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# Evaluation of empathy and biopsychosocial approaches of medical faculty assistant doctors

Ebru Cicek, Ahmet Yilmaz<sup>1</sup>, Hamza Aslanhan<sup>1</sup>

## Abstract:

**INTRODUCTION AND AIM:** Biopsychosocial approach suggests that the individual's health condition is partly influenced by the interactions of biological, psychological, and social processes. It also concludes that the clinical method should be patient-centered, which is based on the physician's involvement in the patient's world and the physician's ability to see the illness from the patient's view. In this study, we aimed to determine the extent to which medical faculty assistant doctors use the biopsychosocial approach in their clinical practice.

**MATERIALS AND METHODS:** Our study is a cross-sectional type, descriptive, and analytical research. The sample size consisted of assistant doctors who met the inclusion criteria which were accepted to participate in the study between December 1, 2017, and March 1, 2018, at the medical faculty hospital of Dicle University. Two hundred and three physicians participated in our study. The Patient-Physician Orientation Scale (PPOS), The Jefferson Scale of Physician Empathy (JSPE), and a survey study including questions in relation with sociodemographic characteristics were conducted in our study. The reliability of the Patient-Physician Orientation Scale (PPOS) and JSPE used in our study was tested with Cronbach's alpha and found to be 0.878 and 0.931, respectively. Questionnaires were administered by a face-to-face interview method during interview. Information on the purpose and method of the study was given.

**RESULTS:** A total of 203 physicians participated in our study. One hundred and forty-three (70%) participants were male and 60 (30%) were female. According to medical disciplines, eight physicians (3, 9%) from psychiatry, 21 (10, 3%) from family medicine, 104 (51, 2%) from other internal medical disciplines, and 70 (34, 5%) from surgical medical disciplines participated in the study. In the first subgroup of the PPOS, which is used in our study, the average score of psychiatry physicians was  $3.67 \pm 0.99$ , family medicine assistant doctors  $3.92 \pm 0.67$ , other internal medical disciplines  $3.98 \pm 0.65$ , and surgical medical discipline  $3.83 \pm 0.61$ . In the second subgroup, which is defined as the care in the same scale, the average score of psychiatry assistant doctors was found to be  $3.20 \pm 0.45$ , family medicine assistant doctors  $3.68 \pm 0.54$ , other internal medical disciplines  $3.49 \pm 0.60$ , and surgical medical discipline  $3.68 \pm 0.58$ . The results of the Jefferson Scale used to determine the level of empathy in our study are found as psychiatry  $78.25 \pm 14.78$ , family physician  $67.71 \pm 14.69$ , other internal medical disciplines  $72.03 \pm 13.46$ , and surgical medical discipline  $70.87 \pm 15.24$ .

**CONCLUSIONS:** The biopsychosocial approach is primarily an elementary approach model in medical discipline such as family medicine and should be applied to other internal and surgical medical disciplines as well. With conducting this study, the awareness of this area will be increased and related issues in the literature will be enriched.

## Keywords:

Biopsychosocial model, empathy, family physician, patient-centered care

Family Medicine Center,  
Siverek, Siverek,  
Sanliurfa, Turkey,  
<sup>1</sup>Department of Family  
Medicine, Dicle University  
Medical Faculty,  
Diyarbakir, Turkey

## Address for correspondence:

Dr. Ahmet Yilmaz,  
Department of Family  
Medicine, Dicle  
University Medical  
Faculty, 21280 Yenisehir,  
Diyarbakir, Turkey.  
E-mail: [dearahmetyilmaz@  
hotmail.com](mailto:dearahmetyilmaz@hotmail.com)

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## Introduction

Today, the average physician completes formal medical education with impressive abilities to cope with the more technical aspects of bodily disease. However, when it comes to dealing with the human side of the disease and patient care, it needs to show a little more than the local talent and personal characteristics that it enters into medical school. Important knowledge of human behavior, which has accumulated since the turn of the century, and what may be the practices to achieve more effective patient care and health care, is largely unknown to physicians.

Neglecting this important aspect of physician education, they are often insensitive, helpless, negligent, arrogant, and mechanic in their approach.<sup>[1,2]</sup>

In order to absorb psychosocial concerns in a sensitive and integrative way, a physician must have a solid knowledge base in the social and behavioral sciences. The physician should accept each patient as a different individual with his/her own history, social environment, educational level, financial situation, cultural diversity, place in the society, profession, personal sensitivities, and problems. Traditional medical education physicians are not sufficient for this approach.<sup>[3]</sup> In clinical practice, physicians should adopt a more comprehensive approach to the biopsychosocial model, moving away from the restrictive approach of the biomedical model.

