

EMPATHY AMONG FIRST- AND SECOND-YEAR MEDICAL STUDENTS

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Abstract

Evaluating the empathy level of tomorrow's physicians is paramount in highlighting this subject in medical education. The well-known tool for measuring empathy is Toronto Empathy Questionnaire (TEQ).

The aim of this study was to evaluate the level of empathy of medical students in the first and second years of medical training at the Faculty of Medicine in Skopje using the TEQ.

This cross-sectional descriptive study was conducted during October 2022, as an online survey among first- and second-year medical students at the Faculty of Medicine in Skopje. An anonymous online self-report questionnaire distributed via Google Forms was used. One section of the questionnaire addressed the socio-demographic data, year of study and gender. The second section included the Toronto Empathy Questionnaire (TEQ).

There was a moderately strong consistency among the answers of the students to the 16 questions of the TEQ (Cronbach's Alpha = 0.55). The total score varied in the interval 35.42 ± 5.80 ; ± 95.00 CI:34.79-36.05). The total score for empathy among female students was insignificantly higher than among male students; $Z = -0.35$ and $p > 0.05$ ($p = 0.072$), and the total score for empathy among second-year students was significantly higher than among first-year students; $Z = -5.17$ and $p < 0.05$ ($p = 0.000$).

Understanding and assessing the level of empathy of medical students during medical education is an important issue addressed during medical training.

Keywords: empathy, Toronto Empathy Questionnaire, medical students

Introduction

Empathy is an important component of professionalism in medicine, having a strong relationship with improved patient outcomes. A good patient-physician relationship plays a key role in providing quality and efficient health care. Empathy as an important feature in patient-physician communication, in both primary and clinical care, is one of the fundamental competencies that any physician should possess^[1,2].

Empathy is generally understood as the capability to recognize, understand and share the feelings of others. Developing empathy is crucial to create interpersonal relations and to behave compassionately. In the context of medical practice, empathy (clinical empathy) is defined as the ability of a physician to understand a patient's point of view and thoughts and to transmit this back to the patient^[3-5]. Sympathy has been defined as a pity-based response to a patient's distressing situation. Empathy and sympathy have different neurophysiological backgrounds^[6]. Evidence from neuroscience conceptualizes empathy as predominantly an

intellectual response involving the neocortex of the brain, and sympathy as predominantly an emotional response involving the limbic system of the brain^[7].

Evaluating the empathy level of tomorrow's physicians is important in highlighting this subject in medical education. Therefore, in recent years, an increasing number of studies have been conducted about the evaluation of the empathy level in medical students and the factors affecting empathy levels^[8]. The research has shown medical student burnout, professionalism, and personality attributes that affect interpersonal relationships linked to empathy^[6,7].

Several instruments for measuring empathy in medical education are used. The well-known tool for measuring empathy is Toronto Empathy Questionnaire (TEQ), which was developed and validated by Spreng *et al.* to professionally quantify and consistently assess empathy. TEQ is a brief, reliable and valid tool to measure empathy^[9]. It is a 16-item 5-point Likert-type self-report questionnaire that assesses the behavioral, emotional, cognitive, and physiological aspects of empathy in individuals on a broad spectrum.

The aim of this study was to evaluate the level of empathy of medical students in the first and second years of medical training at the Faculty of Medicine in Skopje using the TEQ.

Materials and methods

This cross-sectional descriptive study was conducted during October 2022, in the 2022/23 academic year, as an online survey. The study participants were first- and second-year medical students at the Faculty of Medicine, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia. All potential participants were invited to fill out an anonymous online self-report questionnaire, which was distributed via Google Forms. One section of questionnaire addressed the socio-demographic data, year of study and gender. The second section included the Toronto Empathy Questionnaire (TEQ).

Toronto Empathy Questionnaire is constructed from 16 questions, which are scored on a five-point Likert Scale ranging from 0 to 4, where 0 = never, 1 = rarely, 2 = sometimes, 3 = often and 4 = always. Total empathy score may range from 0 to 64. A higher empathy score indicates a higher level of empathy.

