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Ağız Sağlığı ve Diş Protez Teknolojisi Öğrencilerinin Empati Düzeylerinin Değerlendirilmesi: Kesitsel Bir Çalışma

Evaluatıon Of Empathy Levels Of Oral Health And Dental Prosthesıs Technology Students: A Cross-Sectıonal Study

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ÖZ

Bu kesitsel çalışma, ağız sağlığı ve diş protez teknolojisi öğrencilerinin empati düzeylerini ve bakış açılarını değerlendirmeyi amaçlamaktadır. Çalışma, Bingöl Üniversitesi Sağlık Hizmetleri Meslek Yüksekokulu Ağız Diş Sağlığı ve Diş Protez Teknolojisi Bölümü'nde klinik eğitime başlayan ikinci sınıf öğrencileri arasında yapılan bir anket çalışması olarak tasarlanmıştır. Empati düzeylerini ölçmek için hekim empati ölçeğinin JSPE-HP versiyonu kullanılmıştır. Bu çalışmaya %58,5'i diş protez teknolojisi ve %41,5'i ağız diş sağlığı öğrencisi olmak üzere toplam 53 öğrenci katılmıştır. Tüm katılımcılar için genel ortalama JSPE-HP puanı 74.49±9.55 olarak bulunmuştur. Kız öğrencilerin empati puan ortalaması erkek öğrencilerden daha yüksek olmasına rağmen, istatistiksel olarak anlamlı bir fark bulunmamıştır (p=0,293). Bu çalışma, JSPE-HP ölçeğinin meslek yüksekokulu öğrencileri arasında güvenilir ve geçerli bir empati ölçümü sağladığını ve bu ölçüme dayalı olarak perspektif alma becerisinde bir fark olmadığını göstermektedir. Bu sonuçlar, empati becerilerinin geliştirilmesine klinik ve teorik eğitimin eklenmesi gerektiğini düşündürmektedir.

Anahtar Kelimeler: Empati, Jefferson Hekim Empatisi Ölçeği, Perspektif Alma, Şefkatli Bakım, İletişim, Hasta Merkezli Sağlık Bakımı

ABSTRACT

This cross-sectional study aimed to evaluate empathy levels and perspectives of oral health and dental prosthetic technology students. The study was designed as a survey conducted among second-year students who started clinical education in the Department of Oral Health and Dental Prosthetics Technology at Bingol University Health Services Vocational School. The JSPE-HP version of the physician empathy scale was used to measure empathy levels. A total of 53 students participated in this study, of which 58.5% were dental prosthetic technology students and 41.5% were Oral Health students. The overall average JSPE-HP score for all participants was found to be 74.49±9.55. Although the average empathy score of the female students was higher than that of the male students, no statistically significant difference was found (p=0.293). This study shows that the JSPE-HP scale provides a reliable and valid measure of empathy among vocational school students, and there is no difference in perspective-taking ability based on this measurement. These results suggest that clinical and theoretical education should be added to the development of empathy skills.

Keywords: Empathy, Jefferson Scale of Physician Empathy, Perspective-Taking, Compassionate Care, Communication,   Patient-Centered   Health   Care

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INTRODUCTION

Empathy refers to an individual's ability to comprehend and experience the thoughts and emotions of others by adopting their perspective and accurately reflecting these emotions back to them. Empathy is particularly important in the field of healthcare (1). In healthcare services, empathy is important for understanding patients' emotions, thoughts, and experiences. The ability to understand a patient's symptoms and how these symptoms affect them is a cognitive/behavioral trait that should be effectively communicated to the patient (2).

Empathic communication is an important method for encouraging societies to avoid harmful behaviors or take preventive measures (3). The American Dental Education Association considers empathy to be one of the most important clinical competencies for dentists (4). Active listening, empathy, and communication skills are now taught in many dental faculties (5).

