Research Article / Araştırma Makalesi

Evaluation of Medical Students' Orientations in the Patient-Physician Relationship and Empathy Levels

Tıp Fakültesi Öğrencilerinin Hasta-Hekim ilişkisi Yönelimleri ve Empati Düzeylerinin Değerlendirilmesi

Hasta-Hekim İlişkisi Yönelimi ve Empati

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Abstract: Today, a patient-centered approach that takes into account the psychosocial dimensions of health and promotes patient parrticipation and partnership in the patient relationship is becoming increasingly important. It is aimed to determine the orientations in the patient-physician relationship and some variables thought to be related to it, and to assess the level of empathy among medical students. This cross-sectional study was conducted among 1169 medical students at the Faculty of Medicine at Eskişehir Osmangazi University (ESOGU) between May-June 2022. In the study, the Patient-Physician Orientation Scale (PPOS) was used to measure the students' orientations in the patient-physician relationship and the Jefferson Scale of Physician Empathy (JSPE) was used to measurement empathy levels. Mann-Whitney U, Kruskal-Wallis tests, Spearman correlation and Multiple Linear Regression analyses were used. Of the participants, 606 (51.8%) were male and 679 (58.1%) were in their preclinical years. Their ages ranged between 18-52 years with a mean of 21.48±1.96 years. The participants' scores on the PPOS ranged between 1.36-5.36 with a mean score of 3.68±0.54 points, while the scores on the JPES ranged between 44-135 with a mean score of 96.5±14.18 points. It was found that there was a weak positive correlation between the scores obtained from the PPOS and the scores obtained from the JPES (r=0.297, p<0.001). As a result of multiple linear regression analysis, it was found that having a Type B personality, participating in any training/activity related to the patient-physician relationship and an increased level of empathy were associated with scores obtained from PPOS (F=17.784, p<0.001). Although medical students' orientations in the patient-physician relationship was found to be closer to patient-centeredness, it was not at the expected level.
Keywords: Medical student, patient-physician relationship, patient-centered, empathy

Özet: Çağımızda hasta-hekim ilişkisinde sağlığın psikososyal boyutlarının dikkate alındığı, hastanın katılımını ve ortaklığını teşvik eden hasta merkezli yaklaşım giderek önem kazanmaktadır. Bu araştırmada, tıp fakültesi öğrencileri arasında hasta-hekim ilişkisi yönelimlerinin, ilişkili olduğu düşünülen bazı değişkenlerin incelenmesi ve empati düzeylerinin değerlendirilmesi amaçlanmıştır. Bu kesitsel çalışma, Mayıs-Haziran 2022 tarihleri arasında Eskişehir Osmangazi Üniversitesi (ESOGÜ) Tıp Fakültesi'nde öğrenim görmekte olan 1169 öğrenci üzerinde gerçekleştirilmiştir. Çalışmada, Hasta-hekim ilişkisi yönelimlerini belirlemek için Hasta-Hekim Yönelim Ölçeği (HHYÖ) ve empati düzeyleri belirlemek için Jefferson Doktor Empati Ölçeği'nden (JDEÖ) kullanılmıştır. İstatistiksel değerlendirmede, Mann-Whitney U, Kruskal-Wallis testleri, Spearman korelasyon ve Çoklu Lineer Regresyon analizleri kullanılmıştır. Katılımcıların 606'sı (%51.8) erkek, 679'u (%58.1) ise klinik öncesi sınıflarda öğrenim görmekte idi. Yaşları 18-52 arasında değişmekte olup yaş ortalaması 21.48±1.96 yıl idi. Çalışma grubunun HHYÖ'den aldıkları puanlar 1.36-5.36 arasında değişmekte olup ortalaması 3.68±0.54 iken JDEÖ ölçeğinden aldıkları puanlar 44-135 arasında değişmekte olup ortalaması 96.5±14.18 idi. HHYÖ'den elde edilen puanlar ile JDEÖ'den elde edilen puanlar arasında pozitif yönde zayıf bir korelasyon olduğu bulundu (r=0.297, p<0.001). Çoklu Lineer Regresyon analizi sonucunda B tipi kişiliğe sahip olma, hasta-hekim ilişkisi yönelimleri hakkında herhangi bir eğitim veya etkinliğe katılma ve artan empati düzeyleri ile HHYÖ'den alınan puanlar arasında ilişki olduğu saptandı (F=17.784, p<0.001). Tıp fakültesi öğrencilerinin hasta-hekim ilişkisi yönelimlerinin hasta merkezliliğe daha yakın olduğu tespit edilse de beklenen düzeyde olmadığı saptanmıştır.
Anahtar Kelimeler: Tıp öğrencisi, Doktor-hasta ilişkisi, hasta-merkezli, empati

