ASSESSING EMPATHY AMONG CZECH MEDICAL STUDENTS: A CROSS-SECTIONAL STUDY[1]

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ABSTRACT

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Objectives. The objective of the study was to examine the psychometric parameters of the Czech version of the Jefferson Scale of Physician Empathy-Student (JSPE-S), and to study differences in empathy scores between women and men, and students in different years of medical school.

Sample and setting. The JSPE-S was administered to 725 students at the 3rd Medical School, CU Prague and to 871 students at the Faculty of Medicine UPOL. The design was cross-sectional and first to sixth year students were surveyed.

Results. Exploratory factor analysis supported the existence of three components of "Perspective taking", "Compassionate care", "Empathetic understanding" and the Cronbach alpha coefficient was 0.76. The effects of gender and locality were not statistically significant. The JSPE-S scores of Czech students decreased in a statistically significantly and clinically meaningfully way over the first two years of study, staying low until the 6th year. The construct validity and internal consistency of the Czech version of the JSPE-S was generally supported.

Study limitations. Firstly, attitude toward the role of the empathy in doctor-patient relation may differ substantially from actual behavior. Secondly, there is very strong possibility of cohort effects. Thirdly, the survey was conducted at one Czech and at one Moravian medical school only, what potentially limits the external validity of our finding.

key words:
empathy,
medical students,
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klíčová slova:
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Empathy, as Spiro (1992, p. 844) wrote "the capacity to participate deeply in another's experience", is considered to be critical to the development of the professionalism of medical students. There is no unanimous consensus among researchers as to the definition of the construct. Empathy has been characterized as an emotional or a cognitive attribute, frequently a combination of both (Hojat, 2007). Interested readers can find a critical review of the methods used for measurement and empirical research of empathy in medicine in Hemmerdinger et al. (2007) and Pedersen (2008), and attempts to introduce methods for assessment of the construct into Czech socio-cultural environment in Kožený, Tišanská (2011) and Tišanská, Kožený (2012a, 2012b).

The cognitive approach appears potentially the most promising as it implies the possibility of learning empathy and medical schools can thus influence the development of students' skills in doctor-patient relationships. The Jefferson Scale of Physician Empathy (JSPE-S), to our knowledge so far the only instrument specifically developed for use in medical context, has been receiving extensive international attention by researchers and has been translated into 35 languages. The scale, arguably the most widely used and psychometrically tested instrument, is based on an assumption advanced by Hojat (2007, p. 80) that empathy is „predominantly cognitive (rather than an emotional) attribute that involves an understanding (rather than feeling) of the patient's experiences, concerns, and perspectives of the patient, combined with capacity

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to communicate this understanding". The JSPE-S, designed specifically for assessment the attitude of medical students and health providers toward the role of empathy in the physician-patient relationship, is not only suitable for evaluation and continual monitoring but it also has the inherent capacity to influence the quality of interaction in a medical context. The authors (Hojat et al. 2002a) also developed a version of the scale to assess empathy in physicians and other health providers (HP version). The HP version refers rather to carergivers' behavior than to empathetic attitudes.

Our study, which is cross-sectional and has a predominately descriptive character, was designed to (a) examine the psychometric parameters of the Czech version of the JSPE-S among a sample of Czech medical students from two medical schools; (b) test the effect of gender, location, and year of school on their attitude towards the role of empathy in physician-patient relationships.

METHOD

Participants

The sample consisted of the first to sixth year students of the 3rd Medical School, Charles University Prague (N = 725; 268 males, 457 females) in the academic year 2009-2010 and the Faculty of Medicine and Dentistry, Palacky University Olomouc (N = 871; 247 males, 624 females) in the academic year 2010-2011.

Instrument[2]

The measure of empathy, the Jefferson Scale of Physician Empathy-Student Version (JSPE-S), is a 20-item self-report instrument for assessment of attitudes towards the role of empathy in a medical care context (Hojat, 2007). Half the items are negatively scored and respondents indicate their level of agreement to each item on a 7-point Likert scale that ranges from 1 (*strongly disagree*) to 7 (*strongly agree*).