We believe that the empathic behavior of the dentist alone is not sufficient; rather, the oral health and dental prosthetic technician with whom they work should display the same empathic behavior. Based on the evidence supporting our belief, we believe that our planned study will help reinforce awareness of empathy among oral and dental health and dental prosthetic technology students. However, there is insufficient information in the literature on this subject. Therefore, this study aimed to contribute objective information to the literature by evaluating the empathy levels and perspectives of oral and dental health and dental prosthetic technology students.

Various methods such as patient evaluations, personal assessments, peer assessments, observation of behavior, and psychometric tests are used to evaluate empathic skills. Healthcare professionals prefer personal evaluation scales (6). The Jefferson Scale of Physician Empathy (JSPE) was created to measure empathy levels among physicians (7). There are two versions of JSPE: the S version for medical students and the HP version for clinicians. JSPE has been used in studies involving many healthcare students (8). However, only one study has been found that evaluated the empathy levels of oral and dental health, and dental prosthetic technology students.

The primary objectives of this study were to assess the validity and reliability of the JSPE-HP when applied to dental hygiene and dental prosthetic technology and to evaluate their attitudes and empathy levels.

MATERIALS AND METHODS

This descriptive survey was conducted among 2nd-year undergraduate students of the Department of Oral and Dental Health and Dental Prosthetic Technology of Bingol University Health Services Vocational School (HSVS) during the 2022-2023 academic year. The study was designed cross-sectionally, and only voluntary participants who consented to participate in the study after being informed about the scope, subject, and purpose of the research were included. Participants who did not agree to participate and those who were not in their 2nd year were excluded. The study was conducted in accordance with the principles outlined in the Declaration of Helsinki and was performed by two expert dentists from different departments.

The 2nd-year students of the Department of Oral and Dental Health and Dental Prosthetic Technology of the Health Services Vocational School receive internship training in their 2nd year and undertake tasks that require empathic behavior. The JSPE-HP version of the Physician Empathy Scale was used to measure the empathy levels in this study. JSPE-HP is a self-evaluation questionnaire consisting of 20 items, each of which is rated on a 5-point Likert scale ranging from "strongly agree, agree, neutral, disagree, and strongly disagree." The survey questions are scored from 1 to 5, and the scoring criteria are as follows: "1=strongly disagree," "2=disagree," "3=neutral," "4=agree," and "5=strongly agree." The JSPE-HP was developed to

show the 3 factors of clinical empathy, namely "perspective-taking," "Emotional engagement/compassionate care," and " standing in the patient's shoes." The 10 items related to "perspective-taking" are scored directly, while the 5 items expressed negatively are related to "Emotional engagement/compassionate care" and the last 5 items are related to "standing in the patient's shoes" All 10 items on the scale are scored inversely, and the total empathy score ranges from 20 to 100. A higher score indicated a higher behavioral tendency towards empathic participation in patient care. However, only one study has evaluated the empathy level of dental prosthetic technology students has been conducted.

Descriptive statistics were calculated for the data using the arithmetic mean ± standard deviation for continuous variables and frequency and percentage for categorical variables. The Student's t-test was used to examine gender differences in each component's total score on the scale. One-way (ANOVA) analysis of variance was used to assess the differences between departments for the component totals.

RESULTS AND DISCUSSION

The study involved 53 students, with 24 (45.3%) males and 29 (54.7%) females among the participants, 31 (58.5%) were studying Prosthetic Technology and 22 (41.5%) were studying Oral and Dental Health. Table 1 presents the descriptive statistics for each quantitative variable.