The analysis of the data was performed in the statistical program Statistica 7.1 for Windows. For the series with numerical variables (total (composite) values for empathy among medical students), a descriptive statistics was made (Mean; Std. Deviation; $\pm 95,00\%$ CI; Median; Minimum; Maximum); the distribution of data was tested with: Kolmogorov-Smirnov test, Lilliefors test, Shapiro-Wilks test (p); the difference between the total (composite) values for empathy among medical students in regard to the gender and the year of study was analyzed with the Mann-Whitney U Test (p); and the consistency between the answers of the students to the 16 questions of the TEQ was analyzed by using the Reliability Statistics / Cronbach's Alpha. The statistical significance was determined at $p < 0.05$.

Results

The study included 327 students of the Faculty of Medicine in Skopje. Of them, 62 (18.96%) were male and 265 (81.04%) were female. Of the total number of students included in the study, 185 (56.74%) were in the first year and 142 (43.26%) were in the second year of studies. Table 1 shows descriptive statistics of the answers to the 16 questions from the Empathy Questionnaire (TEQ). For Cronbach's Alpha = 0.55 among the answers of the students to the 16 questions of the TEQ, there was a moderately strong consistency.

Table 1. Descriptive statistics of the answers from the TEQ

Questions	Mean	Std. Dev.	N
When someone else is feeling excited, I tend to get excited too.	2.39	.87	327
Other people's misfortunes do not disturb me a great deal.	2.50	.92	327
It upsets me to see someone being treated disrespectfully.	3.36	.86	327
I remain unaffected when someone close to me is happy.	2.21	1.54	327
I enjoy making other people feel better.	3.69	.62	327
I have tender, concerned feelings for people less fortunate than me.	2.32	1.02	327
When a friend starts to talk about his/her problems, I try to steer the conversation towards something else.	.46	.78	327
I can tell when others are sad even when they do not say anything.	3.12	.82	327
I find that I am "in tune" with other people's moods.	3.17	.75	327
I do not feel sympathy for people who cause their own serious illnesses.	1.83	1.35	327
I become irritated when someone cries.	1.09	1.07	327
I am not really interested in how other people feel.	1.46	1.32	327
I get a strong urge to help when I see someone who is upset.	3.30	.82	327
When I see someone being treated unfairly, I do not feel very much pity for them.	.75	1.10	327
I find it silly for people to cry out of happiness.	.57	.96	327
When I see someone being taken advantage of, I feel kind of protective towards him/her.	3.18	.87	327

The results shown in Table 2 refer to the total (composite) values of the empathy score among medical students.

Table 2. Empathy among medical students / TEQ /Total (composite) values

Variable	N%	M± SD	p*	
Year	First	185	34.09±5.99	0.000
	Second	142	37.15±5.08	
Gender	Male	62	35.10±6.13	0.072
	Female	265	35.50±5.73	
Total		327	35.42 ±5.80	

* Mann-Whitney U Test

The total score varied in the interval 35.42±5.80; (±95.00CI:34.79-36.05); the median was 35, the minimum value of the score was 15, and the maximum was 50. In male students, the total score varied in the interval 35.10±6.13; ±95.00CI:33.54-36.65); the median was 34, the minimum value of the score was 15, and the maximum was 49. In female students, the total score varied in the interval 35.50±5.73; ±95.00CI:34.80-36.19); the median was 35, the minimum value of the score was 22, and the maximum was 50. For $Z = -0.35$ and $p > 0.05$ ($p = 0.072$), the total score for empathy among female students was insignificantly higher than among male students. In the first year of studies, the total score varied in the interval 35.09±5.99; ±95.00CI:33.22-34.96); the median was 33, the minimum value of the score was 15, and the maximum was 50. In the second year of studies, the total score varied in the interval 37.15±5.08; ±95.00CI:36.31-37.99); the median was 38, the minimum value of the score was 25, and the maximum was 49. For $Z = -5.17$ and $p < 0.05$ ($p = 0.000$) the total score for empathy among second-year students was significantly higher than among first-year students.