Biopsychosocial approach asserts that the health status of the individual is under the influence of the interactions of biological, psychological, and social processes and evaluates the individual with his/her life, emotions, environment, perspective of diseases, and physical conditions in the face of biomedical approach. The general perspective of the biopsychosocial approach should be the basic occupational attitude for physicians. Physicians should apply the biopsychosocial approach in the best way in terms of their continuous relationship with their patients and the continuity of the services they provide. This model tells physicians that there may be biochemical and morphological changes in their patients due to their emotional status, life goals, attitudes toward diseases, and social environment and beliefs, and also suggests that the clinical approach should be patient-centered.

This study was conducted to determine the extent to which physicians use biopsychosocial approaches, patient-centered approaches, and empathy, which is one of the important concepts reflecting the patient-physician relationship and to show the interactions between demographic parameters and patient-centered approach and empathy levels.

## Materials and Methods

The study was conducted with assistant doctors working in the hospitals of Dicle University. Assistant doctors reached in the hospital during the working hours between December 1, 2017, and March 1, 2018, were invited to participate in the study. Two hundred and three physicians who met the inclusion criteria and agreed to participate in the study were included in the study.

**Study application:** For our study, approval was obtained from Dicle University Medical Faculty Non-interventional Clinical Research Ethics Committee with the number 230 on November 24, 2017. The questionnaire applied to physicians; sociodemographic data form including questions such as gender, age, marital status, working time as physician, number of patients per day, time allocated per patient, general hope levels, and perceived well-being of physicians, Patient-Physician Orientation Scale (PPOS), and Jefferson Scale of Physician Empathy (JSPE) consists of fifty questions. Inclusion criteria: working in the hospitals of the medical faculty of Dicle University, being an assistant doctor, and accepting the completion of the questionnaire. Exclusion criteria: not being an assistant doctor at the moment, refusing to application, and complete the questionnaire.

The assistant doctors working in our hospital were informed about the study. They were told that the study would consist of questionnaires to be applied to them, that they could leave the study at any time, or that they would be excluded from the evaluation if they did not want to use the information in the completed questionnaire forms.

### Patient-Physician Orientation Scale

The Patient-Physician Orientation Scale (PPOS) is an 18-item validity and reliability scale prepared by Krupat *et al.*<sup>[4]</sup> The first subgroup of the scale aims to measure the extent to which physicians and patients can share the common decision-making process and to what extent they can form the power balance. The second subgroup is called "maintenance." This group aims to measure the extent to which the living conditions, emotions, and expectations of patients are taken into consideration by physicians.<sup>[5,6]</sup> Higher scores indicate that the physician is taking a patient-centered approach when approaching the patient, whereas low scores suggest that a physician-centered approach is used. In our study, the internal reliability of the PPOS was tested with Cronbach's alpha and found to be 0.878.

### Jefferson Scale of Physician Empathy

The JSPE was developed in 2001 by Hojat *et al.* to assess empathy in medical education and practice.<sup>[7]</sup>

The high scores obtained from the Jefferson Empathy Scale support that the physician is more empathic to the patient.<sup>[8]</sup> In our study, the internal reliability of the JSPE was tested with Cronbach’s alpha and found to be 0.931.

### Statistical analysis

In our study, the data were analyzed using Statistical Package for the Social Sciences software V.18.0 (SPSS for Windows software; SPSS, Inc, Chicago, IL, USA). Descriptive statistics for demographic characteristics, statistical difference between means, independent samples *t*-test, one-way ANOVA test, and Kruskal–Wallis test were used. The significance limit of all statistical tests used was determined as 0.05.

## Results

Two hundred and three physicians participated in the study. One hundred and forty-three (70%) participants were male and 60 (30%) were female. The mean age of the physicians was  $29.73 \pm 2.87$  (min = 23, max = 41). Of all physicians, 79 (38.9%) were single and 124 (61.1%) were married. The mean scores of the total JSPE, sharing, and care of the physicians participating in the study according to the age groups are shown in Table 1.

The mean time per patient was  $10.30 \pm 9.96$  min, and the psychiatry physicians ( $36.87 \pm 17.10$ ) were significantly higher than the other branches ( $P < 0.01$ ). Subgroups of empathy levels according to the medical discipline, the mean JSPE scores of psychiatrists were  $78.25 \pm 14.78$ ,  $72.03 \pm 13.46$  for other internal branches,  $70.87 \pm 15.24$  for surgical branches, and  $67.71 \pm 14.69$  for family physicians. The average JSPE scores of psychiatrists were higher than other disciplines and were not statistically significant ( $P = 0.31$ ). When we compare the empathy levels by gender, the mean JSPE scores of female physicians ( $76.13 \pm 11.96$ )

were higher than the mean JSPE scores of male physicians ( $69.46 \pm 14.76$ ) ( $P < 0.01$ ).

