The relationship between subjective well-being and empathy among Turkish medical students

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Abstract

Background: Empathy as a part of humanistic medicine is an important component of medical education and could be taught throughout the years of medical study. In Turkey the national core medical curriculum is somewhat insufficient in terms of teaching empathy. In this study we wanted to measure empathy and to determine if there is a relationship between subjective well-being and empathy.

Material & Methods: We used the Jefferson Scale of Empathy to measure empathy, Depression Anxiety and Stress Scales and the Oxford Happiness Questionnaire to measure the subjective well-being. Participants were first, third and sixth year (final-year) medical students. The total number of participants was 600 which represented 71.1% of the students of the corresponding medical school.

Results: The mean empathy scores of Turkish students were found to be lower than of their counterparts in the Western countries. Female students had significantly higher scores than male students and there was a decline in empathy with increasing class-years. We found a significant positive relationship between happiness and empathy.

Conclusions: Teaching empathy through the development of a new medical curriculum with a more humanistic approach should be a concern of medical schools in Turkey.

Keywords: Jefferson Scale of Empathy, Medical students, Subjective well-being, Happiness, Turkey

Introduction

Empathy is a skill that allows establishing a communication by evaluating the views, experiences and worries of the patients’ cognitively (Hojat et al.2009a). Furthermore empathy can prevent and diminish the pain and suffer. This
definition emphasizes the importance of empathy in education of health care personnel and health care services (Hojat et al. 2009b).

Empathy is important in physician/patient interactions. Empathetic patient care has many advantages and some of them are: improved physician-patient communication, increased patient satisfaction, greater patient compliance, decreased litigation, increased physician job satisfaction and decreased physician burnout (Hojat et al. 2009a; Pedersen 2009; Hojat et al. 2011; Rakel et al. 2011; Lelorain et al. 2012; Derksen et al. 2013; Senić & Marinković 2013; Jackson et al. 2015). The core components of empathy could be taught and enhanced during the medical education (Hojat et al., 2009a; Hojat et al 2009b).

According to the American Association of Medical Colleges empathy is an essential skill for medical professionalism and this skill must be acquired through medical education (AAMC 1998). The National Core Curriculum Program for Medical Education in Turkey which was accepted in the year 2014 pointed to "professionalism and humanistic approach" as one of the essential skills which must be acquired through medical education (Ulusal CEP 2014).

There are many published papers regarding empathy and related factors among medical students and most of them are from the developed Western countries. These papers reveal that female medical students have higher levels of empathy than male students Hojat et al. 2001; Hojat et al. 2002a; Hojat et al. 2002b; Nunes et al. 2011; Quince et al. 2011; Chen et al. 2012). Students with higher level of clinical skills have higher levels of empathy (Hojat et al. 2002c). Students who have the ability to socialize have higher levels of empathy (Hojat et al., 2005). Empathy is related to emotional intelligence, communication skills and optimism (Hojat et al. 2015a; Hojat et al. 2015b). Both distress and well-being are related to medical student empathy whereas well-being has positive and distress has negative correlations (Thomas et al. 2007; Paro et al. 2014).

Recently growing studies originated from the developing Eastern countries and from different cultures than those of the Western reveal the global importance of empathetic concern in medical study. Cross sectional assessments of empathy among medical undergraduates in Korea, India and Iran mentioned to a progressive decline in empathy levels with years in medical study and higher levels of empathy among female students (Roh et al. 2010; Shashikumar et al. 2014; Khademalhosseini et al. 2014).

Measuring empathy among medical students is a new concept in Turkey and there are few published studies concerning this subject. One of them revealed that female students had higher scores in "perspective taking" and "compassionate care" than male students (Gonullu & Oztuna 2012). Another study pointed to the lower levels of empathy for the last year students with higher levels of empathy among female students except for "standing in patients' shoes" (Sen et al. 2014).

