Empathy in health care providers – validation study of the Polish version of the Jefferson Scale of Empathy

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Abstract

Purpose: Empathy as a crucial component of the interpersonal relationship needs to be measured, especially in helping professions. We designed this study to adapt both "Student" ("S") Version and "Health Professionals" ("HP") Version of the Jefferson Scale of Empathy (JSE) to Polish population.

Material and method: Three instruments were administered to 405 respondents:

– Polish version of the JSE,

– Interpersonal Reactivity Index (IRI) measuring four aspects of empathy (i.e. empathic concern, fantasy, personal distress and perspective taking),

– Emotional Intelligence Scale (EIS).

JSE was applied to physicians, nurses and medical, nursing and midwives students in order to calculate reliability coefficient and other psychometric data. In order to assess validity of the scale, the empathy results were correlated with those obtained by respondents on IRI and EIS.

Results: Cronbach alpha reliability coefficient for "S" version was 0.73, for "HP" version – 0.79, whereas for the entire sample was 0.71. Neither significant differences on empathy scores were found between genders nor among five groups of respondents on JSE. Physicians obtained the highest mean of empathy score (M=113.06), while the lowest was observed in nurses (M=110.12).

Empathy results on JSE correlated significantly with "empathic concern" ($r=0.25$, $p<0.01$) and with "perspective taking" ($r=0.26$, $p<0.01$). Also significant correlation was found between empathy and emotional intelligence.

Conclusions: Despite the lower (but acceptable) reliability coefficient of the Polish JSE in comparison with the original version, the scale proved to be very useful instrument evaluating empathy in health care professionals and students. Further research is needed to identify factors that contribute to changes in psychometric data of the scale.

Key words: empathy, design and methods, tests/interviews-psychometric, other psychological issues research.

Introduction

Meaning of empathy

The easiest way leading to effective care is understanding patient's verbal and emotional behaviours and the attitude of comprehending another person's feelings, emotions and perspective taking. The key instrument improving the therapeutic effectiveness of the clinician-patient relationship is empathy. It's well documented, that the medical care experience is enhanced by effective communication, basis of empathic understanding between clinicians and their patients and that's why the importance of empathy cannot be overemphasized.

What does empathy itself mean and how does it affect doctor (psychologist, nurse, therapist) – patient (client) relationship?

The first researcher, who believed empathy to be one of the most important component of the caregiver – patient relationship, was C. Rogers. He confirmed the meaning of empathy as a factor enhancing therapeutic efficacy. Empathy in Rogers' definition is an accurate understanding of another person's inner experience [1].

Classic definition of empathy by C. Truax describes it as an accurate perceiving of current client's feelings and an attuned way of verbal communicating this understanding to the client. Following his view, many researchers tended to argue, that empathy is a skill and an attitude. In this context it is the ability to communicate one's understanding of the other person' feelings and the reason for his/her feelings [2].

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Received 31.01.2006 Accepted 31.05.2006

Empirical data indicates links between empathy and prosocial behaviour, positive attitudes towards old people and confirm its improving influence on health outcomes, better patient compliance, reduction of medical-legal risk and satisfaction of physicians and patients [3].

Components of empathy

The relationship between empathy and helping behaviours occurs in its four components identified by J. Morse et al. [4]:

– emotive – as an ability to experience another person's emotional state,

– moral – as an imperative to be altruistic and to practice empathy,

– cognitive – as an ability to accurate perceiving and understanding another person's point of view,

– behavioural – as communicating one's own understanding of another person's perpective Similarily, C. Patterson also described empathy as a phenomenon stimulating four stages of helping:

• susceptibility of the helper to another person's communicative signals,

• putting helper in the situation of other,

• communicating helper's understanding to the client,

• client's validation of the helper's perception of client's world.

So that, empathy in Patterson's concept consists of four aspects: emotive, cognitive, communicative and relational [5]. However, the Society for General Internal Medicine defines empathy as "the act of correctly acknowledging the emotional state of another without experiencing that state oneself". This definition suggests, that empathy is a combination of two components – intellectual and emotional and, that professional empathy is an cognitive rather than emotional form of understanding other person's behaviour [6].