## Discussion

The average number of patients that the physicians examined at on a daily practice was compared, and the number of patients in the internal and surgical medical disciplines was found to be higher than that of family physicians and psychiatrists. The average time allocated by the physicians per patient was compared, and psychiatric physicians were significantly higher than the other medical disciplines. The general hope levels of physicians were compared, and it was seen that the hopeful group was composed of other internal medical disciplines with the highest denominator. We compare the levels of empathy according to the medical disciplines, and it is seen that psychiatrists are partially higher than the other medical disciplines. In terms of gender empathy levels, female physicians’ empathy levels were significantly higher than male physicians.

The study conducted by Audet had an almost equal number of male and female participants involving physicians.<sup>[9]</sup> In a study conducted in Italy, 229 of 289 participants were male participants.<sup>[10]</sup> In another study with family physicians and psychiatrists, a total of 405 physicians participated and 245 of the participants were female physicians.<sup>[11]</sup> In our study, most of the participants were male physicians.

In a study conducted in Japan in 2012, it was concluded that empathy level increased with age.<sup>[12]</sup> In another study conducted with medical students, it was concluded that; empathy levels increased as the mean age of the participants increased.<sup>[13]</sup> In a study conducted in Canoe, physician care scores of physicians older than 30 years were found to be significantly higher than other groups.<sup>[14]</sup> No consistent results were found between the studies. With professional experience, patient-centered approach and empathy levels can be expected to increase, but it can also be interpreted that the opposite can happen with accumulated work stress, heavy working conditions, and monotony.

The average time allocated by the physicians per patient was  $10.30 \pm 9.96$  min, and the psychiatry physicians ( $36.87 \pm 17.10$ ) were significantly higher than the other medical disciplines. Another study found that the average number of patients per day of family physicians was higher than the average number of patients per day of psychiatric physicians, it was seen that the average time allocated to psychiatrists per patient was longer than that of family physicians.<sup>[15]</sup>

Wright *et al.* questionnaire study evaluated patient–physician interview times and showed that it lasted

**Table 1: Comparison average of sharing, care, and total Jefferson Scale of Physician Empathy scores according to the age of physicians attending the study**

|         | Age   | n   | Mean±SD     | P     |
|---------|-------|-----|-------------|-------|
| Sharing | 23-30 | 138 | 3.94±0.64   | 0.37  |
|         | 30-35 | 58  | 3.88±0.62   |       |
|         | 35-41 | 7   | 3.57±1.09   |       |
|         | Total | 203 | 3.91±0.66   |       |
| Care    | 23-30 | 138 | 3.60±0.60   | 0.04  |
|         | 30-35 | 58  | 3.55±0.50   |       |
|         | 35-41 | 7   | 3.02±0.88   |       |
|         | Total | 203 | 3.56±0.59   |       |
| JSPE    | 23-30 | 138 | 71.93±14.09 | 0.366 |
|         | 30-35 | 58  | 71.12±13.43 |       |
|         | 35-41 | 7   | 64.14±23.70 |       |
|         | Total | 203 | 71.43±14.29 |       |

SD=Standard deviation, JSPE=Jefferson Scale of Physician Empathy

7 min on average. It has been reported that the accuracy of the answers of the patients to the questions is higher in long-term interviews compared to short-term interviews.<sup>[10]</sup> In our study, the reason why psychiatrists allocate more time per patient compared to other medical disciplines can be interpreted as the number of patients is less than other medical disciplines, and therefore, it can be thought that they can reflect the biopsychosocial approach to the patient more in clinical interviews. Taking psychiatric anamnesis from patients alone, the long duration of psychiatric evaluation of the patient from childhood to the present may have been effective in this result. There is no doubt that as the number of patients examined during the day increases, the time allocated to each patient decreases. Thus, as a result of limited time, it will be difficult to handle the patient in biopsychosocial terms.

In our study, when we compare the empathy levels according to the discipline, the empathy levels of the psychiatrists were higher than all other medical disciplines and the family physicians were lower in the surgical and other internal medical disciplines. In a study conducted by Hojat *et al.*, psychiatrists' empathy scores were significantly higher than all other medical disciplines.<sup>[7]</sup> Anesthesia, orthopedics, gynecology, general surgery, and neurosurgery physicians in areas such as low empathy scores were found to be low. As in our study, the high empathy scores of psychiatrists in these studies may be attributed to the fact that they spend more time with patients and can approach the patient more biopsychosocially in line with the training they receive. There is a difference between the departments of medicine such as family medicine and psychiatry, where empathy is in the forefront of medical sciences, compared to the surgical departments where technical intervention and surgical practices are at the forefront. In terms of empathy and biopsychosocial approaches, it can be considered that the empathy scores of the people-oriented departments will be higher. It can be stated that the empathy scores of assistant doctors who prefer internal medicine branches are higher than those who prefer nonmedical medicine departments. In our study, it was found that family physicians had a more patient-centered approach compared to other branches. Preventive general health practices in the family medicine are at the forefront according to the sections where patient clinical follow-up periods involve relatively long and more difficult clinical processes. The social time that family physicians allocate to them is relatively high, so it can be explained by the fact that family physicians have the opportunity to develop themselves in terms of empathy and biopsychosocial approaches.