Procedure

The JSPE-S was translated into Czech by the authors, back-translated into English by a bilingual psychologist living in the USA. The versions were reviewed by independent judges to detect inconsistencies and finally tested using a small group of medical students. The final Czech version of the JSPE-S was distributed to the first- to sixth-year students, during regular classes, at the end of their academic year.

Their participation was voluntary, anonymous and we informed the participants about the experimental purpose of the study. No student refused to fill in the questionnaire so the overall response rate 88% (range 79% – 94%) was influenced by class attendance only. The research was approved by the Prague Psychiatric Center Research Ethics Committee. All computations were done with IBM SPSS statistical software version 19.

RESULTS

Descriptive statistics at the item level

The mean score for the items ranged from a low of 2.87 (SD = 1.73) for the item *15. Empathy is a therapeutic skill without which the physician's success is limited* to a high of 6.12 (SD = 1.33) and for the item *13. Physicians should try to understand what is*

[2] Permission to use the JSPE-S was obtained from the Jefferson Medical College Center for Research in Medical Education and Health Care. The Czech and Slovak versions of JSPE-S are available on http://www.pcp.lf3.cuni.cz/lps.

Table 1 Factor pattern coefficients of the JSPE-S items (PCA, varimax rotation)

Item	F1	F2	F3	h^2	M	SD	r_{it}
*3. It is difficult for a physician to view things from patients' perspectives.	.76	.19	-.08	.62	5.06	1.76	.36
4. Understanding body language is as important as verbal communication in physician–patient relationships.	.68	.16	.04	.49	4.82	1.60	.36
* 6. Because people are different, it is difficult to see things from patients' perspectives.	.63	.16	-.14	.44	6.00	1.26	.28
5. A physician's sense of humor contributes to a better clinical outcome.	.61	.01	.01	.37	4.91	1.79	.24
*1. Physicians' understanding of their patients' feelings and the feelings of their patients' families does not influence medical or surgical treatment.	.59	.23	.19	.44	5.49	1.32	.42
10. Patients value a physician's understanding of their feelings which is therapeutic in its own right.	.47	.01	.30	.31	4.23	1.62	.28
13. Physicians should try to understand what is going on in their patients' minds by paying attention to their nonverbal cues and body language.	.09	.69	-.01	.49	6.12	1.33	.45
*11. 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 medical or surgical treatment.	.17	.66	.12	.48	5.86	1.36	.51
*18. Physicians should not allow themselves to be influenced by strong personal bonds between their patients and their family members.	.19	.65	.02	.46	5.77	1.43	.47
*12. Asking patients about what is happening in their personal lives is not helpful in understanding their physical complaints.	.09	.65	.24	.48	5.51	1.50	.50
16. 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.	.09	.62	-.04	.39	6.06	1.44	.39
*19. I do not enjoy reading nonmedical literature or the arts.	-.55	.54	.21	.64	4.69	1.59	.17
20. I believe that empathy is an important therapeutic factor in the medical treatment.	-.56	.51	.20	.61	4.28	1.73	.14
*14. I believe that emotion has no place in the treatment of medical illness.	-.01	.41	.31	.26	4.23	1.65	.34
17. Physicians should try to think like their patients in order to render better care.	.31	.38	-.34	.36	5.57	1.52	.24
9. Physicians should try to stand in their patients' shoes when providing care to them.	-.20	.03	.62	.42	4.92	1.54	.09
2. Patients feel better when their physicians understand their feelings.	.27	.21	.57	.44	5.79	1.16	.39
15. Empathy is a therapeutic skill without which the physician's success is limited.	-.19	-.08	.57	.36	2.87	1.73	.05
*8. Attentiveness to patients' personal experiences does not influence treatment outcomes.	.21	.17	.48	.30	5.47	1.38	.32
*7. Attention to patients' emotions is not important in history taking.	.33	.19	.39	.29	5.43	1.37	.35
% variance	20.31	14.93	7.94				
eigenvalue	4.06	2.99	1.59				