Primary care clinicians – medical teachers (women – pediatricians and men – internists) who were asked to define empathy, described it as "putting myself in the patient's shoes" and agreed, that empathy consists not only of intellectual understanding and cognitive analysis, but also of emotional connection with the patient. While women – physicians tended to point out emotional component of empathy ("feeling with"), men emphasized the importance of developing empathic behaviours, such as escorting patients, giving direct phone line, prescribing a less expensive medication, etc. [6,7]

On the basis of these outcomes, empathy in patient – care situations may be described as an ability to understand the patient's inner experiences and perspective and to communicate this understanding.

Empathy in health care practicioners

Undoubtedly empathy is a multidimensional form of interaction which involves communication of the health care providers' attitudes of openness and understanding of their patient's world. The empathic behaviours of caregivers are facilitator of trust, coping skills and patient's satisfaction with therapy. Moreover, it protects helpers from burnout and influences their well-being.

It was found, that irrespective of race, nation, country and tradition, those practicioners, who were able to form a warm, friendly relationship with their patients were more effective, than impersonal and formal ones [8].

In the era of high technology and managed health care, the dehumanizing quality of standardized practice discounts the role of empathy and reduces it to a relationship, in which the patient is simply more willing to comply with doctor's recommendations [9]. However, empathic interaction between caregiver and patient means much more than patient's compliance. Its quality influences extremely not only therapeutic outcomes, but, accordingly to La Monica definition of empathy, "[it]… signifies a central focus and feeling with and in the client's world. It involves accurate perception of the client's world by the helper, communication of this understanding to the client, and the client's perception of the helper's understanding" [10].

Though the La Monica's definition of empathy refers to nursing practice, it seems to describe precisely all helper – client relationships.

Empathic understanding is the core of the interaction between physicians (nurses, therapists) and patients. Thus, practicioners to be effective must know how to listen, how to talk to patients and how to communicate their understanding. Listening and empathizing are essential skills when relating to others. Physician's "open" attitude towards patients gives them a feeling of safety, a belief in doctor's abilities and moreover decreases the emotional distance in the doctor–patient interaction.

The procedure of translating original JSE into Polish

Once the permission for translating was obtained, three well-known English language persons (psychologist, physician and sociologist) translated the questionnaire into Polish and then native English speaker (speaking Polish fluently) applied the "forward-backward" procedure. As soon as the provisional version of the Polish JSE has been provided, the questionnaire was further administered to other physicians in order to estimate the comprehensibility of each item. After the consensus by all authors has been obtained, the final version of Polish JSE was developed. The same procedure was repeated with reference to both versions of the scale – Student Version ("S" Version) and Health Professionals Version ("HP" Version)

Two another methods – IRI and EIS used in the study are previously validated instruments, what means that their forward-backward translation and the psychometric data were obtained by the University of Gdansk or the Psychological Tests Laboratory of the Polish Psychological Society.

Aims

This study aimed:

1. To test the psychometric values of Polish version of the JSE,
2. To examine the correlation between Polish version of the JSE and both IRI and EIS,
3. To assess the level of empathy in health care practicioners (including physicians, nurses and students).

Material and method

Procedure

Data were collected in academic year 2003/04. The participants were aware of the study goals and consented to participate

in it. They were instructed not to identify themselves. The only information we asked them to disclose were: gender, age, specialty (in physicians) and seniority (in physicians and nurses). All of the physicians who participated in this study completed the questionnaires either at the end of the residency syllabus (doctors without specialization) or postgraduate education (internists and pediatricians who were obtaining specialization in family medicine). The rest of respondents were administered the questionnaires during under- or postgraduate courses in the field of family medicine.

The measurement of empathy

Empathy as the basis of human relationships was investigated nearly all over the world. In order to estimate its specific components, some instruments were constructed, these were for example: "Interpersonal Reactivity Index" by M. Davis measuring emotional and cognitive empathy, "Hogan Empathy Scale" assessing moral empathy, "Emotional Empathy Scale" by A. Mehrabian and N. Epstein or the "Empathic Understanding of Interpersonal Processes Scale" purposed for nurses [10]. Another instrument measuring empathy is "Empathy Scale" assessing client's perception in the therapeutic relationship with the clinician [9].

Though a great number of studies on empathy in health care professionals have been already done, none of the questionnaires were designed directly to them.

An instrument to measure empathy in health care providers in specific patient care situations was developed by M. Hojat et al. from Jefferson Medical College in Philadelphia. The researchers constructed 20-items scale with three meaningful factors – perspective taking, compassionate care and standing in the patient's shoes, and named it the Jefferson Scale of Empathy (JSE).