In this study we wanted to measure the empathy levels of medical students by using the Jefferson Scale of Empathy Student Version in one public medical school in Turkey and to compare the empathy scores among first, third and last year medical students by socio-demographic characteristics, academic performance and educational satisfaction. Furthermore we wanted to find out if there are relationships between students' subjective well-being and empathy. Our hypotheses were as follows:

1. Empathy was not related to students' socio-demographic characteristics.
2. Empathy was not related to students' subjective well-being.
Material & Methods

This cross-sectional study was performed in the 2014-2015 academic year at one public medical school in Turkey. We begun to collect the data at October 2014 and ended it at June 2015. Ethical approval for this study was given by the corresponding medical school's ethics committee (Approval date: August, 12, 2014; approval number: 2014-15/2).

Participants

Participants were the first, third and last year medical students. The total number of the enrolled first, third and last year students was 844. The scale that we have used for measuring empathy was not free of charge and was priced according to the number of participants therefore we limited the number of participants with 600 students which was affordable for us. In general 71.1% of first, third and last year medical students were represented in this study. The distribution of the participants according to their class-years (representation ratio of the corresponding class-year) was as follows: first year 200 (60.0%), third year 216 (78.0%) and sixth (last) year 184 (80.0%). Students participated to this study voluntarily and filled out all of the questionnaires anonymously. All participants gave their written consent for the participation.

Procedure

First and third year medical students filled out the questionnaires during their skills laboratory hours whereas last year medical students answered the questionnaires at the beginning of their family medicine internship program. Questionnaires were distributed and collected in closed envelopes and filled out by the participants without a sign of identification. At the end of the data collection process all questionnaires checked and those with missing data were excluded from the analyses. Statistical analyses were done by using IBM-SPSS Statistics V.22.0 licensed to the corresponding university.

Measures

We used four different questionnaires in this study. They were:

1. A questionnaire regarding the socio-demographic characteristics, academic performance and educational satisfaction, prepared by the authors. This questionnaire collected data about the students’ age, gender, class-year, educational attainments, occupations of parents, economic situation, own preference to study medicine, educational satisfaction and GPA (Grade Point Average).

2. Depression Anxiety Stress Scale -21 (DASS-21) for measuring depression anxiety and stress. This scale is the short version of the DASS-42 and is measuring in the depression, anxiety and stress levels during the last week. This scale contains 21 (7 for depression, 7 for anxiety and 7 for stress) questions which are scored as 0= never…….. 3= always. Scores for every sub-dimension were summed up separately and multiplied with two to give the total scores for depression, anxiety and stress. Scores over 9, 7 and 14 for depression, anxiety and stress respectively indicate from mild to extremely severe depression, anxiety and stress. The DASS was developed by Lovibond & Lovibond (1995) and psychometric properties of the Turkish version showed good reliability and validity (Bilgel & Bayram 2010). In this study the Cronbach's alpha values for depression, anxiety and stress were 0.86, 0.83 and 0.82 respectively.

3. Oxford Happiness Questionnaire (OHQ). We used the short version of this scale. The original scale was
developed by Hills & Argyle (2002). Turkish adaptation and psychometric analyses were made by Dogan & Cotok (2011). This scale contains 7 statements regarding the perception of happiness and they are scored 1= strongly disagree……..5= strongly agree. Sum of the scores give the total happiness score. High scores indicate higher levels of happiness. For this scale the range of scores can be 7-35.

