

Comparison of the Rate of Empathy of Dental Students and Dentists with Drug Addicted Dental Patients in Isfahan, Iran, in 2018: A Descriptive Cross Sectional Study

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Original Article

Abstract

Introduction: The relationship between oral health care providers and the service customers has been noticed seriously by dental education system. The aim in this study is to study and compare the rate of empathy of dentists and dental students with addicted subjects in Isfahan, Iran, in 2018.

Materials and Methods: In this cross-sectional study, the study population consisted of dental students of Isfahan (Khorasgan) Branch, Islamic Azad University, and dentists working at dental clinics of Isfahan. In total, 100 participants from each group entered the study by the convenience sampling method. A two-part questionnaire including demographic information and Jefferson Scale of Empathy (JSE) was filled out by the volunteers. The chi-square test, Fisher's exact test, independent t-test, Pearson's correlation coefficient, and a linear regression model were employed for statistical analysis of the data.

Results: The rate of empathy with the addicted subjects was significantly higher among the dentists (62.01 ± 4.06) in comparison to the dental students (59.05 ± 4.48) ($P < 0.001$). The mean score of empathy was not significantly different between men and women or between single and married dentists and dental students ($P > 0.050$). A direct but poor association was revealed between the age of dental students and their empathy with the addicted subjects ($r = 0.271$; $P \leq 0.050$), but among the dentists, age was not associated with empathy ($P = 0.780$). Based on the linear regression model, the rate of empathy of the dentists with the addicted subjects was significantly higher than that of the dental students ($P < 0.001$). No significant association existed between the empathy rate and demographic characteristics such as gender, age, marital status, and job experience ($P > 0.050$).

Conclusion: Although the rate of empathy with the addicted subjects was significantly higher among the dentists compared to the dental students, both groups revealed a moderate level of empathy. Thus, dental education program planners should introduce such educational programs into the dental curricula to increase the empathy with drug addicted individuals.

Keywords: Empathy; Drug addiction; Dental students; Dentist

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Introduction

The communication and mutual understanding between the dental care service provider and receiver has been seriously considered by the dental education planners. The key point in this effective relationship is the capability of understanding and empathy between the dentist and the clients (1). Empathy with

clients refers to understanding the conditions, emotions, and perceptions of the clients, and at the same time, maintaining your professional beliefs to effectively take care of them (2). Empathy is described as "the process of involvement in the emotions and thoughts of others without changing your own attitude and way of living" and is a

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powerful communication tool that means understanding the experiences, concerns, and views of others along with the ability to express it (94).

In another view, empathy is the fundamental potential of individuals in regulating relationships, supporting joint activities, and group cohesion, which plays an important role in social life (5). It is also an essential element for the successful interpersonal functioning (6), allowing the individual to simulate the mental, cognitive, and emotional states of others internally. This simulation of others' situations prepares the individual to participate in appropriate empathetic behaviors (7). In other words, the emotional response to another person and the cognitive ability to understand his point of view are at the two ends of the range of empathy (8).

The relationship between dentists and patients, and their peace and consent, like many health care fields, needs an appropriate level of empathy. Understanding the internal emotions and views of the clients and ability to interact with them, in addition to increasing dental technical skills, is crucial to create a correct relationship and its survival as well as the effectiveness of services provided to the clients (9). Signs of empathy between dentists and patients appear in verbal and non-verbal communication. Dentists and physicians with more empathy are more competent in taking history, clinical examination, need assessment, treatment planning, prescribing post-treatment orders, and gaining cooperation of the clients. This leads to the increased patient satisfaction, decreased operational errors and deviations from the professional rights, decreased complaints and grievances of individuals, motivating patients to keep detailed track of orders, as well as the successful outcomes of treatment provided by the dentist (10).