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1. Introduction

The relationship between patient and physician is one in which the patient's data is recorded and analysed, a diagnosis and treatment plan are drawn up and the patient receives information and medical support in managing their health problem (1,2). Providing and maintaining effective patient-physician communication in this relationship, which is one of the fundamental elements of medical treatment and care, is very important for the quality of healthcare services and has a positive impact on the patients' health (3,4). The most important element of communication between patient and physician is the physician's communication skills, style and orientation (5,6).

The traditional approach in the patient-physician relationship, also known as the "physician or disease centered approach", which takes place under the direction and authority of the physician, who is active, executive and decisive in the diagnosis and treatment process, has continued until the 20th century (7). The physician-centered approach is characterized by the biomedical model, in which the pathophysiological aspects of the disease are considered and evaluated, while psychosocial and behavioral dimensions can be disregarded. However, the evidence-based biomedical model can easily lead to the uniqueness, individual preferences, values and needs of patients being neglected (8). With the technological and scientific developments of the last 50 years, the relationship between patient and physician has evolved towards a "patient-centered approach", i.e. a more egalitarian approach in which the patient is informed and involved in the process and encouraged to make joint decisions by ensuring their participation (9).

The patient-centered approach is based on the biopsychosocial model, in which the pathophysiological and biomedical elements of health or illness as well as the psychological and social dimensions are included and treated within a holistic framework (10). The patient-centered approach strongly advocates viewing the patient as a unique individual, taking into account their preferences, values and needs and encouraging their active participation in shared decisions and processes (10,11).

It is reported that with a patient-centered approach, patient and physician satisfaction increases, the relationship between patient and physician improves, the quality of healthcare and the quality of life of patients increases and patient compliance with responsibility and treatment is more positive (12). In addition, the patient-centered care is considered one of the 6 fundamental components of high-quality healthcare (13). Furthermore, patient-centered care is reported to have positive effects on the healthcare system and organizations, such as reducing further investigations and treatments, referrals, hospitalizations and healthcare costs (14,15).

In addition to their professional knowledge and skills, physicians develop their professional attitudes and behaviors during medical training, which they must adhere to in the practice of their profession (16). The traditional medical curriculum and clinical environment is based on a disease or physician-centered approach that focuses on the biomedical mechanisms of diseases (17). This situation makes the diagnosis of diseases, the identification of their causes and their treatment the main purpose of the patient-physician relationship and leads physicians to focus on treating the disease rather than treating the patient (16). The recognition of the importance of a patient-centered approach to the patient-physician relationship has been emerged by developments such as a greater emphasis on the humanities and social sciences, communication skills, professional values and a greater consideration of the psychosocial determinants of disease in the pre-graduate medical education curricula (18–20).

Empathy, which plays an important role in the relationship between patient and physician, is one of the fundamental components of the patient-centered approach. It is also at the center of the delivery of high quality healthcare services (21,22). Empathy in the patient-physician relationship can be defined as the ability of the physician to cognitively recognize and understand the patient's

perspective, experiences, feelings and thoughts and to return this understanding to the patient (23,24). Empathic communication in clinical conversations has been reported to lead to positive outcomes such as higher quality of healthcare, higher patient-physician satisfaction, lower likelihood of miscommunication and medical errors by improving the quality of patient-physician communication and the data obtained (25,26). In addition, empathic communication can facilitate the improvement of the patient's health outcomes by helping to ensure that the patient adheres to and participates in treatment (25,27).

