

A measurement of empathy among Moroccan medical students

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Abstract

Background: Empathy is a valuable component of the physician-patient relationship, which has been associated with optimal patient outcome. In our study, we have tested the Hypothesis that female medical students show higher levels of empathy than do men and evaluated other factors influencing empathy in our students.

Methods: Our survey was conducted in the Faculty of Medicine at Fez, Morocco among medical students. The questionnaire included: A socio-demographic part (age, gender, nature of housing, funding means, etc.). A second part for describing internships circumstances (transportation time, the distance between the housing and the hospitals etc.). And two questions about the desire of doing medical studies and if they recommended these studies to their friends. We used The Jefferson Scale of Physician Empathy (JSPE) to evaluate the empathy in our students.

Results: 632 students had completed their questionnaires correctly. The average age was 22.8 ± 1.69 years. We had a predominance of female gender (62.4 %). The average of the total score of Jefferson Scale of Empathy among our students was 97.65 ± 14.10 with a minimum of 53 and a maximum of 134. The most striking and significant difference was between the male and female students; the mean score in males was 94.61 ± 14.25 and in females 99.47 ± 13.71 ($p=0.000$). The empathy levels were not significantly different between the years of study ($p=0.346$). The students who had a scholarship were more empathetic than others supported by family money ($p=0.05$).

Conclusions: The most pertinent result found is that Moroccan medical students had the lowest empathy level amongst published reports. Female students had higher scores than student males. We suggest the introduction of empathy courses in the curriculum.

Abbreviations: JSPE: The Jefferson Scale of Physician Empathy; SPSS: Statistical Package for the Social Sciences; ANOVA: Analysis of Variance.

Background

The definition of Empathy is “as a cognitive attribute that engages understanding a patient’s suffering and concerns combined with an ability to communicate this understanding and an intention to help” [1]. Empathy is a valuable component of the physician-patient relationship, which has been associated with optimal patient outcomes [2]. The importance of empathy in patient care has pushed both the Association of American Medical Colleges and the American Board of Internal Medicine to provide recommendations that empathy is cultivated and assessed as an essential medical educational outcome [3,4]. Some studies that were conducted among Medical students have shown that despite its importance, empathy declines as students’ progress through medical school [5-8]. Other studies didn’t find any difference in empathy as a function of educational level in medicine [9]. Many studies assessing gender differences of empathy indicate that females have higher scores of empathies than males [2,9-15]. In our study, we have tested the Hypothesis that female medical students show higher levels of empathy than do men and evaluated other factors influencing empathy in our students. And secondary goal is to evaluate whether the medical students in different years of medical school show a decline in empathy.

Methods

Participants

Our survey was conducted in the Faculty of Medicine in Fez, Morocco, among medical students who were doing clerkship and

who had contact with patients. The survey was conducted using a self-administered standardized questionnaire. Two resident doctors who distributed the questionnaire had no supervisory duties over the respondents. The timetable for each clerkship team was obtained from the hospital department head to ensure all students were approached and that they had sufficient time to complete the questionnaire. The scale took students approximately 10 minutes to complete. All participants were informed that participation was voluntary, and anonymity was guaranteed. A total of 632 medical students agreed to participate. And they were not compensated for their participation. The questionnaire included:

- A socio-demographic part (age, gender, nature of housing; funding means).
- A second part for describing internships circumstances (transportation time, the distance between the housing and the hospital).
- And two questions about the desire of doing medical studies and if they recommended these studies to their friends.