Notes: F1 - perspective taking; F2 - compassionate care; F3 - empathetic understanding
*reverse scored items
r_{it} – item-total partial correlation

going on in their patients' minds by paying attention to their nonverbal cues and body language (see Table 1). All items were negatively skewed (range -2.218 – -0.074) apart from the item no. 15., which was skewed positively (0.753). The participants utilized the full range of 7 points on the scale for each item. Average percentage distributions were 3.8, 6.5., 7.3, 14.1., 16.7., 24.9., 26.9 for the scale values from 1 to 7, respectively.

Item-total score partial correlations were all positive and statistically significant ($p \leq 0.05$), ranging from a low of 0.05 (*15. Empathy is a therapeutic skill without which the physician's success is limited*) to a high 0.51 (*11. 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 medical or surgical treatment*); both items are reverse scored. Although the results of item-total score partial correlations were all positive, four values (for the items no. 9., 15., 19., and 20.) were smaller than is generally considered acceptable (see Table 1).

Descriptive statistics at the scale level

The mean, standard deviation, quartile points, and Cronbach's coefficient alpha of the scale based on the entire sample of 1596 medical students are reported in Table 2.

Table 2 JSPE-S scores by medical school class and gender

Cohort	N	Mean	SD	95% CI	Skewness	Kurtosis	Min	Max	α	Percentiles		
										25	50	75
First-year	324	106.42	10.42	105.29-107.56	-0.24	0.31	75	137	0.76	100	106	114
Second-year	287	102.31	8.83	101.28-103.33	0.26	0.56	75	135	0.66	97	101	108
Third-year*	253	96.19	11.21	94.81-97.57	0.05	-0.02	72	126	0.66	90	96	102
Fourth-year*	239	95.15	17.94	92.87-97.42	-0.31	-0.87	61	130	0.88	81	97	109
Fifth-year*	217	96.12	10.41	94.74-97.51	0.47	1.48	72	134	0.72	90	96	99
Sixth-year*	276	98.20	14.22	96.52-99.88	-0.55	-0.85	72	121	0.77	88	102	108
Females	1081	99.90	13.34	99.10-100.69	-0.47	0.14	61	137	0.77	92	101	109
Males	515	98.82	12.48	99.74-99.90	-0.42	0.39	61	130	0.74	92	99	106
Total	1596	99.55	13.08	98.91-100.19	-0.45	0.20	61	137	0.76	92	100	109

α – Standardized Cronbach's coefficient alpha
* Groups that share the asterisk are not significantly different from one another. All other differences in JSPE-S scores are significant at the $p<0.05$ level.

As shown in Table 2, women outscored men on average by 1.076 points but the gender differences are not statistically significant ($t_{df=1074.02} = 1.57$; $p = 0,16$). In comparison to men, women had statistically higher scores on items 3., 4., 14., and 17. ($p \leq 0.011$; Tukey's adjustment of $p = 0.05$). Men scored higher than women only on item 9. The standardized Cronbach's alpha coefficient of the JSPE-S scale based on the responses of students at the 3rd Medical School was 0.77, 95% CI 0.73 – 0.78; students at the Faculty of Medicine UPOL 0.75, 95% CI 0.72 – 0.77, and for the total sample was 0.76, 95% CI 0.73 – 0.78, fluctuating between 0.66 – 0.88 depending on the year of study. The internal consistency value is below the reliability coefficients observed in studies on American physicians (Hojat, 2007) and pharmacy students (Fjortoft et al., 2011) but similar to those reported in Portuguese (Magalhães, et al., 2011), Korean (Roh et al., 2010), and Japanese (Kataoka et al., 2009) publications. The JSPE-S score distribution and cumulative percentages are shown in Table 3.