In our study, it was aimed to determine the orientations in the patient-physician relationship, to examine some variables thought to be related to it, and to evaluate the level of empathy of medical students at Eskisehir Osmangazi University (ESOGU) Faculty of Medicine.

2. Materials and Methods

This study is a cross-sectional study, conducted on medical students of the ESOGU Faculty of Medicine between May-June 2022.

Administrative and ethical approval (E-25403353-050.99-338104, 24.05.2022) was obtained to conduct the study. A total of 1633 medical students studying at the ESOGU Faculty of Medicine in the academic year 2021-2022 formed the population of the study. Sampling was not taken in the study and an attempt was made to reach all students. Medical educations in Turkey as in most European countries run a 6-year program. The Turkish undergraduate medical program has a 6-year compulsory curriculum, which is divided into 3 years of mainly basic medical science education, 2 years of clinical clerkship and 1 year of internship.

A questionnaire form prepared by utilizing the literature was used for data collection in the study (17,28,29). The questionnaire consists of some socio-demographic characteristics of the students (age, gender, years of medical school, personality type, etc.), some variables assumed to be related to orientations in the patient-physician relationship (history of chronic and mental diseases diagnosed by a physician, perception of academic achievement status, status of medical examination at least once in the last year, etc.), questions from the Patient Practioner Orientation Scale (PPOS) and questions from the Jefferson Scale of Physician Empathy (JSPE).

During the study, students attending the faculty were visited in the exam halls where they gathered for board exams or in the services and outpatient clinics where they did their internships, and they were informed about the subject and purpose of the study. Verbal consent was obtained from those who agreed to take part in the study. The prepared questionnaires were then completed by the students under observation. This process took about 10-15 minutes. Students who did not agree to participate in the study, did not attend the faculty during the study period and did not answer the questions of the questionnaire completely were excluded from the study. A total of 1169 (71.6%) students who agreed to participate in the study made up the study group.

In our study, the "Patient-Physician Orientation Scale (PPOS)" was used to evaluate orientations in the patient-physician relationship of the medical students. The PPOS was developed by Krupat et al. in 1999 and adapted into Turkish by Özdemir et al. in 2018 (28,30). The scale consists of a total of 14 items in six-point Likert type (strongly agree to strongly disagree). Two of the items on the scale (item 7 and 11) are reverse scored. The average total score that can be achieved with the PPOS is between 1 and 6, with low scores indicating a preference for a physician-centered approach and high scores indicating a preference for a patient-centered approach. The overall PPOS score was calculated as the mean of the total score of 14 items.

The students' empathy level was assessed using the student version of the Jefferson Scale of Physician Empathy (JSPE). The JSPE was developed by Hojat et al. in 2001 (23,31). The Turkish validity and reliability study of the scale was conducted by Gönüllü

et al. in 2017 (32). The scale consists of a total of 20 items in seven-point Likert type (strongly disagree to strongly agree). Ten of the items on the scale (items 1, 3, 6, 7, 8, 11, 12, 14, 18, 19) are reverse-scored. The total score that can be achieved with the scale is between 20 and 140, and a high score indicates a high level of empathy.

In the study, the first three years of medical school were categorized as "pre-clinical" and the last three years as "clinical". In the study group, those who described themselves as "hectic, enthusiastic, hasty and impatient" were categorized as "Type A personality" and those who described themselves as "patient, calm, planned and programmed" were categorized as "Type B personality" (33). The students' academic achievement status was rated as "below average", "average" and "above average" according to their own perception and the class average.

The data obtained were evaluated in the SPSS V15.0 statistical package program. Frequency, percentage, mean, median, standard deviation and min-max were used to analyze the descriptive data. Kolmogorov-Smirnov test was used for the conformity of measurable data to normal distribution. Mann-Whitney U test, Kruskal-Wallis test, Spearman Correlation and Multiple Linear Regression analysis (enter method) were used for analysis. For Linear Regression analysis, logarithmic transformation was performed to approximate the normal distribution of some variables. $p<0.05$ was accepted as statistical significance value.