4. Jefferson Empathy Scale Student version (JSE-S) was developed by Jefferson Medical College (now Sidney Kimmel Medical College) of Thomas Jefferson University Center for Research in Medical Education and Health Care (Hojat et al. 2009a). This Scale has 20 items scored on the 7 point Likert-type scale. Ten of these items with positive factor structure and correlations are scored on "Strongly Disagree=1 …… Strongly Agree=7" whereas other ten items with negative factor structure and correlations are scored reversely (e.g., Strongly Disagree=7, Strongly Agree=1). Exploratory factor analytic studies of the scale have often resulted in three factors: "perspective-taking", "compassionate care" and "standing (walking) in patient's shoes" (Hojat et al. 2009a; Hojat & LaNoue 2014). The three factors have also been shown in studies with the translated versions of the scale (Roh et al. 2010; Paro et al. 2012; Wen et al. 2013; Khademalhosseini et al 2014; Leombruni et al. 2014; Mostafa et al. 2014). The first factor of the scale is the "perspective taking" with a score range of 10-70 and items 2, 4, 5, 9, 10, 13, 15, 16, 17 and 20. The second factor of the scale is "compassionate care" with a score range of 8-56 and items 1, 7, 8, 11, 12, 14, 18 and 19. The third factor is "standing in patient's shoes" and this factor has a score range of 2-14 and two items (item 3 and 6). The total score range of the scale is 20-140 and higher scores mean higher levels of empathy. The Jefferson Scale of Empathy has been translated into 45 languages and used in more than 70 countries (Hojat & LaNoue 2014). Almost all of the studies reported Cronbach's alpha coefficients of the scale ranging from 0.70 to 0.80 which is indicating a good reliability (Hojat & LaNoue 2014). JSE-S was translated into Turkish and validation studies confirmed the three factor structure (Gonullu & Oztuna 2012).

The permission to administer the JSE-S Turkish version to 600 medical students was given by the Center for Research in Medical Education and Health Care Thomas Jefferson University Jefferson Medical College (Order ID: 10342, Date: July 04, 2014).

Statistical Analyses

We used descriptive statistics, non-parametric tests, and binary regression analysis. The distribution of the scores did not fit to normal distribution therefore we used non-parametric tests for statistical analyses.

Results

In this study Cronbach's alpha coefficient of the JSE-S was 0.85 in general whereas 0.84 for "perspective taking", 0.73 for "compassionate care" and 0.62 for "standing in patient's shoes" dimensions.

Socio-demographic characteristics of the participants

Among 600 students, 323 (53.8%) were female. Three hundred twenty seven students (54.5%) were between 18-21 years of age. The distribution of participants according to their class-years was as follows: first class-year 200 (33.3%), third class-year 216 (36.0%) and last class-year 184 (30.7%). Educational attainment of students’ fathers was better than of mothers and 479 (79.8%) students’ fathers were high school or more educated whereas for mothers this number was 354 (59.0%). Three hundred thirty eight students (56.3%) described their economic status as moderate and 248 students (41.4%) as good. Participants answered the questions regarding their current medical education as follows: studying medicine was 87.8% of students’ (n= 527) own preference, 42.7% (n=256) were
satisfied with their education. The mean GPA of the participants was 2.99±0.48 (Mean±SD).

**Subjective well-being of participants**

We measured the depression, anxiety, stress and happiness levels of the students to evaluate subjective well-being. In general participants had a mild depression, moderate anxiety and mild stress. Fifty four percent of the students (n=324) were depressive, 56.2% (n=337) were anxious, and 38.8% (n=233) were in stress from mild to extremely severe degree.

The mean happiness score was 23.25±4.39 (95% CI 22.89-23.60; median: 23.50). We found no statistically significant difference among happiness scores of female and male participants and among students in different classes. Participants in good economic status had significantly higher happiness scores than of those in moderate and poor economic status. Participants who were satisfied with their education and who preferred studying medicine by their own will had significantly higher happiness scores than others. We did not find significant differences regarding happiness scores among students with different GPA’s. Participants without depression, anxiety and stress had the highest happiness scores.

**Empathy among participants**

In general the total empathy score of the students was found as 104.56±16.17 whereas for "perspective taking", "compassionate care", and "standing in patient's shoes" dimensions the mean scores were 52.93±10.21, 43.34±7.66, and 8.27±2.65 respectively.