Table 1. Descriptive statistics

		n (%)	Mean ± SD	Median (Minimum-Maximum)
Gender	Male	24(%45,3)		
	Female	29(%54,7)		
Department	Dental Prosthetic Technology	31(%58,5)		
	Oral and Dental Health	22(%41,5)		
Standing in the Patient's Shoes			22,38± 3,12	22(16-29)
Perspective Taking			32,43± 3,77	32(24-38)
Emotional Engagement/Compassionate Care			19,68± 5,53	21(6-29)
Total			24,47± 7,08	23,5(6-38)

The summary of the factor analysis and Cronbach's alpha values for the 20 items of the JSPE-HP are shown in TABLE 2. Factor analysis revealed that all items loaded onto the first factor of empathy, except for Items 1 and 7. Items in this factor generally indicated the principle of "perspective-taking" in empathy, "standing in the patient's shoes."Items 8-16 formed the second factor of empathy, which involved "Emotional engagement/compassionate care," or responding to patient needs by understanding their physical, emotional, and psychological difficulties. Items 17-20 of the JSPE-HP formed the third factor, which reflected the ability to "mentally simulate" the feelings and experiences of patients (Table 2).

Table 2. Summary of factor analysis and Cronbach alpha values for 20 items of JSPE-HP.

JSPE-HP questionnaire	Factor		
	1	2	3
I try to imagine myself in my patients' shoes when providing care to them.I try to think like my patients in order to render better care.	-0,231	0,74	0,096
An important component of the relationship with my patients is my understanding of their emotional status, as well as that of their families.	-0,128	0,769	-0,316
I try to think like my patients in order to render better care.	-0,12	0,676	-0,513
My patients feel better when I understand their feelings.	-0,127	0,724	0,263
I believe that empathy is an important therapeutic factor in medical or surgical treatment.	-0,29	0,733	-0,034
Empathy is a therapeutic skill without which success in treatment is limited.	-0,228	0,674	-0,369
My patients value my understanding of their feelings, which is therapeutic in its own right	-0,244	0,772	0,121
I do not allow myself to be influenced by strong personal bonds between my patients and their family members.	0,511	-0,029	-0,041
Attentiveness to my patients' personal experiences does not influence treatment outcome.	0,644	0,161	-0,514
I believe that emotion has no place in the treatment of medical illness.	0,672	0,387	-0,332
I try not to pay attention to my patients' emotions in history taking or in asking about their physical health.	0,811	0,111	0,031
My understanding of how my patients and their families feel does not influence medical or surgical treatment	0,832	0,312	-0,04
Patients' illnesshiaes can be cured only by medical or surgical treatment; therefore, emotional ties to my patients do not have a significant influence on medical or surgical outcomes.	0,746	0,314	0,145
Asking patients about what is happening in their personal lives is not helpful in understanding their physical complaints.	0,645	0,039	0,228
I do not enjoy reading nonmedical literature and the arts.	0,666	0,163	0,237
It is difficult for me to view things from my patients' perspectives.	0,746	0,286	0,213
I consider understanding my patients' body language as important as verbal communication in caregiver-patient relationships.	-0,249	0,668	0,291
Because people are different, it is difficult for me to see things from my patients' perspectives.	0,668	0,19	0,231
I try to understand what is going on in my patients' minds by paying attention to their nonverbal cues and body language.	-0,327	0,352	0,307
I have a good sense of humor, which I think contributes to a better clinical outcome.	-0,215	0,602	0,376
Eigenvalue	5,4	5,17	1,52
Explained variance (%)	27,03	25,85	7,59
Total explained variance (%)	60,49		
Reliability coefficient (Cronbach's alpha):	0,839		

Using the orthogonal varimax rotation and principal component "factoring" method, a 3-factor solution explaining 60% of the total item variance was selected for the JSPE-HP. The eigenvalues were 5.4, 5.17, and 1.52; the factors explained 27.03%, 25.85%, and 7.59% of the item variance, respectively. A loading factor of at least 0.30 was applied to include an item in a particular factor (Table 2).