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Instrument

The Jefferson Scale of Physician Empathy (JSPE) was elaborated by an expanded review of the literature, followed by many studies by practicing physicians, medical students, and medical residents [3,10]. It contains 20 items, each answered with a seven-point Likert-type scale. To reduce the confounding effect of a response pattern known as “acquiescent response style”, half the items are positively worded and directly scored (1 strongly disagree, 7 strongly agree), and the other half is negatively worded and reversed scored (1 strongly agree, 7 strongly disagree). Scores range from 20 to 140, with higher scores indicating higher levels of empathy. The JSPE appears to be a universal concept: it has been used by researchers in different countries and has been translated into more than 25 languages, including Belgian, Brazilian, Chinese, Chilean, Dutch, French, German, Greek, Hebrew, Hungarian, Italian, Korean, Lithuanian, Norwegian, Persian, Peruvian, Filipino, Polish, Portuguese, Romanian, Spanish, Taiwanese, and Turkish [14]. The JSPE has a high reliability as verified by the alpha coefficient of 0.89 for medical students [16]. We used in our survey the French validated version of the Jefferson Scale of Physician Empathy (JSPE), knowing that the Moroccan medical students have well mastered French, in which all medical courses are presented [18]. Data were entered and analyzed using SPSS version 20.0. Total JSPE score differences per level of study, gender, various socio-demographic factors were assessed using analysis of variance (ANOVA). A value of $p \leq 0.05$ was considered statistically significant.

Results

In our survey, 632 students had completed their questionnaires correctly. The average age was 22.8 ± 1.69 years. We had a predominance of female gender (62.4 %). Approximately, half of our students (44.6%) were still living with their parents. And 78.6 percent is relied entirely on their families to pay their study costs. About 23.7 percent of our students did not wish to take the medical studies at the beginning. Only 14.1 percent were more than 30 minutes to get to their hospital training. And, finally, 21.4 percent lived in a collective rent. All descriptive results are summarized in Table 1.

The average of the total score of Jefferson Scale of Empathy among our students was 97.65 ± 14.10 with a minimum of 53 and a maximum of 134. The most striking and significant difference was between the male and female students; the average score in males was 94.61 ± 14.25 and in females 99.47 ± 13.71 ($p=0.000$). The empathy levels were not significantly different between the years of study ($p=0.346$). The students who had a scholarship were more empathetic than those who were financially supported by a family ($p=0.05$). There was also no difference in JSPE scores across levels of transportation time ($p=0.817$), housing type ($p=0.884$), or desire to study medicine ($p=0.405$). The comparison between the total score of JSPE and the different studied factors is assembled in Table 2.

Discussion

To our knowledge; our study is the first paper published in Africa on empathy among medical students. The mean empathy score on Jefferson scale among Moroccan students is the lowest of all other published studies reviewed here [1,5,7,9,13,16-22]. The nearest of our score is the one obtained by Seyed Vahid Shariat in Iranian medical universities from Tehran [20]. This difference might be explained by the quality and the environment of studies and internships, possibly related to socioeconomic level. The low scores might also be explained by a variation in the selection and education of medical students in different

countries, the availability of appropriate role models, and expression of empathy in different cultures [14]. That female Moroccan medical students scored higher than their male counterparts is consistent with the findings reported in almost of other studies [4,7,13,16,17,20,21,23-27]; only a few studies did not find a significant relationship between gender and the total score of Jefferson scale [9,11].

The analysis of variation of the mean of Jefferson score through the level of years of study didn't find a significant difference across the years. The total score among students of the 3rd year of study (95.99 ± 12.797) was lower than the 4th year average score (97.82 ± 14.436). Also, the score of the 4th year was lower in comparison to the score of the 5th year (98.63 ± 14.326). Among the 6th year students, we found a little decrease in score (98.20 ± 15.032). Our finding is concordant with the result obtained by Hitomi and all among Japanese medical students [13]. Equally, our results show no enhancement of empathy during the 6 years of medical school among Moroccan students and these findings are not in agreement with those reported by other studies of medical and dental students [6,7,15]. Several factors can explain the inconsistency; first, it should be noted that our study of Moroccan medical students is based on a cross-sectional design and could be attributed to the baseline differences among students in different years of medical school. A more desirable approach to examine changes in empathy during medical school is to employ a longitudinal study design to follow up a cohort during their medical education.