**Relationship between socio-demographic characteristics and empathy**

We performed binary regression analysis to evaluate the relationship between socio-demographic characteristics, and empathy scores. For this purpose students with a total empathy score lower than the mean total empathy score of 104 were grouped as empathy (-) and students with a total empathy score of 104 and higher were grouped as empathy (+). The fit of the model was tested with Hosmer Lemeshow test (c2=10.49; df=8; p=0.232) and showed a good fit. This model explained 63.6% of the variance. Results of the binary regression analysis are shown in Table 1.

Table 1. Relationships between some characteristics of students and empathy

|                      | B    | Exp (B) | % 95 CI Exp (B) | p     |
|----------------------|------|---------|-----------------|-------|
| Gender               |      |         |                 |       |
| Female               | 0.449| 1.550   | 1.058-2.272     | 0.025 |
| Class-year           |      |         |                 |       |
| First                | 0.728| 2.072   | 1.258-3.413     | 0.004 |
| Third                | 0.483| 1.620   | 1.028-2.553     | 0.037 |
| Age groups           |      |         |                 | 0.307 |
| Mother's education   |      |         |                 | 0.626 |
| Father's education   |      |         |                 | 0.677 |
| Economic status      |      |         |                 | 0.663 |
Reference groups: Male; Sixth class-year

Students with a total empathy score of \( \geq 104 \) were 1.5 times higher among female students than among male students. Students with a total empathy score of \( \geq 104 \) were 2.0 times higher among first class-year and 1.6 times higher among third class-year students than among sixth class-year students. We found no significant relationships between empathy scores of participants and age, mother’s and father’s educational status, economic status, own preference of studying medicine, satisfaction with medical education and GPA. The empathy scores of participants according to gender and class-year are shown in Table 2.

Table 2. Empathy scores by gender and class-year

|                      | Gender       | Class-year       |
|----------------------|--------------|------------------|
|                      | Female | Male | First | Third | Sixth |
| **Perspective Taking** |       |      |       |       |       |
| Mean±SD              | 54.02±9.96 | 51.65±10.38 | 54.52±10.31 | 53.49±9.02 | 50.54±11.03 |
| Median               | 55.00    | 53.00 | 56.00 | 54.00 | 51.00 |
| Min-Max values       | 12.00-70.00 | 16.00-70.00 | 23.00-70.00 | 16.00-70.00 | 12.00-70.00 |
| Statistical test & p value | Mann- Whitney U | Kruskal- Wallis |
|                      | **0.008** |          |       |       |       |
| **Compassionate Care** |       |      |       |       |       |
| Mean±SD              | 45.03±6.59 | 41.39±8.34 | 43.80±7.65 | 43.57±7.89 | 42.59±7.38 |
| Median               | 46.00    | 43.00 | 45.00 | 46.00 | 43.50 |
| Min-Max values       | 12.00-56.00 | 10.00-56.00 | 10.00-56.00 | 12.00-56.00 | 12.00-56.00 |
| Statistical test & p value | Mann- Whitney U | Kruskal- Wallis |
|                      | **0.000** |          |       |       |       |
| **Standing in Patient’s Shoes** |       |      |       |       |       |
| Mean±SD              | 8.34±2.61 | 8.18±2.70 | 8.22±2.60 | 8.11±2.50 | 8.50±2.87 |
| Median               | 8.00    | 8.00 | 8.00 | 8.00 | 8.00 |
| Min-Max values       | 2.00-14.00 | 2.00-14.00 | 2.00-14.00 | 2.00-14.00 | 2.00-14.00 |
| Statistical test & p value | Mann- Whitney U | Kruskal- Wallis |
|                      | 0.639    |          |       |       |       |
| **Total Empathy Score** |       |      |       |       |       |
| Mean±SD              | 107.39±15.33 | 101.23±16.52 | 106.54±16.39 | 105.17±15.46 | 101.63±16.17 |
The mean scores of the "perspective taking" were significantly different by gender and class-year whereas the mean scores of the "compassionate care" were significantly different only by gender and there were no significant differences by gender or class-year for the "standing in patient’s shoes" mean scores. Female students had significantly higher scores than male students on JSE-S items 1, 2, 4, 7, 8, 10, 11, 12, 13, 14, 15, 16, and 19. First and third class-year students had significantly higher scores than sixth class-year students on JSE-S items 2, 4, 7, 8, 9, 13, 16, 17 and 20.

