al. [8], and DeLisa et al. [12] reported that the highest score belonged to the honor/integrity domain, and the lowest score to the excellence domain in their studies. Since professionalism is influenced by the culture and environment [11], differences in geographical location of education, and culture of residents can explain differences in the results. Also, it should be noted that the abovementioned studies did not assess the empathy domain. Similar to all religions, Muslims have one religion but different levels of commitment [15].

In the present study, the percentage of professionalism of third-year and higher residents was 8% higher than that of second-year residents, which may be attributed to higher experience and longer communication of residents at a higher academic level with patients and higher number of services provided to patients by them, which can result in improvement of their professionalism. Nonetheless, academic year had no significant effect on professionalism score in studies by Alfari et al. [15], Amini et al. [4], Mianehsaz et al. [7], Ahadi et al. [8], and Alavi et al. [16] which were all conducted on medical residents; these

findings were in contrast to the results of Partovi et al. [17].

In the present study, 31.6% of dental residents were not familiar with the term "professionalism", 57.9% had not received any training in this respect, and 77.2% had no self-study about this topic. The rate of acquaintance with this concept was 27% in the study by Mianehsaz et al. [7] and 76% of residents in their study had no self-study about it, which was highly similar to the present findings. However, in the study by Amini et al, [4] 50% of medical residents were not familiar with professionalism, and over 75% of them had no self-study about it. In the study by Ahadi et al, [8] 90% of residents had no self-study about this topic. Residents with higher level of knowledge about professionalism expect their peers to adhere to the principles of professionalism, and thus, may estimate the level of professionalism of their peers more carefully. Alavi et al. [16] found that the average score of knowledge of professional ethics was 9.95 (55.2%) in 150 dental students. The level of knowledge among dental students towards the principles of professional ethics was moderate in their study and this knowledge was not related to demographic characteristics or educational status of the students.

The mean professionalism score of residents had no significant correlation with their gender in the present study. It appears that professionalism is not influenced by gender of residents, and both male and female residents should have this competency. This finding was in agreement with the findings of other studies [8,14,15]. Nonetheless, some others reported higher positive attitude of females towards professionalism [13,17]. These findings are similar to those of Alavi et al [16].

The present results showed that age of residents had no significant effect on their professionalism. This finding was in accordance with the results of Jabarifar et al, [14] on dental residents.

In the present study, residents assessed the level of professionalism of their peers (peer to peer observation or P2P). P2P has been suggested as a method for assessment of progression of participants [4]. P2P was used in the present study to analyze the perceived professionalism by dental residents in their working/educational environment. P2P can be used to assess the opinion of the participants regarding the level of adherence of their peers to professionalism.

It should be noted that educational packages related to professionalism and patient rights are not present as independent topics in dental education curricula. Thus, it is necessary to design specific educational courses with learning strategies and optimal assessment for education of such skills, as previously emphasized in the literature [14,17,18]. Moreover, professionalism is a complex multi-dimensional skill and therefore its definition, instruction, and assessment are more difficult than other medical skills. The level of professionalism cannot be clearly and precisely estimated and it has limited generalizability. Longitudinal studies in all national dental schools are required to collect data by interview, questionnaires, and observation of behaviors in clinical practice, if possible, to eliminate the shortcomings, enable evidence-based dental education, and design and implement educational strategies for instruction of this skill to dental students. On the other hands, dental students face many difficulties during their course of education such as high stress level, high tuition fees, and difficulties in finding a job, which can affect their professional behavior and professionalism [19]. The authors believe that workshop meetings in the field of ethics, empathy, and professionalism and role modelling presentations during residency could help improve these qualities in clinicians [20].

This study had some limitations. Filling out the questionnaire as self-report by dental residents might have affected the responses. Also, generalization of results should be done

with caution since this study was conducted in only one dental school.

## Conclusion

According to the present findings, dental residents had optimal level of professionalism and attitude. Residents acquired the highest score in honor/integrity and the lowest score in altruism/respect domain. Thus, professionalism continuing education courses are recommended to improve the attitude and focus on altruism and respect to empower dental residents.

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