The Kaiser-Meyer-Olkin sampling adequacy measure yielded an index of 0.729, indicating that the data were suitable for factor analysis. Bartlett's sphericity test indicated that the correlation matrix was factorable (x (190) = 636.85, p < 0.001). Each factor had at least three items for a stable factor structure. The internal consistency value of the JSPE-HP scale for dental students was calculated using Cronbach's alpha coefficient and found to be 0.839. (Table 2)

The total average JSPE-HP score for all participating students was 74.49±9.55. The average empathy score for females was (75.76±8.32) higher than that for males (72.96 ± 10.84), but this difference was not statistically significant (p=0.293). However, the average empathy score for students in the dental technology program was 70.55±7.88, which was significantly lower than students in the oral and dental health department, with a score of 77.29±9.75 (p=0.01).

Table 3 presents the statistical differences in scores according to gender and department. It was observed that there were no differences in the JSPE-HP subgroups based on gender. However, based on the department variable, there were significant differences in the "standing in the patient's shoes" and "emotional engagement/compassionate care" subgroups (p<0.05). In both subgroups, oral and dental health department students obtained higher scores.

Table 3: Differences of all scores according to department and gender variables of HSVS students.

	Department			Gender		
	Dental Prosthetic Technology (n=22)	Oral and Dental Health		Female (n=29)	Male (n=24)	
	Mean ± SD	Mean ±SD		Mean±SD	Mean ± SD	
Standing in the Patient's Shoes	21,05±2,88[a]	23,22±2,98[b]	,008	22,59±2,66	22,13±3,65	0,598
Perspective Taking	31,91±3,42	32,81±4,01	,398	32,45±3,46	32,42±4,19	0,976
Emotional Engagement/Compassionate Care	17,59±5,62[a]	21,16±5,04[b]	,019	20,72±4,78	18,42±6,18	0,132

SS: Standard deviation. a, b Different letters on the same line represent statistically significant difference (p<0.05).

Empathy remains one of the most valuable traits of the healthcare sector. Empathy is a priority in meeting individuals' expectations of health care, where there is high communication with people. Therefore, empathy has recently received intense interest among healthcare professionals and has been the subject of numerous studies (9-13).

This study aimed to evaluate the empathy levels of dental technology students and the reliability and validity of the JSPE-HP for empathic measurement. For internal consistency (reliability), Cronbach's alpha coefficient was calculated as in previous studies (9,14,15), and we used the JSPE-HP to evaluate the students' empathic tendencies. Similar to our study, Sherman and Cramer and Ameh et al. reported that the JSPE-HP could be used as a suitable scale to measure students' empathy levels (5,14).

The structural validity of the JSPE-HP is a three-domain empathy measurement, including "perspective-taking," "Emotional engagement/compassionate care," and "standing in the patient's shoes," which is similar to the principal component analysis of the current study. Consistent with the findings of previous studies, "perspective-taking" was the most significant dimension in the principal component analysis (2,5,10). "Perspective-taking" and "Emotional engagement/compassionate care" have been defined as the fundamental elements of empathy (15). Similar to our study, "standing in the patient's shoes" also emerged as a third factor in previous studies (2,16).

Our study's mean JSPE-HP score for all participating students was 74.49±9.55. This rate was lower than that of dental students in Malaysia and India and medical students' studies conducted in different countries (7,18,19). Differences in cultural, religious, and traditional backgrounds may be related to differences in the total empathy scores. Consistent with other studies, girls were more empathetic than boys were (5,7,18,19).

First, this study was limited to a single university. Therefore, comparative studies involving multiple institutions will help develop these findings. Another limitation is that this cross-sectional study identified empathy levels in different departments, rather than tracking changes in empathy levels over students' years of education. Cohort studies investigating empathy scores throughout education will clarify the changes in empathy levels.

CONCLUSION

Based on the results of this study, the JSPE-HP is a reliable and valid tool for evaluating empathy levels among vocational high school students. Furthermore, no significant differences in perspective-taking were observed on the basis of this assessment. However, Oral and Dental Health Department students scored higher in putting on the patient's shoes and caring for them. Therefore, it is recommended that clinical and theoretical education be included to develop empathy skills.