Empathy with the drug addict, by creating a sense of trust, informs him that he needs treatment and the staff and the treatment environment accompany him in this regard (11). Addicted people become isolated in the society because they escape the stamp of the word "addicted" on their foreheads, and this isolation causes them not to ask for help. Most of these subjects have become addicted for psychological reasons and need psychological support. Empathy and support for addicts in society, especially by health care providers, is the first and most important step in improving and quitting their addiction.

From a legal point of view, addiction is considered a crime, and the addicted person is considered a criminal by engaging in abnormal addiction behavior, but in the medical field, all clients

have the same rights. Having a negative perception or less attention to addicted patients compared to other clients by nurses and physicians is a deviation from their professional mission and requires the need for empathy and support of addicted people. Koohestani et al. also noted this point in their study (12).

The Community Medical Education College in the United States has recently suggested that medical universities should teach medical students in a way that increases the amount of empathy among them (10). This will lead to better treatment methods by recognizing their feelings and emotions and will lead to a higher treatment efficiency. Due to the great attention paid to the advancement of technical methods in dentistry, little attention has been paid to treatments that take into account the psychological problems of patients. The Jefferson Scale of Empathy (JSE) in medical centers, nursing, and dentistry is being used on a limited basis. However, most of the existing studies have been conducted on dental students and less information is available in relation to the empathy of the public dentists with clients. Alaei et al. reported that there was a low level of empathy among Iranian dentists (9). On the other hand, searching the databases show that the level of empathy in dentists with the addicts has been ignored by researchers. Therefore, the present study is conducted with the purpose to compare the empathy of dental students of Isfahan (Khorasgan) Branch, Islamic Azad University, Isfahan, Iran and dentists working in Isfahan dental clinics with drug addicts.

Materials and Methods

This was a cross-sectional study with a statistical population including dental students of Isfahan (Khorasgan) Branch, Islamic Azad University, and dentists working in dental clinics in Isfahan. The present study was registered with the ethics code IR.IAU.YAZD.REC.1397.078 and the details of the project were fully explained to the participants and informed consent was obtained from all of them. The sample size for the two-way test at a significance level of 5% ($\alpha = 0.05$), with a test power of 80% ($\beta = 0.2$) and also, to detect a difference of 40% of the standard deviation (SD) ($\delta = 0.41$), was estimated to be 91 subjects in each group (13). Taking into account a 10% as the sample drop, 100 individuals were selected for each group using the convenience sampling method. The student samples were selected from the fifth- and sixth-year of education dental students, all of whom had an experience in clinical practice. For both groups, general explanations about

the response to the JSE questionnaire were provided and if they were willing to participate in the study, the questionnaires were provided to them.

To collect the data, the two-part questionnaire including personal information and JSE scale was employed. The scale consisted of 20 items with three subscales, including adopting an attitude (items 2, 4, 5, 9, 10, 13, 15, 16, 17, and 20), empathetic care (items 1, 7, 8, 11, 12, 14, 18, and 19), and putting yourself in the client's shoes (items 3 and 6), with each item given a score of 5 to 1 on a Likert scale from strongly agree to strongly disagree, respectively. The JSE scale included 10 negative items scored reversely. Therefore, the total score of individuals was in the range of 20 to 100, and the higher the total score, the higher the level of empathy with the client. A total score of 40-50, 50-60, 60-70, 70-80, 80-90, and above 90 indicated respectively very poor, poor, moderate, good, very good, and excellent empathy (11,14,15).

The validity and reliability of the JSE questionnaire was confirmed in the study by Hashempour and Karami conducted at Kerman University of Medical Sciences, Kerman, Iran (14). Prior to starting the study, the questionnaire was given to 12 dental students and 12 working dentists. The reliability of the questionnaire was confirmed based on a Cronbach's alpha coefficient of 0.712.

Data were analyzed using paired-t, independent-t, χ^2 , and Fisher's exact tests in SPSS software (version 20, IBM Corporation, Armonk, NY, USA).