3. Results

The study group consisted of 563 (48.2%) females, 606 (51.8%) males. Their ages ranged between 18-52 years, with a mean of 21.48 ± 1.96 years. The number of pre-clinical students was 679 (58.1%), the number of students with Type B personality was 624 (53.4%) and the number of students with above average academic achievement was 295 (25.2%). The PPOS scores of participants ranged from 1.36-5.36, with a mean score of 3.68 ± 0.54 (median=3.71). The distribution of the PPOS scores of the study group according to some sociodemographic characteristics is given in Table 1.

Table 1. Distribution of the PPOS scores of the study group according to some sociodemographic characteristics

Sociodemographic Characteristics	n (%)	The PPOS Score Median (min-max)	Statistical Analysis Z / KW; p
Age (years)			
≤20	401 (34.3)	3.71 (1.71-5.07)	
21-22	421 (36.0)	3.71 (2.29-5.36)	**12.577; 0.002**
≥23*	347 (29.7)	3.64 (1.36-5.36)	
Gender			
Female*	563 (48.2)	3.71 (1.36-5.36)	
Male	606 (51.8)	3.64 (1.36-5.14)	**2.970; 0.003**
Year of Medical Education			
Pre-clinical years*	679 (58.1)	3.71 (1.71-5.36)	
Clinical years	490 (41.9)	3.64 (1.36-5.29)	**3.145;0.002**
Personality Type			
Type a	545 (46.6)	3.63 (1.36-5.29)	
Type b*	624 (53.4)	3.71 (1.36-5.36)	**2.287; 0.022**
Academic Achievement Status			
Below avarage	242 (20.7)	3.64 (1.36-5.29)	
Avarage	632 (54.1)	3.71 (1.36-5.29)	0.329; 0.848
Above avarage	295 (25.2)	3.71 (1.36-5.29)	
Total	1169 (100)	3.68 (1.36-5.36)	

statistically significant group (p<0.05)

In the study group, 179 (15.3%) had a history of physician-diagnosed chronic disease and 145 (12.4%) had a history of physician-diagnosed mental disease. While 891 (76.1%) of the students reported having at least one health check-up within the past year, 705 (60.3%) of students reported participation in a social activity at least once a week. The distribution of the scores obtained by the participants from the PPOS according to some variables thought to be related to orientations in the patient-physician relationship is given in Table 2.

Table 2. Distribution of the PPOS scores of the study group according to some variables thought to be related to orientations in the patient-physician relationship

Related Variables	n (%)	The PPOS Score Median (min-max)	Statistical Analysis z; p
History of Chronic Disease			
Non	990 (84.7)	3.68 (1.36-5.36)	1.139; 0.255
Present	179 (15.3)	3.63 (2.00-5.29)	
History of Mental Disease			
Non	1024 (87.6)	3.71 (1.36-5.29)	0.162; 0.871
Present	145 (12.4)	3.71 (1.71-5.36)	
Any Health Check-up Within the Past Year			
Non	278 (23.8)	3.64 (1.36-5.07)	**2.421; 0.015**
Present*	891 (76.2)	3.71 (1.71-5.36)	
Participating Any Social Activities in Weekly			
Non	464 (39.7)	3.71 (1.36-5.21)	0.008; 0.994
Present	705 (60.3)	3.71 (1.36-5.36)	
Satisfaction With Having Chosen the Profession of Medicine			
Non	560 (47.9)	3.64 (1.36-5.29)	**2.263; 0.024**
Present*	609 (52.1)	3.71 (1.71-5.36)	
Participation in Any Training/Activity on Patient-Physician Relationship			
Non	317 (27.1)	3.64 (1.36-5.36)	**3.463; 0.001**
Present*	852 (72.9)	3.71 (1.71-5.29)	
Total	1169 (100)	3.68 (1.36-5.36)	

statistically significant group (p<0.05)