Table 3 JSPE-S score distribution and cumulative percentages

Score interval	Frequency	Percent	Cumulative Percent
≤65	17	1.1	1.1
66-70	20	1.3	2.3
71-75	72	4.5	6.8
76-80	44	2.8	9.6
81-85	61	3.8	13.4
86-90	126	7.9	21.3
91-95	165	10.3	31.6
96-100	315	19.7	51.4
101-105	250	15.7	67.0
106-110	191	12.0	79.0
111-115	179	11.2	90.2
116-120	105	6.6	96.8
121-125	31	1.9	98.7
126-130	16	1.0	99.7
≥131	4	0.3	100.0

Underlying factors

Responses from 1596 medical students were subjected to exploratory factor analysis, principal components analysis rotated to the varimax criterion with Kaiser normalization. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.83, and Bartlet's test of sphericity $\chi^2 = 7815.5$, $df = 190$, $p < 0.001$. The decision to extract three factors was based partly on the Cattell scree test, partly on the interpretability of findings and the "explained" variance. Rotation converged in 4 iterations accounting for 43.17% of total variance, and there were 52% of nonredundant residuals with absolute values greater than 0.05. The factor pattern/structure coefficients, the magnitude of eigenvalues, and the proportions of variance are reported in Table 1.

The first component, which accounted (before rotation) for 20.31% of the variance, is based on the content of the six items with pattern/structure coefficients greater than 0.47. The item with largest coefficient on this factor was statement no. *3. It is difficult for a physician to view things from patients' perspectives*. The component described as the core cognitive constituent of empathy is similar to the factor of "Perspective taking" that emerged in a sample of American physicians (Hojat, 2007) and a sample of American pharmacy students (Fjortoft et al., 2011).

The second component, "explaining" 14.93% of the variance, loaded on nine items with pattern/structure coefficients ranging from 0.38 to 0.69. The item with the largest value was *13. Physicians should try to understand what is going on in their patients' minds by paying attention to their nonverbal cues and body language.* The construct, entitled "Compassionate care", was identified in samples of American physicians (Hojat. 2007) and pharmacy students (Fjortoft et al., 2011), English (Tavakol et al., 2011), Portuguese (Magalhães, et al., 2011), Korean (Roh et al., 2010), Iranian (Rahimi-Madiseh et al., 2010), and Mexican (Alcorta-Garza et al., 205) medical students.

The third component, labeled "Empathetic understanding", accounted for 7.94% of the variance. It included five items with pattern/structure coefficients within the

0.39 - 0.62 interval. The item with largest value was *9. Physicians should try to stand in their patients' shoes when providing care to them.* There is a suggestion of a similar factor found in a sample of American pharmacy students (Fjortoft et al., 2011).

The factor matrix approximated simple structure with the exception of the items 19. and 20. cross-loading both on the first and the second factor and correlated negatively with all indicators of the first factor (range -0.29 ÷ -0.11). Communality coefficients of the item 5., 7., 8., 10., and 14. indicated a rather low degree in the variance of the measured variables that the factors, as a set, can reproduce, and that their lower boundary of the reliability estimate is also slightly below the desired level.

The effect of gender, year of study, and location

The descriptive statistics of the students' JSPE score, by class, is presented in Table 2. A 2x2x6 analysis of variance was used to test the effect of gender, location, and year of study on the JSPE score. The corrected model was statistically significant ($F_{df=23} = 8.32$; $p < 0.001$; $\eta^2 = 0.11$). The main effects "gender", "location", and all interaction terms were statistically nonsignificant. Only the factor "year of study" was statistically significant ($F_{df=5} = 27.74$; $p < 0,001$; $\eta^2 = 0,08$).