Results

In the present study, 100 dental students and 100 dentists were studied. The demographic characteristics of the samples in the two groups are presented in table 1. Given this table, the individuals of the two groups showed significant differences with each other in the demographic characteristics.

The level of empathy of the dentists and dental students was moderate. The degree of empathy of the dentists (62.01 ± 4.06) with the addicts was significantly higher than that of the dental students (59.05 ± 4.48) ($P < 0.001$). There was no significant difference between the two groups of dental students

and dentists in terms of the subscale of adopting an attitude, but the empathic care subscale was reported more in the dentists compared to the dental students. The subscale of putting yourself in the client's shoes was higher in the dental students than in the dentists (Table 2).

There was no significant difference in the mean variable of empathy with addicts between men and women in any of the dental and dental student groups (Table 3).

The mean empathy with addicts did not show a significant difference between single and married students in any of the groups (Table 4).

Based on the results of the Pearson correlation coefficient test, there was a significantly direct and weak relationship between the total age of individuals and their level of empathy ($P < 0.001$, and $r = 0.314$). Therefore, the level of empathy in older subjects was higher than that in younger subjects, but due to poor communication, no significant difference was observed. Moreover, the Pearson correlation coefficient test indicated that there was a direct and poor relationship between the age of dental students and their empathy with the addicts ($P \leq 0.006$, $r = 0.271$). In other words, with increasing age of the students, their empathy increased as well, however in the group of dentists, the age variable did not show a significant relationship with the empathy variable ($P \leq 0.780$, $r = 0.029$). Therefore, increasing age in the group of dentists had no effect on increasing empathy.

Since the age, gender, marital status, and work history of the two groups of dental students and dentists differed significantly from each other and the role of the confounding variable could have been applied, the regression model was used to investigate the effect of these confounding variables and eliminate their effect. In the regression model, the variables of age, gender, work experience, and marital status had no significant effect on the level of empathy and by eliminating their effect, only the effect of the groups (dental students and dentists) on the level of empathy with addicts was significant ($P \leq 0.031$) and the rate of empathy of the dentists with addicts was higher compared to that of the dental students (Table 5).

Table 1. Demographic characteristics of the subjects

Group	Gender (%)		Marital status (%)				Age (year) (mean \pm SD)	Job experience
	Female	Male	Single	Divorced	Died spouse	Divorced		
Dentists	36	64	33	64	1	2	37.8 ± 6.7	10.6 ± 74.6
Dental students	57	43	73	27	0	0	24.4 ± 2.6	0
P value	0.003*		< 0.001*				< 0.001*	< 0.001*

Table 2. Mean of empathy and its subscales by study groups

Subscales	Group	Mean \pm SD	P value
Adopting an attitude	Dentists	28.65 \pm 3.30	0.260
	Dental students	29.17 \pm 3.20	
Empathetic care	Dentists	25.84 \pm 2.50	< 0.001
	Dental students	24.34 \pm 2.80	
Putting yourself in the client's shoes	Dentists	5.56 \pm 1.60	< 0.001
	Dental students	7.51 \pm 1.80	
Empathy	Dentists	62.01 \pm 4.06	< 0.001
	Dental students	59.09 \pm 4.48	

Table 3. Variable of mean empathy with addicted people by gender in the study groups

Group	Gender	Mean \pm SD	P value
Dental students	Male	59.6 \pm 4.5	0.260
	Female	58.6 \pm 4.4	
Dentists	Male	62.5 \pm 3.9	0.080
	Female	61.1 \pm 4.2	

Discussion

In the present study, a comparison was made in the level of empathy of dentists and dental students with addicts. In the initial assessment, the level of empathy of the dentists was significantly higher than that of the dental students (Table 2), but since the variables of age, marital status, work experience, and gender in the two groups showed a significant difference (Table 1), these variables could affect the results as the confounding variables. Therefore, the initial findings was not sufficient and by eliminating the effect of the confounding variables, the effect of the group on the empathy was obtained to be significant again (Table 4), hence confirming the initial findings.