According to the results of the study of different occupational group employees, although the empathy

scores of physicians were higher than other groups, psychiatrist scores were found to be close to family physicians.<sup>[16]</sup>

In a study conducted with physicians, it was aimed to compare the empathy levels of physicians and volunteer physicians from different medical disciplines who participated in the study, but there was no significant difference between the empathy scores and the medical disciplines.<sup>[17]</sup> In a study conducted in Japan in 2012, it was aimed to compare empathy levels according to the medical disciplines, it was found that the empathy scores of the medical discipline such as general internal medicine, general pediatrics, and psychiatry were higher, but there was no significant difference between them and other medical disciplines.<sup>[12]</sup> In our study, the levels of empathy of surgical medical discipline were lower than psychiatrists but higher than other internal medical disciplines and family physicians, but the scores were close to each other.

The study was conducted to measure the extent to which physicians use patient-centered approaches in their clinical practice; it was found that family physicians had more patient-centered approaches than other medical disciplines.<sup>[18]</sup>

In a study conducted in the UK to measure the empathy levels of medical students in 2011, they concluded that the average empathy scores of female students were significantly higher than the average empathy scores of male students.<sup>[15]</sup> Newton *et al.* in a study aimed to measure the empathy levels of medical students by gender and concluded that women's empathy levels are significantly higher than men.<sup>[19]</sup>

In the majority of studies, it was concluded that women had more empathy. Based on the results of all these studies, it is possible to conclude that women are superior to men in terms of understanding other people's feelings and putting themselves in their place. It is possible to think that empathetic and patient-centered approaches of female doctors are generally higher than male doctors.

The study indicates that female doctors care more about the psychological status and social environment of their patients, whereas male doctors emphasize more on biomedical issues;<sup>[18]</sup> it is possible to think that empathic and patient-centered approaches of female doctors are generally higher than male doctors. However, there are studies reporting adverse results. In their study, Roter *et al.* showed that female doctors were less helpful in their patients than male doctors, behaved less comprehensively, and as a result had a less patient-centered approach.<sup>[20]</sup>

There are studies suggesting that the relationship between the patient and the doctor of the same sex may be of higher quality. It was seen that the mean scores of empathy, sharing, and care of the physicians participating in our study decreased with age.<sup>[17-19]</sup> We can interpret this to the fatigue accumulated over time. As a physician's working time increases, the accumulated monotony of work stress may make it difficult to approach the patient in terms of biopsychosocial aspects. There was no statistical difference in the sharing and JSPE scores. There was a statistically significant difference in care scores.

In a study conducted by DiLalla *et al.* by including medical students and physicians working in the same faculty, it was found that empathy levels were higher in the group under 30 years of age.<sup>[21]</sup> Although there are studies that support our study, there are studies in the opposite direction. In a study conducted in Iran, it was seen that empathy levels increased as the age of family physicians increased.<sup>[22]</sup> Dowrick *et al.* concluded that physicians aged 35 years and over adopted the biopsychosocial approach more than young physicians.<sup>[11]</sup> In a study conducted in Chen, physician's care scores of physicians older than 30 years were found to be significantly higher than other groups.<sup>[23]</sup> In a study conducted to determine the extent to which physicians adopted patient-centered approaches in clinical practice, no relationship was found between age and patient-centeredness.<sup>[19]</sup>

### Limitations

Our study was conducted in a single health center, limited time for physicians to conduct surveys, stands out as our limitations.

### Conclusions

In our study, it was concluded that physicians did not fulfill the requirements of the patient-centered clinical method adequately. Possible reasons for this include lack of knowledge of physician-centered clinical approach, lack of education, severe and stressful working conditions, shortage of time, patient density, lack of empathy, and ever-changing health policies. Biopsychosocial approach is an essential approach model in family medicine and should be applied in all internal and surgical medical disciplines. Raising awareness on this subject, adequately addressing the issue in the medical school education process, and graduating each assistant physician by assimilating the biopsychosocial approach will have an impact on the physicians' perspective and clinical practice. With the application of the methodology adopted in this study to larger populations, awareness in this area will be increased and related topics in the literature will be enriched.

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### Conflicts of interest

There are no conflicts of interest.

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