Discussion

The importance of empathy in medicine has been the subject of numerous studies^[1-17]. It is widely accepted that a physician is not able to genuinely empathize with every patient

and that the best results and objectivity are achieved if the doctor remains "clinically separated". But very often, when choosing a doctor, patients appreciate his/her affective concerns as much as technical competence. The patient doesn't want to be treated as an illness and wants to be assured that the doctor understands the non-medical aspects of his condition. The doctor can listen carefully, but the only way he/she can convince the patient that understands his/her concerns is to respond empathically. Research has shown that empathy has a direct therapeutic effect by reducing anxiety in patients^[1,10]. When a patient feels that a physician understands his/her condition and apprehensions, he/she may feel more comfortable to speak with his/her physician. Although there is no consensus on the best method of doing so, many researchers currently believe that it is possible to teach and learn empathy^[1,2,10].

This study provided a cross-sectional empathy profile of medical students during the first and second year of their medical training at the Faculty of Medicine in Skopje, which lasts 6 years. The empathy level was evaluated using TEQ. The results showed that the total score of empathy varied in the interval 35.42 ± 5.80 . The total score for empathy among female students was insignificantly higher than among male students; $Z = -0.35$ and $p > 0.05$ ($p = 0.072$), and the total score for empathy among second-year students was significantly higher than among first-year students; $Z = -5.17$ and $p < 0.05$ ($p = 0.000$). The minimal score of TEQ was 15 and the maximum score was 50. There was a moderately strong consistency among the answers of the students to the 16 questions of the TEQ (Cronbach's Alpha = 0.55). These results are slightly different from those previously published. This may be due to differences in the curricula of medical schools and cultural differences between countries.

According to the study conducted by Akgün Ö *et al.* in Turkey, using a Turkish version of TEQ, the average TEQ score was $52.8 \pm 6.1/65$ ^[11]. The Turkish version of the questionnaire consists of 13 items, 5 formulated positively and 8 negatively, and the respondents were asked to state how often they felt, thought, or behaved according to the statements at the 5-point Likert scale from 1 (not suitable at all) to 4 (fully suitable). The total possible score ranged from 13 to 65, with a higher score indicating a higher level of empathy. The Cronbach-alpha for the entire scale TEQ for the Turkish version was 0.79.

In the study conducted in Korea by Yeo and Kim using a Korean version of the TEQ, participants empathy score ranged from 20 to 60 ($M = 44.6$, $SD = 7.36$) (Cronbach's $\alpha = .71-.81$)^[2].

In the study conducted by Stefanovic *et al.*^[11] in Serbia, the average student TEQ score was $45.23 \pm 7.02/64$; in the study conducted by Youssef *et al.*^[12] in the Caribbean, the mean students TEQ score was $47.06 \pm 11.65/64$; in the study conducted by Haque *et al.*^[13] in Malaysia, the average students TEQ score was $45.83 \pm 6.03/64$. In these studies, the original questionnaire consisted of 16 items, 8 formulated positively and 8 negatively, and a total possible score that ranged from 0 to 64 was used.

Several studies showed that the level of empathy is effective in the selection of clinical medicine specialties where the patient-physician relationship is very important^[1]. In studies conducted in the USA^[1], UK^[1,14], Spain^[1,15], Serbia^[1,11], and Japan^[1,16] students who preferred people-oriented specialties had higher empathy scores than students preferring technology-oriented specialties.

In many studies, the low level of empathy of medical students and its decrease as their medical education progresses is of concern^[17,18]. Therefore, studies have been conducted on how to increase empathy levels in medical students. The results obtained have shown that effective educational interventions, targeted training programs, or medical interviews can increase empathy^[19,20]. A review conducted by Batt-Rawden *et al.*^[19] showed that educational interventions such as patient narrative and creative arts, writing, drama, communication skills training, problem-based learning, interprofessional skills training, patient interviews,

experiential learning, and empathy-focused training can be effective in maintaining and enhancing empathy.

Conclusion

Understanding and assessing the level of empathy of medical students during medical education is an important issue addressed during medical training. Despite the limitations of this study, which was conducted only on students from the first and second year of the Faculty of Medicine, using only one type of questionnaire (TEQ), it has provided insight into the level of empathy of the participants.

Conflict of interest statement. None declared.

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