The scores of the study group on the JSPE ranged 44-135, with a mean of 96.5 ± 14.18 points. There was a weak positive correlation between the medical students' scores on the PPOS and their scores on the JSE (r=0.279, p<0.001). The distribution of the PPOS and JSPE scores of the study group is given in Figure 1.
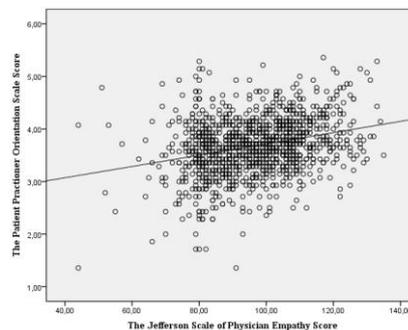

Figure 1. The distribution of the PPOS and JSPE total scores of the study group

As a result of multiple linear regression analysis (enter method), it was found that personality type, participation in any training/activity related to the orientations in patient-physician relationship, the JSPE total score were associated with the scores obtained from the PPOS (F=17,784, p<0.001). The results of multiple linear regression analysis of the total scores obtained from the PPOS with the variables considered to be related to orientations in the patient-physician relationship are given in Table 3.

Tablo 3. Multiple linear regression analysis results of the PPOS total score and variables thought to be related to orientations in the patient-physician relationship

Sociodemographic Characteristics and Related Variables	The PPOS Score		
	Standardized β	Unstandardized β (95% CI*)	p
Age	-0.023	-0.219 (-0.992-0.554)	0.579
Gender	0.041	0.631 (-0.218-1.480)	0.145
Year of Medical Education	0.058	0.901 (-0.357-2.159)	0.160
Personality Type	0.074	1.126 (0.292-1.959)	**0,008**
Any Health Check-up Within the Past Year	0.055	0.981 (-0.018-1.981)	0.054
Satisfaction With Having Chosen the Profession of Medicine	0.035	0.527 (-0.321-1.375)	0.223
Participation in Any Training/Activity on Patient-physician Relationship	0.122	2.085 (1.143-3.027)	**<0.001**
The Jefferson Scale of Physician Empathy Score	0.254	0.137 (0.107-0.167)	**<0.001**
R^2	**0.103**		**<0.001**
F	**17,784**		

Confidence Interval

4. Discussion

Nowadays, it is a fact that sharing approaches that take into account the psychosocial dimensions of health, are sensitive to the patient's individual preferences, values and needs, and promote patient participation and partnership in the patient-physician relationship are becoming increasingly important. Patient-centeredness in the patient-physician relationship is propagated today as the ideal approach (13). In this regard, it is extremely important to evaluate the professional knowledge and skills of medical students, who will be the physicians of the future, as well as their attitudes toward patient-physician relationship orientations in their professional lives.

In this study, in which we assessed medical students' orientations in patient-physician relationship rather than their actual patient-centered behavior, we found that students' orientations were closer to patient-centeredness. Some studies conducted among medical students in Turkey have also reported similar orientations (29,34). In a meta-analysis conducted by Bejarano et al. on attitudes the patient-physician relationship of medical students, it was reported that medical students have a low patient-centered attitudes,

while medical students in the USA had more patient-centeredness compared to students in other countries (35). The level of patient-centered attitudes among medical students found in our study is lower than the results of studies conducted on European and American medical students (19,36,37). The reasons for the different results reported in the various studies may be differences in the socio-cultural structures, medical education programs, models and learning environments of the countries in which the studies were conducted.

In patient-physician communication, it is reported that female physicians are more willing to make joint decisions with patients, are more sensitive to psychosocial issues in medicine and are more patient-centered (38). Various studies conducted among medical students, have reported that women have a more patient-centered attitude (29,36,39). In our study, no difference was found between male and female students with regard to orientations in the patient-physician relationship. Similar results have been reported in various studies (19,40,41). The meta-analysis conducted by Bejarano et al. emphasizes that the importance of the difference between male and female in terms of attitudes toward patient-physician relationship of medical students is not clear (35). In addition, it was reported that gender differences in the orientations in patient-physician relationship among students tend to disappear as they progress compared to the first years of medical school and that women are also tend to adapt the usual physician-centered approach culture (42).