JSE was originally developed to measure the orientation of medical students towards physicians empathy (Student or "S" Version). The authors developed also a revised version of the scale to assess empathy in physicians and other health professionals ("HP" Version). The "HP" Version is slightly modified and refers rather to the caregivers' behaviours than to empathic attitudes. Internal consistency reliability (coefficient alpha) on "S" Version was 0.89 for medical students and 0.87 for medical residents. The alpha reliability of the "HP" Version was 0.81. Test-retest reliability was 0.65 with three to four month interval between testing. Both "S" and "HP" Version of the instrument consists of 20 Likert-type items answered on a seven-point scale from 1 – strongly disagree to 7 – strongly agree [11,12]. We asked for consent to translate the questionnaire into Polish and to use it to study empathy in physicians, nurses and students

In order to obtain accurate psychometric data of the Polish JSE and to compare the results with those reported by other researchers, two questionnaires were used additionaly in the study:

– the Interpersonal Reactivity Index by M. Davis (IRI) – a 28-items instrument consisting of four 7-items subscales:

1) Perspective Taking (PT) purposed to measure the individual's dispositional tendency to adopt another person's perspective,

2) Fantasy Scale (FS) intended to provide an indication of an individual's propensity to become imaginatively involved with fictional characters and situations,

3) Empathic Concern (EC) measuring the individual's self-reported tendency to experience feelings of concern for others,

4) Personal Distress (PD) designed to measure the extent to which an individual feels distress as a result of witnessing another's emotional distress.

Each of the 28 items is rated using a five point Likert scale, ranging from 0 – does not describe me well to 4 – describes me well.

IRI is widely used self-report measure of empathy of satisfying reliability and validity. The IRI subscales are regarded as the accurate indicators of social functioning, self-esteem, emotionality, and sensitivity to others and are strongly related to perspective taking, compassionate care and standing in the patient's shoes measuring by JSE.

Internal consistency of IRI ranges from 0.70 to 0.78. 114 significant correlation coefficients (to test validity) between IRI and Wechsler Adult Intelligence Scale, and 466 significant correlations between IRI and Emotional Empathy Scale by A. Mehrabian and N. Epstein were obtained, when exploring relationships between Davis's test and above mentioned methods [13-15].

– The Emotional Intelligence Scale by N. S. Schutte, J. M. Malouff et al. (EIS) – the theoretical basis of the questionnaire is P. Salovey's and J. D. Mayer's model of emotional intelligence (EI). Salovey and Mayer first defined EI as the ability to monitor and regulate one's feelings and those of others and to use feelings to guide thought and action. Emotional intelligence is the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth [16]. In one of their 1990's publications Salovey and Mayer hypothesized that there was a positive relationship between emotional and cognitive empathy and emotional intelligence and that's why the EIS was used in the study. Moreover, emotional intelligence is believed to encompass a variety of social and cognitive functions related to the expression of emotions [16]. The EIS by Schutte, Malouff et al. is a 33-items method answered on a five-point scale from 1 – strongly disagree to 5 – strongly agree. Psychometric studies showed the EIS to have good internal consistency and test-retest reliability. Validation study proved a correlation between EIS and some theoreticaly related constructs, such as: alexithimia, attention to feelings, clarity of feelings, mood repair, optimism and impulse control and showed its predictable value of first-year college grades. EIS scores were significantly higher for females than males and associated with one of the big five personality dimensions – openess to experience [17]. In this study we report the use of JSE ("HP"or "S"-Version), Interpersonal Reactivity Index and Emotional Intelligence Scale in five groups of respondents: physicians, nurses, medical students, obstetrics and nursing students.