Table 4. Variable of mean empathy with addicts by marital status in the study groups

Group	Marital status	Mean \pm SD	P value
Dental students	Single	58.7 \pm 4.1	0.260
	Married	59.9 \pm 5.5	
Dentists	Single	62.0 \pm 4.3	0.910
	Married	62.1 \pm 3.8	

Table 5. Regression model coefficients of factors affecting empathy with addicts

	Sum of squares	Degree of freedom	Mean squared	F	P value
Corrected model	714.860	8	89.358	5.108	< 0.001
Constant coefficient	2953.160	1	2953.160	168.803	< 0.001
Gender	30.659	1	30.659	1.752	0.187
Group	82.869	1	82.869	4.737	0.031
Age	20.090	1	20.090	1.148	0.258
Job experience	2.917	1	2.917	0.167	0.683
Age \times Group	62.886	1	62.886	3.595	0.059
Marital status	93.397	3	31.132	1.780	0.152
Error	3341.501	191	17.495	-	< 0.001
Total	736889.892	200	89.358	-	< 0.001
Total corrected	4056.367	199	2953.168	-	0.187

The results of the present study suggested that there was a direct but poor relationship between the subjects' age and their level of empathy. Additionally, there was a direct and poor relationship between the students' age and their level of empathy with the addicts. In other words, older students were more empathetic than the younger ones; however, in the dentists, age did not show a significant relationship with the empathy variable. In a study by Shahab et al., younger students obtained higher empathy scores in comparison to the older ones (16). The findings obtained in this field were consistent with the findings of the study of Hashempor and Karami (14), but were not in line with the results of the study performed by Shariat and Kaykhavoni (17).

Their study, which was conducted in order to investigate the level of empathy of assistants in various fields in different age groups, did not reveal a significant difference in different age groups (17). Explaining this finding, it can be claimed that empathy is one of the feelings that is mostly related to childhood and passing through childhood, the feeling of emotional empathy gives way to the sense of cognitive empathy gradually, as in many cases, adults express their sense of empathy in accordance with the social status and level of education. With age, individuals are more likely to wish receiving empathy or perhaps compassion from those around them than to express that feeling to others (14).

In the present study, gender and marital status did not significantly affect the variable of empathy with addicts among the dental students and dentists, which is in agreement with the results of the study by Shariat and Kaykhavoni (17). In their study, there was no significant difference between the level of empathy between male and female physicians as well as between married and single physicians (17). Nevertheless, the study by Shahab et al. indicated that the level of empathy in female students was higher than that in the male ones (16). In a study carried out by Jabarifar et al., the level of empathy of male students was higher than that of girls (10), which contradicts the findings of the study of Shahab et al. (16).

In explaining the above findings, it can be argued that in terms of psychological structure and empathetic characteristics of psychology, it seems natural that the level of empathy in women is higher than men. This difference may be due to the fact that women respond more to emotional signals and, on the other hand, female therapists spend more time caring for their clients (16). The reason for the difference in the present study can be explained by the fact that gender differences in empathy are most evident when individuals are asked to rate their own empathy-related behavior or emotional response, and in such situations women get higher scores than men. However, when more subtle methods are applied, and the purpose of the situation assessment is not clear, such as when intangible empathy scales like physiological scales and facial expressions are used (18), different results emerge. Another reason for the difference between the results of the present study and the three above-mentioned studies (10,16,17) is in the type of clients.

In all three studies above, empathy with clients was expressed generally (10,16,17); while the present study addressed empathy with addicted clients. This issue can cause the individual to be influenced by culture and social attitude towards this stratum of society in all responses, and in contrast to his professional duties, he may not show a high level of empathy.