Subjective well-being and empathy

We did not find statistically significant relationships among the depression, anxiety, stress and empathy levels of the participants. Number of students who got a happiness score under or equal to the mean happiness score (23.25) was 349 (58.2%) and those with over the mean happiness score was 251 (41.8%). The total empathy scores were significantly different among students with happiness scores below or equal and over the mean value. Results are shown in Table 3.

Table 3. Happiness and empathy scores

| Happiness Score | Total Empathy Score | Perspective Taking | Compassionate Care |
|-----------------|---------------------|--------------------|-------------------|
| <=23.25 (equal to mean value and under) | 102.74±16.55 | 51.83±10.32 | 12.00-70.00 |
| > 23.25 (over the mean value) | 107.06±15.31 | 54.45±9.88 | 55.00 |
| Mann-Whitney U Test p value | 0.003 | | 0.002 |
| Median | 105.00 | 53.00 | |
| Min-Max Values | 32.00-137.00 | 12.00-70.00 | |
| Statistical test & p value | Mann-Whitney U 0.000 | Kruskal- Wallis 0.001 | |
We found a positive significant relationship between happiness and empathy. Scores for "perspective taking" and "compassionate care" were significantly higher among students with higher happiness score. JSE-S items mean scores according to happiness score are shown in Table 4.

Table 4. JSE-S items mean scores by happiness score

| JSE-S Items (Item Number)                                                                 | Happiness Score | p value |
|-----------------------------------------------------------------------------------------|-----------------|---------|
| Physicians' understanding of their patients' and their families' feelings does not influence medical or surgical treatment (1) | <= 23.25 5.45±1.91 | > 23.25 5.64±1.68 | 0.327 |
| Patients feel better when their physicians understand their feelings (2)                 | 5.76±1.68       | 6.10±1.40 | 0.020 |
| It is difficult for a physician to view things from patients' perspectives (3)          | 4.46±1.49       | 4.52±1.54 | 0.781 |
| Understanding body language is as important as verbal communication in physician–patient relationships (4) | 5.74±1.51       | 6.12±1.16 | 0.003 |
| A physician's sense of humor contributes to a better clinical outcome (5)               | 4.51±1.71       | 4.82±1.69 | 0.030 |
| Because people are different, it is difficult to see things from patients’ perspectives (6) | 3.75±1.57       | 3.80±1.63 | 0.820 |
| Attention to patients’ emotions is not important in history taking (7)                 | 5.78±1.63       | 5.96±1.55 | 0.123 |
| Attentiveness to patients’ personal experiences does not influence treatment outcomes (8) | 5.56±1.55       | 5.74±1.56 | 0.076 |
| Physicians should try to stand in their patients’ shoes when providing care to them (9) | 4.75±1.77       | 5.05±1.70 | 0.044 |
Patients value a physician’s understanding of their feelings which is therapeutic in its own right (10) | 5.47±1.43 | 5.68±1.38 | 0.049
Patients’ illnesses can be cured only by medical or surgical treatment; therefore, physicians’ emotional ties with their patients do not have a significant influence in treatment (11) | 5.75±1.52 | 6.01±1.39 | 0.011
Asking patients about what is happening in their personal lives is not helpful in understanding their physical complaints (12) | 5.48±1.65 | 5.72±1.41 | 0.155
Physicians should try to understand what is going on in their patients’ minds by paying attention to their nonverbal cues and body language (13) | 4.97±1.66 | 5.17±1.59 | 0.149
I believe that emotion has no place in the treatment of medical illness (14) | 5.47±1.68 | 5.80±1.55 | 0.006
Empathy is a therapeutic skill without which the physician’s success is limited (15) | 5.02±1.70 | 5.26±1.67 | 0.056
Physicians’ understanding of the emotional status of their patients, as well as that of their families, is one important component of the physician–patient relationship (16) | 5.35±1.51 | 5.56±1.50 | 0.043
Physicians should try to think like their patients in order to render better care (17) | 4.78±1.57 | 5.00±1.56 | 0.070
Physicians should not allow themselves to be influenced by strong personal bonds between their patients and patients’ family members (18) | 3.06±1.74 | 3.14±1.83 | 0.707
I do not enjoy reading nonmedical literature or the arts (19) | 6.09±1.54 | 6.24±1.36 | 0.228
I believe that empathy is an important therapeutic factor in medical treatment (20) | 5.44±1.53 | 5.63±1.53 | 0.062