Participants

Study participants consisted of 405 respondents (324 women and 81 men) including:

– 118 physicians (95 women, 23 men) with the mean age 38.84 (SD=9.62)

– 76 nurses (women) with the mean age 35.43 (SD=5.72)

Table 1. **Distributions, percentiles and reliability coefficient on the JSE**

Interval	Frequency	Cumulative frequency	Cumulative %
20-40	1	1	0.25
40-60	0	1	0.25
60-80	7	8	1.97
80-100	56	64	15.76
100-120	238	302	74.38
120-140	104	406	100.00
	"S" Version	"HP" Version	Entire sample ("S"&" HP"Version)
Mean	112.40	111.30	111.85
SD	11.40	16.01	13.77
Percentile			
25th	106	104	105
50 th (median)	115	114	115
75th	120	121	121
Possible range	20-140	20-140	20-140
Actual range	67-139	39-137	39-139
Cronbach alpha reliability	0.73	0.77	0.71
Split-half reliability	0.72	0.79	0.72

– 149 medical students (91 women, 58 men) with the mean age 24.73 (SD=1)

– 33 midwives students (women) with the mean age 21.37 (SD=1.16)

– 29 nursing students (women) with the mean age 21.55 (SD=2.08).

The majority of participants are women which is caused by a gender composition. Our sample consisted of family doctors, pediatricians and majors especially dominated by women.

Statistical analysis

All scores were obtained with the use of STATISTICA 6. To investigate the mean scores, medians, standard deviations, minimum and maximum values of the variables, a descriptive analysis were done. A comparison between men's and women's mean empathy scores, among women (physicians, nurses, medical, midwives and nursing students), and between men (physicians and medical students) was done. To compare these means Student t-test or analysis of variance (ANOVA) was used. Levene test was applied to examine the homogeneity of variances. In these cases where the differences between scores were significant, Scheffe post hoc test was done to investigate which groups of participants differ from one another. The split-half reliability and alfa Cronbach reliability coefficient were calculated to assess the reliability of the Polish JSE. The correlations' estimation between JSE and two other methods was considered as preliminary validity test of the empathy scale.

Results

The preliminary psychometric data of the JSE are presented in *Tab. 1*.

Descriptive analysis for the JSE reported in *Tab. 1* showed that the mean empathy score for the entire sample was 111.85 (SD=13.77). The lowest score obtained in the study was 39, whereas the highest was 139. The reliability coefficient calculated by Cronbach alpha for the entire sample was 0.71, for the "S" Version was 0.73 and for the "HP" Version was 0.77. The split-half reliability coefficient for the entire sample was 0.72. Similarly, the split-half reliability coefficient was lower for "S"Version (0.72), than for "HP"Version (0.79). Cronbach alpha for individual items ranged from 0.75 to 0.78 ("HP" Version) and from 0.70 to 0.74 ("S" Version). The mean item scores obtained in the study ranged from 3.08 to 6.59 on the seven-point scale (SD ranged from 1.1 to 2, mode value was 7 on sixteen items). The mean item scores ranged from 3.08 to 6.59 (SD=1.2 – 2) indicate the tendency to be skewed toward the upper end of the scale. The item – total score correlation ranged from 0.10 to 0.60 on the "HP" Version and from 0.14 to 0.62 on the "S" Version.

Number of participants, means, standard deviations of the empathy scores for all groups and summary ANOVA results on the JSE are reported in *Tab. 2*.

Physicians obtained the highest mean empathy scores on JSE, whereas nurses scored the lowest. Results of analysis of variance indicated no significant differences neither between genders (F=1.19, df=1, p=0.28) nor among five groups of respondents (F=0.72, df=4, p=0.58).

Number of participants, means, standard deviations of the empathy scores for all groups and summary ANOVA results on IRI subscales are presented in *Tab. 3*.

The scores on each of the subscales discriminated well between genders. The level of EC (F=24.67, df=1, p=0.00) PD (F=14.62, df=1, p=0.00) and PT (F=3.39, df=1, p=0.06) (the difference nearly significant)) was significantly higher in women than in men. Significant differences were found also when comparing groups of participants. PD and PT were the highest in nurses (PD-F=5.10, df=4, p=0.00, PT-F=2.76, df=4, p=0.02). EC was the highest in nurses too, whereas medical students obtained the highest level of FS. The differences among groups on these subscales were not statistically significant.

