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Psychometric properties of the Jefferson Scale of Empathy-Health Professional Student's version: An Italian validation study with nursing students

Paola Montanari, RN, PhD,[1] Cristina Petrucci, RN, MSN, PhD,[1] Silvia Russo, PhD,[2] Ian Murray, RN, MPH, BEd,[3] Valerio Dimonte, RN, MSN[4] and Loreto Lancia, RN, MSN[1]

[1]*Department of Health, Life and Environmental Sciences, University of L'Aquila, L'Aquila, Italy,* [2]*Youth & Society, Örebro University, Sweden,* [3]*School of Nursing, Midwifery and Health, Robert Gordon University, Aberdeen, Scotland (UK) and* [4]*Department of Public Health and Pediatric Sciences, University of Torino, Italy*

Abstract

This methodological study was conducted to test the psychometric properties of the Jefferson Scale of Empathy-Health Professional Student's version (JSE-HPS), in a convenience sample of 797 Italian nursing students and to describe their empathic engagement. Data were subjected to exploratory and confirmatory factor analysis, test–retest, correlation analysis, *t*-test, and analysis of variance method. Principal component factor extraction with Oblimin rotation on the first half of the sample was conducted. The analysis suggested a three-factor solution for 14 items: "compassionate care/emotional engagement," "perspective-taking," and "standing in the patient's shoes." Confirmatory factor analysis on the second half of the sample showed good fit indexes for the 14-item solution, indicated by the exploratory factor analysis, and the 20 item solution of the scale, with the exception of one item. Test–retest correlation was 0.50 ($P < 0.001$) for the overall scale. Results from group comparisons and correlations are also provided and discussed. The Italian version of the JSE-HPS is a psychometrically sound tool. The translated 20-item solution is also suitable to carry out cross-cultural comparisons.

Key words

empathy, instrument development, Jefferson Scale of Empathy, nursing students, undergraduate nursing, Italy.

INTRODUCTION

The importance of an empathic approach by healthcare professionals in the healthcare setting has been stressed by healthcare systems, services, policies, and in the educational goals of healthcare professionals' courses of study (Hojat, 2007). The clinical encounter between a patient and a healthcare professional is the core activity of medical and nursing care with empathy considered a basic component of all assistance relationships (Yu & Kirk, 2009). Empathy has been demonstrated to enhance the professional-patient relationship and to improve both patient and professional

Correspondence address: Paola Montanari, Department of Health, Life and Environmental Sciences, University of L'Aquila, Edificio Delta 6 – Via San Salvatore, 67100 Coppito (L'Aquila), Italy. Email: paola.montanar1@alice.it

Present addresses: Paola Montanari, Department of Health, Life and Environmental Sciences, University of L'Aquila, Edificio Delta 6 – Via San Salvatore, 67100 Coppito (L'Aquila), Italy. Email: paola.montanar1@alice.it.

satisfaction (Reynolds *et al.*, 1999; Reynolds, 2000; McMillan & Shannon, 2011). It can assist the creation of an interpersonal climate that is free of defensiveness and enables individuals to talk about their perceptions of need (Mercer & Reynolds, 2002). Moreover, empathy is considered an essential prerequisite for effective nursing practice and to holistically understand the patient's perspective (Reynolds, 2000). High empathy levels in nursing and medical practice are likely to facilitate positive health and clinical outcomes for patients, such as reduction in physiological distress, improved self-concept, and low occurrence of complications with a measureable reduction of anxiety and depression (Reynolds, 2000; Del Canale *et al.*, 2012). Patients may not be able to describe the concept of empathy, but they are able to determine whether they have been treated with empathy (Brunero *et al.*, 2010). Furthermore, patients seek a caring professional attitude from all of the healthcare professionals they meet (Williams & Stickley, 2010; Griffiths *et al.*, 2012).

Descriptions of empathy in the literature define it either as a cognitive attribute mainly involving understanding another person's concerns or an affective or emotional characteristic

primarily involving feeling another person's pain and suffering. However, some authors describe empathy as both an affective and cognitive attribute (Hojat, 2007).

Nurse educators need to promote the development of empathy in future nurses as a priority, starting from basic education (Reynolds, 2000). To date, empathy has not been proven to a stable personality trait; thus, there is a wide range of possible methods of exploring educational programs designed to enhance empathy. The extent to which the empathic engagement can be enhanced in a particular person depends on the interaction of several factors: individual constitutional makeup, early life experiences, quality of past and current attachment relationships, motivation, quality and type of background environment, and exposure to specific educational programs (Hojat, 2007).