To improve empathy with our Moroccan students, we have to choose between the different learning techniques which have been tried that allowed students to grasp the position and point of view of the patient, allowing them to realize their sociocultural context [28-31]. To increase empathy, Shapiro suggested that an epistemological paradigm

Table 1. descriptive results

| | N | Percent |
|---|-----|---------|
| Gender | | |
| Male | 237 | 37.50% |
| Female | 395 | 62.50% |
| Study level | | |
| 3th year | 163 | 25.80% |
| 4th year | 183 | 26% |
| 5th year | 183 | 26% |
| 6th year | 103 | 16.20% |
| Are you away from the parental home? | | |
| No | 282 | 44.60% |
| Between 10 and 100 km | 81 | 12.80% |
| Between 100 and 400 km | 132 | 20.90% |
| 400km and more | 137 | 21.70% |
| How you pay your studies? | | |
| Family only | 497 | 78.60% |
| Scholarship | 135 | 21.40% |
| Job | 0 | 0% |
| Transport time | | |
| Lower than 10 min | 177 | 28% |
| Between 10 and 30 min | 366 | 57.90% |
| More than 30 min | 89 | 14.10% |
| Type of housing | | |
| Campus | 50 | 7.90% |
| Family house | 362 | 57.20% |
| Individual rent | 85 | 13.40% |
| Collective rent | 135 | 21.30% |
| Desire for medical studies? | | |
| Yes | 482 | 47.50% |
| No | 150 | 52.50% |

Table 2. Searching for an association between empathy, and different factors

| | JSPE total score | p |
|---|------------------|-----------------|
| Gender | | |
| Male | 94.61±14.255 | p= 0.000 |
| Female | 99.47±13.712 | |
| Study level | | |
| 3th year | 95.99±12.797 | p=0.346 |
| 4th year | 97.82±14.436 | |
| 5th year | 98.63±14.326 | |
| 6th year | 98.20±15.032 | |
| Are you away from the parental home? | | |
| No | 97.93±12.797 | p=0.664 |
| Between 10 and 100 km | 97.82±14.436 | |
| Between 100 and 400 km | 98.63±14.326 | |
| 400 km and more | 98.20±15.032 | |
| How you pay your studies? | | |
| Family only | 97.07±14.315 | p=0.05 |
| Scholarship | 99.76±13.136 | |
| Job | -- | |
| Transport time | | |
| Lower than 10 min | 97.77±14.653 | p=0.817 |
| Between 10 and 30 min | 97.39±13.558 | |
| More than 30 min | 98.43±15.288 | |
| Type of housing | | |
| Campus | 99.10±13.339 | p=0.884 |
| Family house | 97.56±14.361 | |
| Individual rent | 97.13±13.582 | |
| Collective rent | 97.65±14.124 | |
| The desire of medical studies? | | |
| Yes | 97.91±14.450 | p=0.405 |
| No | 96.81±12.943 | |

helps trainees to develop a tolerance for imperfection in self and others and enables them to understand the emotions and the suffering of their patients and leading them to the development of true empathy [32]. It seems that empathy can be improved by learning, and further studies are needed to highlight which technique is most appropriate and effective.

Conclusion

Our study is the first that studied empathy among medical students in Africa. The most pertinent result found is that Moroccan medical students had the lowest empathy level amongst published reports. A more detailed analysis of this situation is necessary to understand the source of this finding. Despite this relatively low empathy levels, we also show that female medical students have higher empathy than males. This appears to be a universal finding. We suggest a possible inclusion of empathy in the curriculum.

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Availability of data and materials

Data is currently not available online. But can be made available to any interested person(s) contacting the corresponding author via email.

Authors' contributions

MJ, IR, AR substantially contributed to the general idea and design of the study. MJ and CA took part in designing the protocol. MJ, and AL drafted the manuscript. All authors have read and consented to the manuscript.

Competing interests

Authors declare that they have no competing interests.

Consent for publication

Not applicable.

Ethics approval and consent to participate

Ethics approval for the study was obtained from Ethics Review Committee, Faculty of Medicine of FEZ, Morocco. Informed written consent was obtained from all study participants.

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