Table 2. **Number of participants, means and standard deviations of the JSE ("S" Version or "HP" Version) for genders and individual groups of participants, and summary ANOVA results**

Groups of respondents	JSE		
	N	M (in descending order)	SD
Gender			
Women	324	112.59	12.51
Men	81	110.90	12.16
F		1.19	
df		1	
p		0.28	
Physicians	118	113.06	14.49
Nursing students	29	113.00	12.06
Medical students	150	112.48	10.88
Midwives students	33	112.39	10.34
Nurses	76	110.12	12.87
F		0.72	
df		4	
p		0.58	

N – number of participants, M – mean, SD – standard deviation, F – Fisher test, df – degrees of freedom, p – probability

Table 3. Number of participants, means and standard deviations of the IRI for genders and individual groups of participants, and summary ANOVA results

Group of respondents	EC		FS		PD		PT	
Gender	N	M	SD	M	SD	M	SD	M	SD
Women	324	20.82	3.43	19.36	10.63	17.53	3.66	20.45	3.59
Men	81	18.72	3.38	18.23	4.78	15.82	3.47	19.62	3.81
F		24.67		0.87		14.62		3.39	
df		1		1		1		1	
p		0.00**		0.35		0.00**		0.06~	
Physicians	118	20.42	3.85	19.40	4.38	16.74	3.30	20.87	3.41
Nurses	76	20.99	3.40	17.91	4.08	18.78	3.40	20.92	3.60
Medical students	149	19.89	3.46	19.65	4.74	16.73	3.75	19.79	3.76
Midwives students	33	20.91	2.73	18.06	4.38	17.57	3.61	19.36	3.31
Nursing students	29	20.55	3.49	19.34	6.02	16.41	4.66	19.76	3.91
F		1.51		0.53		5.10		2.76	
df		4		4		4		4	
p		0.20		0.72		0.00**		0.02*	

EC – empathic concern; FS – fantasy scale; PD – personal distress; PT – perspective taking; N – number of participants; M – mean; SD – standard deviation; F – Fisher test; df – degrees of freedom; $p<0.05$*; $p<0.01$**; p nearly significant ~

Number of participants, means, standard deviations of the emotional intelligence scores for all groups and summary ANOVA results on EIS are given in *Tab. 4*.

Comparison of emotional intelligence showed significantly higher score in women than in men (F=12.69, df=1, p=0.00). No statistically significant differences were found among individual groups of respondents.

The relationships between empathy scores, IRI and EIS are reported in *Tab. 5* and *6*.

Significant or nearly significant correlations were found between scores on the JSE and relevant measures such as: empathic concern (for physicians, r=0.19, p=0.04; for nursing students, r=0.43, p=0.02), fantasy (for medical students, r=0.22, p=0.06; for midwives students, r=0.55, p=0.00), perspective taking (for nurses, r=0.21, p=0.06; for medical students, r=0.27, p=0.01; for nursing students, r=0.50, p=0.00). JSE correlates significantly with EIS. The correlation coefficients between empathy scores and emotional intelligence were: for physicians, r=0.27, p=0.00; for nurses, r=0.42, p=0.00; for medical students, r=0.31, p=0.00.

The correlations of the total score on the JSE and the scores of the entire sample on IRI and EIS are shown in *Tab. 6*.

Three significant outcomes were noticed when correlating results of the entire sample on empathy scale with IRI and EIS. JSE correlates significantly with two of the IRI subscales: for ECr=0.25, p=0.00 and for PTr=0.26, p=0.00. Significant correlation was also observed between empathy scores and emotional intelligence, r=0.30, p=0.00.

Table 4. **Number of participants, means and standard deviations on the EIS for genders and individual groups of participants, and summary ANOVA results**

Group of respondents	EIS		
Gender	N	M (in descending order)	SD
Women	313	127.29	13.11
Men	80	121.26	14.92
F		12.69	
df		1	
p		0.00**	9.98
Nursing students	29	129.62	12.94
Physicians	109	127.36	13.52
Nurses	72	125.74	12.26
Midwives students	33	125.73	15.12
Medical students	150	124.66	
F		1.42	
df		4	
p		0.34	

N – number of participants; M – mean; SD – standard deviation; F – Fisher test; df – degrees of freedom; p<0.01**

Table 5. **Pearson's correlation coefficients between JSE, IRI and EIS**

	JSE									
	Physician		Nurses		Medical students		Midwives students		Nursing students	
	r	p	r	p	r	p	r	p	r	p
EC	0.19	0.04*	0.17	0.13	0.18	0.11	0.19	0.30	0.43	0.02*
FS	0.04	0.63	0.00	0.99	0.22	0.06∼	0.55	0.00**	0.18	0.36
PD	0.11	0.23	-0.19	0.09	0.11	0.33	0.07	0.71	-0.13	0.49
PT	0.17	0.07	0.21	0.06∼	0.27	0.01*	0.17	0.35	0.50	0.00**
EIS	0.27	0.00*	0.42	0.00**	0.31	0.00**	0.23	0.20	0.19	0.31

r – correlation coefficient; EC – empathic concern; FS – fantasy scale; PD – personal distress; PT – perspective taking; EIS – Emotional Intelligence Scale; p<0.05*; p<0.01**; p nearly significant ∼