The results of post hoc ANOVA pairwise comparisons, using Tukey's HSD test, indicate the presence of three subsets of classes. In descending order: the 1st-year students with the highest score followed by the 2nd-year students, and finally the 3rd - to 6th-year students (Table 2). The effect size of the decline in empathy between year 1 vs. year 2, year 2 vs. year 3, and year 1 vs. year 3 estimated by Cohen´ s d (1988) was 0.42, 0.67, 0.95, respective, which means that it is nearly 1SD difference between year 1 vs. year 3. As the populations being compared are near normal, essentially equally numerous, and with statistically nonsignificant differences in variability (Levene's tests), it is meaningful to define measures of nonoverlap associated with the index d. The cohorts are separated so that about 28% (year 1 vs. year 2), 43% (year 2 vs. year 3), and 53% (year 1 vs. year 3) of their distribution areas are not overlapping. The effect of year of study is considerable and differences are not only statistically significant but also clinically meaningful.

DISCUSSION

In this study, the JSPE-S scores of Czech medical students were noticeably lower than those reported in some studies (Hojat et al., 2001; Alcorta-Garza et al., 2005; Hojat, 2007; Kataoka et al., 2009; Roh et al., 2010; Rahimi-Madiseh et al., 2010; Fjortoft et al., 2011; Tavakol et al., 2011; Magalhães et al., 2011). We can unfortunately only speculate about the cause of this finding since many potential variables, e.g. medical curriculum focus, cultural differences, religious persuasion, as well as the rather strongly formulated and social desirability laden statements of the instrument may be influencing the outcome.

Many studies have reported that women have higher empathy than men (Hojat et al., 2002a,b; Alcorta-Garza et al., 2005; Hojat, 2007; Chen et al., 2007; Fjortoft et al., 2011; Magalhães et al., 2011; Tavakol et al., 2011). In our study women had higher average JSPE-S score than men but the difference was not statistically significant. Similar findings were reported in other studies (Hojat et al., 2002a,b; Kliszcz et al., 2006; Di Lillo et al., 2009; Rahimi-Madiseh et al., 2010).

The internal consistency of the Czech JSPE-S scale (0.76) is comparable with values reported for Portuguese 0.77 (Magalhães et al., 2011) and Mexican 0.74 (Alcorta-Garza et al., 2005) medical students but lower than that estimated for American

physicians 0.80 (Hojat, 2007), English pharmacy students 0.84 (Fjortoft et al., 2011), Korean 0.84 (Roh et al., 2010), and Japanese 0.80 (Kataoka et al., 2009) students.

Exploratory factor analysis based on responses from the total sample brought support for the existence of three components. Probably the best defined is the second factor "Compassionate care" (reflects feelings and emotion associated with understanding, which represents overlap between cognitive and emotional approach) and appears consistently in other studies (Cronbach´s $\alpha = 0.75$; average items intercorrelation 0.25; range 0.01 – 0.70). The first factor, "Perspective taking" (attempt to understand the concern of the patient) is also relatively well defined and reported by other authors (Cronbach´s $\alpha = 0.76$; average items intercorrelation 0.34; range 0.17 – 0.57) The third factor, "Empathetic understanding" (standing in the patient's shoes-thinking like the patient), is arguably most questionable as it accounts for less than the recommended 10% of variance, the intercorrelations of the factor's five indicators are rather low (range 0.01 – 0.38), and scale reliability is below an acceptable level (Cronbach´s $\alpha = 0.50$). As the exploratory factor analysis is a predominantly descriptive and data-driven technique the findings should be deemed provisional until cross-validated.

The results of our cross-sectional study, which suggest that empathy decreases during medical training in medical school, are consistent with previous studies (Diseker et al., 1981; Hojat et al., 2004, 2009; Woloschuk et al., 2004; Chen et al., 2007; Rahimi-Madiseh et al., 2010; Neuman et al., 2011). The higher empathy scores during the first four semesters, when theoretical subjects are taught, may reflect lack of experience with rather painful medical reality to which are students exposed later. Nevertheless, in some studies (Kataoka et al., 2009; Magalhães et al., 2011; Neumann et al., 2011) the trend was not supported.