REFERENCES

1. Williams B, Sadasivan S, Kadirvelu A, Olaussen A. Empathy levels among first year Malaysian medical students: an observational study. Adv Med Educ Pract. 2014; 5:149-56.

2. Hojat M, Gonnella JS, Nasca TJ, Mangione S, Vergare M, Magee M. Physician empathy: definition, components, measurement, and rela- tionship to gender and specialty. Am J Psychiatry. 2002;159(9):1563-9.

3. King DB, Kamble S, DeLongis A. (2016). Coping with influenza A/H1N1 in India: empathy is associated with increased vaccination and health precautions. International Journal of Health Promotion and Education, 54(6), 283-294.

4. ADEA Competencies for the New General Dentist: (As approved by the 2008 ADEA House of Delegates). J Dent Educ. 2017;81(7):844-7.

5. Sherman JJ, Cramer A. Measurement of changes in empathy during dental school. J Dent Educ. 2005;69(3):338-45.

6. Benbassat J, Baumal R. What is empathy, and how can it be promoted during clinical clerkships? Acad Med. 2004;79(9):832-9.

7. Hojat M, Gonnella JS, Nasca TJ, Mangione S, Veloksi JJ, Magee M. The Jefferson Scale of Physician Empathy: further psychometric data and differences by gender and specialty at item level. Acad Med. 2002;77(10 Suppl): S58-60.

8. Henderson S. (2021). A pilot study of meditation as a stress reliever for dental hygiene students during times of heightened stress.

9. Kaya E, Öztan N. (2022). Diş Hekimliği Fakültesi Öğrencilerinin Empati Düzeylerinin Değerlendirilmesi: Kesitsel Bir Çalışma. Turkiye Klinikleri Journal of Dental Sciences, 28(3).

10. Javed MQ. (2019). The evaluation of empathy level of undergraduate dental students in Pakistan: a cross-sectional study. Journal of Ayub Medical College Abbottabad, 31(3), 402-406.

11. Nazir M, Alhareky M, Alqahtani A, Alsulaimi L, Alotaibi R, Yousef N, Alhumaid J. (2021). Measuring empathy among dental students and interns: a cross-sectional study from dammam, saudi Arabia. International Journal of Dentistry.

12. Bas-Sarmiento P, Fernandez-Gutierrez M, Baena-Banos M, Correro-Bermejo A, Soler-Martins PS, de la Torre-Moyano S. (2020). Empathy training in health sciences: A systematic review. Nurse Education in Practice, 44, 102739.

13. Sevrain-Goideau M, Gohier B, Bellanger W, Annweiler C, Campone M, Coutant R. (2020). Forum theater staging of difficult encounters with patients to increase empathy in students: evaluation of efficacy at The University of Angers Medical School. BMC medical education, 20, 1-8.

14. Ameh PO, Uti OG, Daramola OO. Empathy among dental students in a Nigerian institution. Eur J Dent Educ. 2019;23(2):135-42.

15. Baloş Tuncer B, Canıgür Bavbek N, Arslan Avan B, Çelik B, Tuncer C. The influence of clinical training level on the empathy levels of under- graduate and postgraduate dental students. Acta Odontol Turc. 2021;38(1):1-7.

16. Kane GC, Gotto JL, Mangione S, West S, Hojat M. Jefferson Scale of Pa- tient's Perceptions of Physician Empathy: preliminary psychometric data. Croat Med J. 2007;48(1):81-6.

17. Fjortoft N, Van Winkle LJ, Hojat M. Measuring empathy in pharmacy stu- dents. Am J Pharm Educ. 2011;75(6):109.

18. Babar MG, Omar H, Lim LP, Khan SA, Mitha S, Ahmad SFB, et al. An as- sessment of dental students' empathy levels in Malaysia. Int J Med Educ. 2013; 4:223-9.

19. Quince T, Thiemann P, Benson J, Hyde S. (2016). Undergraduate medical students' empathy: current perspectives. Advances in medical education and practice, 443-455.