It is known that the most important factors that determine the relationship between patient and physician are certain attitudes, training, personality and similar characteristics of physicians (10). In addition, interpersonal communication skills and personality traits play an important role in shaping the relationship between patient and physician (43). Some studies have found a relationship between personality type and patient-centeredness and empathy skills (44,45). In our study, students with "Type B personality" traits were found to have a more

patient-centered approach. It is known that individuals with type A personality tend to show authority and superiority in interpersonal communication, while individuals with type B personality are more flexible, sensitive and harmonious (46).

Training in patient-physician communication and biopsychosocial model are included in the curricula of most medical faculties today and form the basis of patient-centered approach. In the National Core Education Programme (NCEP), which provides for the standardization of the undergraduate medical education curriculum in Turkey, behavioral, social and human sciences are addressed in the education of students, and the adoption of the biopsychosocial model and patient-centeredness, which provides a holistic assessment of health, is emphasized (20). In our study, 72.9% of the students were found to have participated in any kind of training or activity related to the attitudes toward patient-physician relationship. In the study group, students who reported that they had participated in any training or activity about patient-physician relationship orientations were found to have more patient-centered orientation. Similar results were reported in the study conducted by Krupat et al. on medical faculty students (28). In some studies, it has been reported that medical school students found their education on psychosocial aspects of medicine, which is one of the important elements of patient-centered orientation, inadequate, felt themselves inadequate and could not find enough practice opportunities during their clinical rotations (47,48). Woloschuk et al. reported that despite efforts to improve the undergraduate medical education curriculum, medical students' attitudes and idealism towards patient-centered orientation, social and behavioral elements of health and patient-centeredness declined during their education (18).

Clinically, empathy is defined as a cognitive characteristic that includes the ability to emotionally understand the patient's inner experiences and perspective and to communicate in accordance with this understanding (24,49). Empathy is not only an

important skill in the patient-physician relationship, but it is also very effective on attitudes toward patient-physician relationship (29,44,50). Our study found that students with a high level of empathy exhibit a patient-centered approach in the patient-physician relationship. It is to be expected that physicians who can empathize with their patients and have a high level of empathy apply a sharing and egalitarian model in the patient-physician relationship (27).

The limitations of this study include the fact that the cross-sectional type of the study may be insufficient to uncover causal relationships. The fact that the study was conducted on students from a single medical faculty represents a limitation with regard to the generalizability of the results.

5. Conclusion

As a result, although it was found that orientations in patient-physician relationship of medical faculty students were closer to

patient-centeredness in our study, it can be said that it was not at the expected level. It was found that patient-centered approach was more pronounced in those with type B personality, those who participated in any kind of training or activity related to the orientations in patient-physician relationship, and those with a high empathy level.

To achieve and raise awareness of a patient-centered approach in the patient-physician relationship, it may be useful to organize educational activities for students that are appropriately considered and plan within the medical school curriculum and clinical learning environment. In addition, training to improve and maintain empathy skills can be organized to shape students' orientations in the patient-physician relationship. Moreover, it may be useful to conduct comprehensive and further studies to uncover the reasons for the acquisition and adoption of these skills and orientations and their relationship to empathy levels during undergraduate medical student training.