Table 6. **Pearson's correlation coefficients between JSE and the scores of all participants on IRI's subscales and EIS**

Scale	JSE	
	r	p
EC	0.25	0.00**
FS	0.08	0.13
PD	-0.02	0.70
PT	0.26	0.00**
EIS	0.30	0.00**

r – correlation coefficient; p<0.01**

Discussion

This study aimed to evaluate the psychometric value of the Polish version of the Jefferson Scale of Empathy – an American instrument measuring empathy in medical students and health care professionals. Any validation study of this instrument was done before in Poland. Psychometric data in support internal consistency showed the Cronbach alpha coefficient 0.73 for "S" Version and 0.77 for "HP" Version, which are within the acceptable range for initial research. Both obtained reliability coefficients are lower than those reported by the authors of the JSE. It makes us to explore the underlying reasons for the results. Two fundamental possibilities should be considered. Firstly – respondents who completed the "HP" Version were primary care physicians (family doctors, internists, pediatricians) and the groups which were administered the "S" Version consisted mostly of final-year medical students. Both the lack of doctors of surgical specialties and age of the students could have become a factors causing our cohort too homogeneous. Secondly – in our opinion, the translation still demands the improvement of linguistic correctness. The studies on these issues are in progress.

Similarly to original version, Polish JSE discriminates between genders to a little extent, although in both research (Polish and American) women's empathy is higher than men's. This and many other research confirm the theory on higher women's sensitivity to others' emotional states and underline women's more accepting attitude toward patients and more related-orientation in the doctor-patient situations [18]. Our studies on empathy in first and final-year medical students proved the gender differences both in the first and the final year of the education [19]. Significant differences between women and men could have been also observed on IRI subscales, especially on "empathic concern", "personal distress" and "per-

spective taking" in the present study. A gender analysis of the empathy results on JSE disclosed lower mean empathy scores in Polish respondents both in women and men (M=112.59 and M=110.9) than scores in American health care providers (M=120.9 and M=119.1) reported by Hojat, Gonella et al. [12]. We suggest two explanations of these results. Firstly, it is possible, that some items of the JSE after they had been translated into Polish lost their accuracy, and secondly – both cultural and curriculum differences between Polish and American health care providers should be taken into consideration. To our knowledge, more humanistic and patient-oriented topics is being taught during undergraduate and postgraduate education in American medical universities.

In spite of still existing defects of the Polish JSE, the results of empathy obtained by the sample correlate highly with IRI and EIS. Though the IRI was developed for a general population in opposite to JSE which was designed directly to health care practitioners and students, two IRI subscales (EC and PT) correlate significantly with the total score of JSE. To our satisfaction these findings are similar to those reported by Hojat et al. [20], who discovered that perspective taking (PT) and empathic concern (EC) are the most relevant to patient care situation and reflect the patient-physicians relationship, while two other factors – fantasy (FS) and personal distress (PD) are attributes less relevant to the patient-physician relationship.

The connection between empathy and emotional intelligence supports the Salovey's and Mayer's theory which assumes emotional intelligence to be a form of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and action. Empathy skills are those that involve paying attention to other people things like listening, attending to needs and wants of others, and building relationships. Once the emotional intelligence increases, one is more likely to recognize other people's point of view and to satisfy their expectations accurately [17]. In our research women's emotional inteligence is statistically higher than men's.

The relationships between above mentioned methods support the diagnostic value of the Polish version of the JSE as the psychometrically sound instrument.

Realizing that Polish version of the JSE deserves further research attention including linguistic improvement and applying it in more diverse samples, we are deeply satisfied from the possibility to evaluate the level of empathy in health care professionals with specific instrument. In the nearest future we intend to compare student's empathy in the early and final stages of medical undergraduate education and to estimate its level in doctors of "people-oriented" and "technology-oriented" specialties.

Acknowledgements

The authors declare that any commercial associations or patent licenses that might result in a conflict of interest with the work are presented in the submitted paper.

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