Given the results of the present study, there was a significant difference in the rate of empathy with addicted people among the dentists and dental students, with the rate of empathy in dentists being significantly higher than that in the dental students. This implicitly confirms the positive effect of clinical experience in promoting empathy. However, the empathy scores of both groups were moderate. There was no similar study in this regard to be compared to the present study, but Ghoddoosi and Jafari in their study compared the score of empathy of nurses with drug addicts in inpatient wards and drug abuse

treatment centers with the score of empathy of nurses with clients of the hemodialysis ward and found that the empathy of nurses in the hemodialysis ward was higher than that of the nurses in inpatient wards and drug abuse treatment centers. This finding revealed a stronger empathy of nurses with non-addicts compared to the addicts, but since there are also addicted clients in the hemodialysis wards, their study did not report the share of the addicted individuals in the inpatient and hemodialysis wards, which is one of the weaknesses of their study (11).

Jabarifar et al. conducted a study to investigate the degree of empathy of general education students and dental assistants of Isfahan School of Dentistry with their clients and did not report a significant difference between empathy of third year general students with dental assistants, but the level of empathy increased with age. Therefore, educational planning seems to be necessary to strengthen the atmosphere of empathy between students and patients (10). Sherman and Cramer also conducted a study aiming to measure the changes in empathy in the School of Dentistry and suggested that training students in the area of interpersonal skills to improve the relationship between dentist and client had to be continued during their studies at the School of Dentistry (1). Shahab et al. (16) and Alaei et al. (9) each separately examined the empathy level in dentists and dental students and concluded that educational planning is necessary to strengthen empathy.

Limitations

One of the limitations of the present study was the type of clients (addicted people). This issue can cause the individual to be influenced by culture and social attitude towards this stratum of society in all responses, and in contrast to his professional duties, he may not show a high level of empathy.

Another limitation was the use of self-reporting tools, and errors could have been occurred in completing the questionnaires. Furthermore, due to performing the study in educational settings (about students), it may not be possible to portray the reality of dental services at the community level.

Recommendations

The empathy scores of both groups were in the moderate level. Taking advantage of the results of the current study, the dental education planners and professors are recommended to add targeted programs to these curricula to increase the empathy of dentists and dental students with drug addicts. It is also suggested that using a standard questionnaire, in

future studies, the participants knowledge, attitudes, and perceptions about addiction and addicts be analyzed alongside the JSE scale. With these results, the cause of moderate or poor empathy can be extracted more accurately, in addition to designing appropriate educational programs. The results of this study cannot be generalized to other universities and more investigations are required to be conducted throughout the country.

Conclusion

The mean score of empathy with addicts in dentists was significantly higher than that of dental students. This implicitly confirms the positive effect of clinical experience in promoting empathy. However, the empathy scores of both groups were in the moderate level.

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Authors' Contribution

Reza Madvari-Barfeh: Data collection, manuscript preparation, specialized evaluation of manuscript in terms of scientific concepts, approval of the final manuscript to be sent to the journal office, responsibility for maintaining the integrity of the study process from the beginning to publication, and

responding to the referees' comments; Arash Ghodosi: study design and ideation, supportive, executive, and scientific services of the study, analysis and interpretation of results, specialized evaluation of the manuscript in terms of scientific concepts, approval of the final manuscript to be sent to the journal office, responsibility for maintaining the integrity of the study process from the beginning to publication, and responding to the referees' comments; Hajar Shekarchizadeh: supportive, executive, and scientific services of the study, analysis and interpretation of results, specialized evaluation of the manuscript in terms of scientific concepts, approval of the final manuscript to be sent to the journal office, responsibility for maintaining the integrity of the study process from the beginning to publication, and responding to the referees' comments; Somayeh Abbasi: supportive, executive, and scientific services of the study, specialized statistics services, specialized evaluation of the manuscript in terms of scientific concepts, approval of the final manuscript to be sent to the journal office, responsibility for maintaining the integrity of the study process from the beginning to publication, and responding to the referees' comments.

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Conflict of Interest

The authors declare no conflicts of interest.

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