REFERENCES

1. Ong LML, de Haes JCJM, Hoos AM, Lammes FB. Doctor-patient communication: A review of the literature. Soc Sci Med. 1995;40(7):903–18.
2. Goold SD, Lipkin M. The doctor-patient relationship. J Gen Intern Med. 1999 ;14(S1):S26–33.
3. Stewart MA. Effective physician-patient communication and health outcomes: a review. C Can Med Assoc J. 1995;152(9):1423.
4. Maguire P. Key communication skills and how to acquire them. BMJ. 2002;325(7366):697–700.
5. Barry CA. Patients' unvoiced agendas in general practice consultations: qualitative study. BMJ. 2000;320(7244):1246–50.
6. Haskard Zolnierek KB, DiMatteo MR. Physician Communication and Patient Adherence to Treatment. Med Care. 2009 ;47(8):826–34.
7. Kaba R, Sooriakumaran P. The evolution of the doctor-patient relationship. Int J Surg. 2007 ;5(1):57–65.
8. Bensing J. Bridging the gap. Patient Educ Couns. 2000;39(1):17–25.
9. Tate P, Frame F. The doctor's communication handbook. 2019;
10. Mead N, Bower P. Patient-centredness: a conceptual framework and review of the empirical literature. Soc Sci Med. 2000;51(7):1087–110.
11. Castro EM, Van Regenmortel T, Vanhaecht K, Sermeus W, Van Hecke A. Patient empowerment, patient participation and patient-centeredness in hospital care: A concept analysis based on a literature review. Patient Educ Couns. 2016;99(12):1923–39.
12. Robinson JH, Callister LC, Berry JA, Dearing KA. Patient-centered care and adherence: Definitions and applications to improve outcomes. J Am Acad Nurse Pract. 2008;20(12):600–7.
13. Committee on Quality of Health Care in America. Crossing the quality chasm: a new health system for the 21st century. National Academies Press; 2001.
14. Olsson L, Hansson E, Ekman I, Karlsson J. A cost-effectiveness study of a patient-centred integrated care pathway. J Adv Nurs. 2009 ;65(8):1626–35.
15. Stewart M, Ryan B, Bodea C. Is Patient-Centred Care Associated with Lower Diagnostic Costs? Healthc Policy | Polit Santé. 2011;6(4):27–31.
16. Thomas PA, Kern DE, Hughes MT, Tackett SA, Chen BY. Curriculum development for medical education: a six-step approach. JHU press; 2022.

17. Haidet P, Dains JE, Paterniti DA, Hechtel L, Chang T, Tseng E, et al. Medical student attitudes toward the doctor-patient relationship. Med Educ. 2002;36(6):568–74.

18. Woloschuk W, Harasym PH, Temple W. Attitude change during medical school: a cohort study. Med Educ. 2004 ;38(5):522–34.

19. Tsimtsiou Z, Kerasidou O, Efstathiou N, Papaharitou S, Hatzimouratidis K, Hatzichristou D. Medical students' attitudes toward patient-centred care: a longitudinal survey. Med Educ. 2007;41(2):146–53.

20. Yükseköğretim Kurulu. Mezuniyet Öncesi Tıp Eğitimi Ulusal Çekirdek Eğitim Programı- 2020.

21. Irving P, Dickson D. Empathy: towards a conceptual framework for health professionals. Int J Health Care Qual Assur. 2004;17(4):212–20.

22. Larson EB. Clinical Empathy as Emotional Labor in the Patient-Physician Relationship. JAMA. 2005 ;293(9):1100.

23. Hojat M, Mangione S, Nasca TJ, Cohen MJM, Gonnella JS, Erdmann JB, et al. The Jefferson Scale of Physician Empathy: Development and Preliminary Psychometric Data. Educ Psychol Meas. 2001;61(2):349–65.

24. Halpern J. What is clinical empathy? J Gen Intern Med. 2003;18(8):670–4.

25. Derksen F, Bensing J, Lagro-Janssen A. Effectiveness of empathy in general practice: a systematic review. Br J Gen Pract. 2013;63(606):e76–84.

26. Mercer SW, Reynolds WJ. Empathy and quality of care. Br J Gen Pract. 2002;52(Suppl):S9-12.

27. Bellet PS. The Importance of Empathy as an Interviewing Skill in Medicine. JAMA J Am Med Assoc. 1991;266(13):1831.

28. Krupat E, Hiam CM, Fleming MZ, Freeman P. Patient-Centeredness and its Correlates among First Year Medical Students. Int J Psychiatry Med. 1999;29(3):347–56.

29. Önal Ö, Tamam İ, Nur Eroğlu H. Bir Tıp Fakültesi 4-5-6. Sınıf Öğrencilerinin Hasta-Hekim İlişkisinde Hasta Merkezliliğe Yönelik Tutumları ve İlişkili Faktörler. SDÜ Tıp Fakültesi Derg. 2020;27(2):200–8.

30. Özdemir S, Edirne T. Hasta-Hekim Yönelim Ölçeğinin (HHYÖ) Türkçeye uyarlanması. Tıp Eğitimi Dünyası. 2018;17(51):21–32.