Students with higher happiness scores had significantly higher scores on JSE-S items 2, 4, 5, 9,10, 11,14 and 16.

**Discussion**

In this study we wanted to evaluate empathy and the possible relationship between empathy and subjective well-being among a group of Turkish medical students. We rejected our first hypothesis because some socio-demographic characteristics of participants like as gender and class-year was found to be related to empathy. Female students had higher empathy levels than of male students. Most of the previous studies revealed similar results (Hojat et al. 2002a; Hojat et al. 2002b; Hojat et al. 2002c; Hojat et al. 2005; Kliszcz et al. 2006; Kataoka et al. 2009; Quince at al. 2011; Tavakol et al. 2011; Chen et al. 2012; Hasan et al. 2013; Wen et al. 2013; Leonbruni et al. 2014; Paro et al. 2014; Youssef et al. 2014; Hojat & Gonnella 2015). On the other hand some studies did not find any difference.
among empathy levels of male and female students (Rahimi-Madiseh et al. 2010; Roh et al. 2010; Tavakol et al. 2011; Williams et al. 2015). Two previous studies in Turkey found that female students had higher empathy levels than male students (Gonullu & Oztuna 2012; Sen et al. 2014).

We found a decline in empathy with the increasing class-years. Similar results were obtained from many previous studies (Hojat et al. 2004; Kliszcz et al. 2006; Kataoka et al. 2009; Hojat et al. 2009b; Neumann et al. 2011; Quince et al. 2011; Tavakol et al. 2011; Chen et al. 2012; Hasan et al. 2013; Leombruni et al. 2014; Yousef et al. 2014; Hojat & Gonnella 2015). However some studies did not find such kind of differences (Colliver et al. 2010; Rahimi-Madiseh et al. 2010; Dehning et al. 2012). Studies from Turkey revealed a decline in empathy throughout the medical study years (Gonullu & Oztuna 2012; Sen et al. 2014). One of these studies found no difference in terms of the "perspective taking" but a decline in "compassionate care" dimension throughout the increasing class-years (Gonullu & Oztuna 2012). In contrast to this result we found a significant decline in "perspective taking" dimension of empathy with the increasing class-years. Many factors could be responsible for this decline: Lost of idealism, overwork and decrease in the role models which could support empathy are the most important factors. Role models are especially necessary for the medical students after the third year. After this period they are changing their educational environment and entering in a new one. This is a real world with hospitals, patients, families of the patients, diagnosis and treatment. This world is not well known and students need good role models in order to get familiar with this new environment. The improper approach of the role models to the patients and their families, the hierarchical power, hidden curricula, suppression of the normal emotional responses and masking them with fake ones are the most important issues that medical students have to face with after the first three years. Furthermore in the clinical years the students have to give more importance to the medical side of their education than to the humanistic component and this will cause in the neglecting of humanism, diminishing in applications which will be able to make an increase for the empathetic approach. Unfortunately during the clinical years there is not sufficient time in the intensive curriculum for the humanistic applications.