REVIEW OF THE LITERATURE

Several instruments developed to evaluate empathy levels in nursing and medical contexts are described in the literature (Pedersen, 2009; Yu & Kirk, 2009). The Jefferson Scale of Empathy (JSE) was recognized as a tool with a sufficient evidential base to support its use (Yu & Kirk, 2009). It was developed to meet the increasing need to assess empathy of students and practitioners from healthcare settings. The Jefferson Scale of Empathy-Health Professional Student's version (JSE-HPS) was specifically designed to be administered to healthcare professional students, including nursing students (Hojat, 2007).

The scale, a 20 item self-administered instrument, was originally designed to measure empathy as a one-dimensional construct; however, factor analyses showed that it assesses three main subfactors: "perspective-taking," "compassionate care/emotional engagement," and "standing in the patient's shoes" (Hojat, 2007). Cronbach's Alpha for reliability is reported to range between 0.80 and 0.89 for medical students, physicians, and nurses samples. The JSE, in its various versions, showed a very strong reliability, with a Pearson's reliability coefficient of 0.92 if the instrument was administered within a short period of time, such as two weeks from the first administration (Hsiao *et al.*, 2013) or a weaker reliability, with a Pearson's reliability coefficient of 0.65 if administered within longer periods, such as two to four months from the first administration (Hojat *et al.*, 2002; Hojat, 2007).

The majority of studies that used the JSE in order to assess empathy in physicians, nurses, and healthcare professional students across countries were validation studies and showed that, in general, women outscored men (Hojat *et al.*, 2004; Ouzouni & Nakakis, 2012; Wen *et al.*, 2013, but see also Di Lillo *et al.*, 2009; Rahimi-Madiseh *et al.*, 2010; McKenna *et al.*, 2012 for no statistically significant gender differences). The majority of the studies reported no statistically significant differences as far as age groups are concerned (McKenna *et al.*, 2012; Wen *et al.*, 2013).

Respondents with a humanistic background reported a higher empathy level; this is true both for the medical specialty (person orientated *vs* technical orientated) and for the educational background prior to nursing or medical school (Hojat *et al.*, 2002; Hojat, 2007).

Empirical evidence is mixed upon the relationship between empathy and clinical experience; while some studies supported the idea that empathy is positively related to practice experience and students' progress in medical and healthcare professional schools (Kataoka *et al.*, 2009; Ward *et al.*, 2009; Roh *et al.*, 2010), some others found that empathy tends to decrease with stressful clinical experiences (Hojat *et al.*, 2009; McKenna *et al.*, 2012; Ward *et al.*, 2012), possibly supporting the idea that trainee distress may be a key element for empathy decline (Neumann *et al.*, 2011). These discrepancies seem mainly linked to a few factors, such as cross-sectional designs, different lengths of observations, cultural differences between countries, and the differences concerning educational programs (Yu & Kirk, 2009; Kuo *et al.*, 2012).

Many of the studies carried out in different countries used the JSE and reported that the instrument is a psychometrically sound tool to assess empathy in respondents of the healthcare setting. However, cultural differences might affect the comprehensibility of the scale's items because they are strongly related to the way nursing and medical care is perceived from healthcare students and professionals in each country (Paro *et al.*, 2012; Williams *et al.*, 2013). For example, a strong paternalism in the healthcare system could have an influence on certain aspects of taking charge of the patient and his family (Paro *et al.*, 2012; Shariat & Habibi, 2013).

Researchers' efforts toward the comprehension of empathic engagement among nursing students are to maintain empathy at a high level during and after basic education, as well as strengthen it through specific educational programs. As the first step to accomplishing this goal is having a specifically sound instrument, the main purpose of this study was to validate the JSE-HPS in a sample of undergraduate nursing students attending Turin University Nursing School, Italy, and to describe their empathic engagement.

Having a validated instrument will allow Italy to contribute to the international debate concerning empathy development in nursing students.

METHODS

Study design

A methodological study was conducted between March 2011 and May 2012 to test the psychometric properties of the JSE-HPS in an Italian nursing student population and to evaluate the relationship of empathy scores and some socio-demographic and career characteristics.

Cross-cultural adaptation

Cross-cultural adaptation was the first step of this study and took place between March 2011 and September 2011. Forward translation of the original JSE-HPS into Italian was conducted independently by three people (two nurses and one psychology researcher). A synthesis and harmonization of the three translations was conducted (Beaton *et al.*, 2000).

Two English mother tongue teachers whose background was not in nursing independently performed translation back into the original language. Back translations were congruent with the original English version of the JSE-HPS.

An expert committee reviewed all of the translations to reach semantic, idiomatic, experiential, and conceptual equivalence (Beaton *et al.*, 2000).

Pre-test for content validity

A pre-test was carried out with 93 nursing students of the Turin University Nursing School in October 2011. The students involved considered the scale comprehensible.