CONCLUSION

The findings indicate that the Czech version of the JSPE-S scale is an instrument that is psychometrically sound enough to be used for the assessment of attitudes towards the role of empathy in a medical context. Female students have higher scores than male students, although the difference was not statistically significant. The JSPE-S empathy mean scores of Czech medical students are lower than those reported in most studies, and noticeably decline after two years of medical study, which may indicate that this prominent goal of medical education is rather underachieved.

There are several limitations of our study. Firstly, we are measuring attitude toward the role of the empathy in doctor-patient relation which may differ substantially from actual behavior. Secondly, as our study design is cross-sectional, there is very strong possibility of cohort effects, students' contact with patients and practicing physicians vary in frequency and quality depending on the year of study. Thirdly, the survey was conducted at one Czech and at one Moravian medical school only, which potentially limits the external validity of our findings.

REFERENCES

Alcorta-Garza, A., González-Guerrero, J. F., Tavitas-Herrera, S. E., Rodríguez-Lara, F. J, Hojat, M. (2005): Validity and reliability of the Jefferson Scale of Physician Empathy in Mexican medial students. Salud Mental, 28, 57-62.

Cohen, J. (1988): Statistical power analysis for behavioral sciences. Lawrence Erbaum Associates, Hillsdale, New Jersey, 2nd ed.

Chen, D., Lew, R., Hershman, W., Orlander, J. (2007): A Cross-sectional measurement of medical student empathy. Gen Intern Med 22, 1434-1438.

Di Lillo, M., Cicchetti, A., Lo Scalzo, A., Taroni, F., Hojat, M. (2009): The Jefferson Scale of Physician Empathy: Preliminary psychometrics and group comparisons in Italian physicians. Acad Med 84, 1198-1202.