31. Hojat M, Mangione S, Nasca TJ, Rattner S, Erdmann JB, Gonnella JS, et al. An empirical study of decline in empathy in medical school. Med Educ. 2004;38(9):934–41.

32. Gonullu I, Oztuna D. Turkish Adaptation Of The Student Version Of Jefferson Scale Of Physician Empathy. Marmara Med J. 2012;25(2).

33. Lateef A, Dahar MA, Yousuf MI. Influence of type A and type B personality on academic achievement of university students. Glob Soc Sci Rev. 2019;4(2):109–18.

34. Tontus H, Nebioglu S. Changing on Patient-Centred Attitudes on Same Students Group; A Qualitative Study. J Gen Pract. 2018;06(01):2.

35. Bejarano G, Csiernik B, Young JJ, Stuber K, Zadro JR. Healthcare students' attitudes towards patient centred care: a systematic review with meta-analysis. BMC Med Educ. 2022;22(1):324.

36. Wahlqvist M, Gunnarsson RK, Dahlgren G, Nordgren S. Patient-centred attitudes among medical students: Gender and work experience in health care make a difference. Med Teach. 2010;32(4):e191–8.

37. Wilcox M V, Orlando MS, Rand CS, Record J, Christmas C, Ziegelstein RC, et al. Medical students' perceptions of the patient-centredness of the learning environment. Perspect Med Educ. 2016;6(1):44–50.

38. Roter DL, Hall JA. Physician Gender and Patient-Centered Communication: A Critical Review of Empirical Research. Annu Rev Public Health. 2004;25(1):497–519.

39. Ribeiro MMF, Krupat E, Amaral CFS. Brazilian medical students' attitudes towards patient-centered care. Med Teach. 2007;29(6):e204–8.

40. Shankar R, Dubey A, Mishra P, Deshpande V, Chandrasekhar T, Shivananda P. Student attitudes towards communication skills training in a medical college in Western Nepal. Educ Heal Chang Learn Pract. 2006 ;19(1):71–84.

41. Ahmad W, Krupat E, Asma Y, Fatima N-E-, Attique R, Mahmood U, et al. Attitudes of medical students in Lahore, Pakistan towards the doctor–patient relationship. PeerJ. 2015;3:e1050.

42. Batenburg V, Smal JA, Lodder A, Melker RA de. Are professional attitudes related to gender and medical specialty? Med Educ. 1999 ;33(7):489–92.

43. Elfstrand Corlin T, Kajonius PJ, Kazemi A. The impact of personality on person-centred care: a study of care staff in Swedish nursing homes. Int J Older People Nurs. 2017;12(2):e12132.

44. Xu H, Xue R, Hao S. Attitudes toward patient-centeredness, personality and empathy of Chinese medical students. Pers Individ Dif. 2021;176:110777.

45. Moon SW, Nam BW, Seo JS, Ryu EJ, Kweon HJ, Sohn IK, et al. Patient-Centeredness Associated with Personality Traits of Medical Students. Korean J Med Educ. 2006;18(1):77–85.

46. Zainab Waheed, Sofi a Shehzad, Sabeen Rahim, Waleed Ahmad, Samir Khan Kabir, Hamid Hussain. Type A/B Personality in Undergraduate Medical Students and Group Pressure; Conformity. J Khyber Coll Dent. 2022;12(2):65–8.

47. Chen C (Amy), Kotliar D, Drolet BC. Medical education in the United States: do residents feel prepared? Perspect Med Educ. 2015;4(4):181–5.

48. Astin JA, Sierpina VS, Forys K, Clarridge B. Integration of the Biopsychosocial Model: Perspectives of Medical Students and Residents. Acad Med. 2008 ;83(1):20–7.

49. Stepien KA, Baernstein A. Educating for empathy. J Gen Intern Med. 2006 ;21(5):524–30.

50. Hojat M, Gonnella JS, Mangione S, Nasca TJ, Veloski JJ, Erdmann JB, et al. Empathy in medical students as related to academic performance, clinical competence and gender. Med Educ. 2002 ;36(6):522–7.

Ethics