In this study the mean total empathy score was 104.56±16.17 which was higher than the scores of previous studies among Turkish medical students (Gonullu & Oztuna 2012; Sen et al. 2014). On the other side some studies from the Western countries found higher scores than ours. A study among Polish medical students found the total empathy score as 112.48±10.88 (Kliszcz et al. 2006). Other studies from Italy (Leombruni et al. 2014) and Austria (Preusche & Wagner-Menghin 2013) found the empathy scores as 108.71±10.60 and 110.52±12.49 respectively. A recent study among US medical students found the total empathy score as 114.3±10.4 (Hojat & Gonnella 2015). Some studies in Eastern countries found also higher scores than of ours. For example a study among Chinese medical students revealed a total score of 109.6±12.09 (Wen et al. 2013) whereas another study from Iran found a score of 105.1±12.9 (Rahimi-Madiseh et al. 2010). Studies in Korea (Roh et al. 2010; Park et al. 2015), Japan (Kataoka et al. 2009), and Kuwait (Hasan et al. 2013) found similar total empathy scores like ours.

In this study we could not find a significant relationship among students' empathy levels and academic performance as like as some previous studies (Hojat et al. 2002c; Hasan et al. 2013). However another study in Turkey revealed such a relationship (Sen et al. 2014). We did not find a relationship between economic status and empathy but there are some studies which found a positive relationship between economic status and empathy (Hasan et al. 2013; Sen et al. 2014).

Studies concerning students' psychological well-being and empathy are few. A study in USA found a relationship between burnout and empathy and revealed that burnout is more important than depression in the decline of the empathy whereas depression had an impact on emotional empathy among female students but not among male students (Thomas et al. 2007). However we did not find a relationship between students' depression, anxiety, stress levels and empathy. On the other side we found a significant positive relationship between happiness and empathy.
and therefore we rejected our second hypothesis. A study among medical residents found that happiness enhanced the perspective taking component of the empathy (Shanafelt et al. 2005). There are no previous studies from Turkey concerning empathy and subjective well-being of medical students but some researches among university students found an increase in empathy with enhanced subjective well-being and happiness (Totan et al. 2013; Totan & Sahin 2015).

Conclusions

The JSE score of Turkish medical students was lower than that of students in Western countries. Females and first class-year students had higher scores as compared with their counterparts. The significant difference in empathy scores of male and female students was due to the "perspective taking" and "compassionate care" dimensions of empathy. The significant difference in empathy scores of first, third and last class-year was due to the "perspective-taking". Higher levels of happiness enhanced empathy through "perspective taking" and "compassionate care".

Medical education in Turkey should give more emphasis on humanistic approach. We suggest that the curriculum within Turkish medical schools include more teaching on humanistic medicine.

The present study has some limitations that need to be underlined.

1. The cross-sectional methodology gives an idea on the empathy level of the Turkish medical students but does not allow collecting data on empathy trends. A prospective study is needed to follow students annually from the beginning of the first year until graduation, to find out an accurate image of change in empathy levels.

2. Although the demographics are representative of the Turkish academic context, all participants were students of a single public medical school and this composition of the sample does not account for the possible differences among students from different parts of the country. Therefore we cannot generalize results of this study. Larger student populations covering different medical schools of Turkey are needed to validate the results of this study.

3. All scales used in this study depend on self reporting. This may have caused to recall bias and inaccurate responses.

This is the third study performed in Turkey about medical students’ empathy by using JSE-S instrument. Therefore our results are comparable to the results of previous studies used the same instrument. We used previously validated and internationally accepted instruments for evaluation. We could not find many studies in the literature regarding the possible relationship between subjective well-being and empathy and we hope this study will make a contribution in this area.

Take Home Messages

- Empathy scores of Turkish medical students were found to be lower than of their counterparts in the Western countries.
- Female students had significantly higher scores than male students and this difference was particularly observed in items measuring the affective component of empathy.
- There was a decline in empathy with increasing class-years.
- There was a significant positive relationship between happiness and empathy.
Teaching of empathy should be an important component of core medical education.

Notes On Contributors

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Appendices

Declaration of Interest

The author has declared that there are no conflicts of interest.