Diseker, R. A., Michielutte, R. (1981): An analysis of empathy in medical students before and following clinical experience. Acad Med 56, 1004-1010.
Fjortoft, N., Van Winkle, L., Hojat, M. (2011): Measuring empathy in pharmacy students. Am J Pharm Educ 75, 1-6.
Hemmerdinger, J. M., Stoddart, S. Dr., Lilford, R. J. (2007): A systematic review of tests of empathy in medicine. BMC Medical Education 7, 1-8.
Hojat, M. (2007): Empathy in patient care: Antecedents, development, measurement, and outcomes. New York, NY, Springer.
Hojat, M., Mangione, S., Nasca, T. J., Cohen, M. J. M., Gonnella, J. S., Erdmann, J. B., Veloski, J., Magee, M. (2001): The Jefferson Scale of Physician Empathy: Development and preliminary psychometric data. Educ Psychol Meas 61, 349-365.
Hojat, M., Gonnella, J. S., Mangione, S., Nasca, T. J., Veloski, J. J., Erdmann, J. B., Callahan, C. A., Magee, M. (2002a): Empathy in medical students as related to academic performance, clinical competence, and gender. Med Edu 36, 522-527.
Hojat, M., Gonnella, J. S., Nasca, T. J., Mangione, S., Vergare, M., Magee, M. (2002b): Physician empathy: Definition, components, measurement, and relationship to gender and specialty. Am J Psych 159, 1563-1569.
Hojat, M., Mangione, S., Nasca, T. J., Rattner, S., Erdmann, J. B., Gonnella, J. S., Magee, M. (2004): An empirical study of decline in empathy in medical school. Med Educ 38, 934-941.
Hojat, M., Vergare, M. J., Maxwell, K., Brainard, G., Herrine, S. K., Isenberg, G. A., Veloski, J., Gonnella, J. S. (2009): The devil is in the third year: A longitudinal study of erosion of empathy in medical school. Acad Med 84, 9, 1182-1191.
Kataoka, H., Koide, N., Ochi, K., Hojat, M., Gonnella, J. S. (2009): Measurement of empathy among Japanese medical students: Psychometrics and score differences by gender and level of medical education. Acad Med 84, 1192-1197.
Kliszcz, J., Nowicka-Sauer, K., Trzeciak, B., Nowak, P., Sadowska, A. (2006): Empathy in health care providers–Validation study of the Polish version of the Jefferson Scale of Empathy. Adv Med Sci 51, 219-225.
Kožený, J., Tišanská, L. (2011): Attitudes of students of medicine toward the role of empathy in medical context: differences by gender and level of medical studies. (In Czech.) Československá psychologie, 55, 126-138.
Magalhães, E., Salgueira, A., Costa, P., Costa, M. J. (2011): Empathy in senior year and first year medical students: a cross-sectional study. BMC Med Edu 11, 52.
Neumann, M., Edelhäuse, F., Tauschel, D., Fischer, M. R., Wirtz, M., Woopen, Ch., Haramati, A., Scheffer, Ch. (2011): Empathy decline and its reasons: A systematic review of studies with medical students and residents. Acad Med 86, 996-1009.
Pedersen, R. (2008): Empirical research on empathy in medicine - A critical review, Patient Education and Counseling 76, 3, 2009, 307-322.
Rahimi-Madiseh, M., Tavakol, M., Dennick, R., Nasiri, J. (2010): Empathy in Iranian medical students: A preliminary psychometric analysis and differences by gender and year of medical school. Med Teach 32, 471-478.
Roh, M., Hahm, B., Lee, D., Suh, D. (2010): Evaluation of empathy among Korean medical students: A cross-sectional study using the Korean version of the Jefferson Scale of Physician Empathy. Teach Learn Med 22, 3, 167-171.
Spiro, H. (1992): What is empathy and can it be taught? Ann Inter Med 116, 843-846.
Tavakol, S., Reg, D., Tavakol, M. (2011): Psychometric properties and confirmatory factor analysis of the Jefferson Scale of Physician Empathy. BMC Med Educ 11, 54.
Tišanská, L., Kožený, J. (2012a): Development and psychometric analysis of Empathy questionnaire - DE14. (In Czech.) Československá psychologie, 56, 157-166.
Tišanská, L., Kožený, J. (2012b): Measuring empathetic sensitivity of Czech physicians. (In Czech.) Československá psychologie, 56, 518-528.
Woloschuk, W., Harasym, P. H., Temple, W. (2004): Attitude change during medical school: A cohort study. Med Edu 38, 522-534.

ABSTRAKT

Odhad empatie českých studentů medicíny: průřezová studie

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Záměr. Cílem studie bylo ověření psychometrických parametrů české verze Jeffersonské škály empatie (JSPE-S) na podkladě výpovědí českých studentů medicíny a testování diferencí z hlediska pohlaví, délky studia medicíny a místa studia.

Soubor a procedura. Soubor tvořilo 725 studentů medicíny 3. lékařské fakulty UK a 871 studentů Fakulty medicíny UPOL. Studie byla

průřezová a odpovědi byly získány od studentů všech šesti ročníků.

Výsledky. Explorační faktorová analýza přinesla podporu pro existenci tří ortogonálních faktorů „Perspective taking" (přebírání perspektivy), „Compassionate care" (soucitná péče), „Empathetic understanding" (empatické porozumění) a vnitřní konzistence stupnice byla pro celý soubor 0,76. Efekt pohlaví a místa studia nebyl statisticky významný. Výše JSPE-S skórů českých studentů statisticky i klinicky významně klesala v prvních dvou letech studia a zůstala beze změn do konce šestého ročníku. Nálezy obecně podpořily konstruktovou validitu i vnitřní konzistenci české verze nástroje.

Omezení studie. Postoje k roli empatie se mohou výrazně lišit od skutečného chování, vzhledem k průřezovému plánu studie je zde možný kohortový efekt, data byla získána pouze na dvou lékařských fakultách.