Instrumentation

Each participant completed a socio-demographic and career data collection form and the JSE-HPS. Specifically, participants indicated their gender, age, type of secondary school they attended (available response options were 1 = classical, 2 = social, foreign languages, artistic, psycho-pedagogic high school, 3 = scientific high school, 4 = technical and professional high school), how many books they read in the last three months (available response options were 1 = none, 2 = one, 3 = two, 4 = three, and 5 = more than three), and their final high-school evaluation mark (ranging from 60–100, mean value of 75.62, standard deviation [SD] = 10.66).

The JSE-HPS version is a self-administered scale, containing 20 items. The scale has a seven-point Likert response scale (1 = strongly disagree to 7 = strongly agree). The scale's scores can range from a minimum of 20 to a maximum of 140. No cut-off score has been established (Hojat, 2007; Ward *et al.*, 2009; Fields *et al.*, 2011).

Participants

A convenience sample of all first, second, and third year nursing students (*n* = 860) from three different geographical centres of the Turin University Nursing School were involved in the study. Of these students, 797 completed the questionnaire, with a response rate of 92.7%. Out of the total sample, 74% (*n* = 590) were women and 90.7% (*n* = 723) were Italian students. The mean age was 22.63 (SD = 4.77, range: 18–48). Forty percent (*n* = 316) were first year students, 29% (*n* = 234) second year, and 31% (*n* = 247) third year students. At the time of the first administration, students in the first year were new to the nursing context and had no clinical experience. Students of the second and third years had clinical experience ranging from two to six clinical placements.

Data collection

Participants completed the socio-demographic and career data collection form and the JSE-HPS in March 2012 during their regular classes. At the beginning of May 2012, 566 students, who were in the classroom at the moment of the administration, completed the JSE-HPS for a second time in order to perform the test–retest evaluation. Two weeks to one month is the generally accepted time for retesting (DeVon *et al.*, 2007). In the current study, a two month interval was adopted, as the teaching and placement plan was very complex and the scheduled time for the second administration had to be when students where at the Nursing School for their classes rather than during clinical placements. As a rule, the longer the time-gap, the lower the reliability.

Ethical considerations

The approval to use the JSE-HPS for the validation process was obtained from Dr. Mohammadreza Hojat, the author of the original scale. The study was approved by the Ethical Committee of L'Aquila University and from the Turin University Nursing School. A letter of presentation of the study was given to the students involved in order to explain the main aim of the research. Students participated on a voluntary basis; informed consent was assumed if students decided to take part in the study completing both the instruments during the first administration and the JSE-HPS during the second. Data were processed anonymously.

Statistical analyses

Descriptive analyses were performed for all items. Data extracted from the JSE-HPS were subjected to both exploratory factor analysis (EFA, to examine the underlying construct of the scale among the sample) and confirmatory factor analysis (CFA). The first phase involved EFA to assess the underlying factor structure and refine the item pool. It is suggested that EFA is followed by CFA using a different sample (Henson & Roberts, 2006): the total sample (*n* = 797) was randomly split in two halves (*n* first half = 399; *n* second half = 398). In this way, CFA permitted the evaluation of the EFA-informed factor structure. Correlational analyses, *t*-test, and analysis of variance were used to perform group comparisons. To evaluate the stability of the instrument, test–retest was used and intraclass correlation coefficient (ICC) was calculated. Missing data were replaced with the mean. If a respondent failed to answer more than four items, the form was considered incomplete and excluded from analyses, as suggested by the author of the scale. Data were analysed using SPSS software version 19.0 and Mplus 7.1.

RESULTS

Descriptive statistics and reliability

The total score of the scale was computed as the sum of all of the items. In our sample, empathy scores ranged between 44 and 140, with a mean value of 111.81 (SD = 11.75). The internal consistency of the scale was satisfactory, Cronbach's α = 0.78. The ICC between the first and second administration was 0.50 (*P* < 0.001) for the 566 nursing students that completed the first and second administration of the scale.

Exploratory factor analysis

Principal component factor extraction with Oblimin rotation was used to explore factor structure of this version of the

scale. Kaiser's measure of sampling adequacy was used prior to factor extraction and resulted in an overall index of 0.86, confirming the adequacy of the data for factor analysis. The Bartelett's test for sphericity showed that the intercorrelation matrix was factorable ($\chi^2_{(190)} = 1800.042$, $P < 0.001$). The appropriate number of factors to retain for rotation was determined after a scree test that suggested a three-factor solution that was consistent with factor analysis conducted in previous studies (Ward *et al.*, 2009; McMillan & Shannon, 2011). Data reported in Table 1 show the factor structure and item statistics.

These three factors, "emotional engagement/compassionate care," "perspective-taking," and "standing in patient's shoes," accounted for 41.64% of the total variance. Factor coefficients of 0.40 or greater were required for the interpretation of the factor structure (Tavakol *et al.*, 2011). Items 16, 20, 2, 10, and 13 had double factor loadings on the first and second factor. Item 18 did not reach the 0.40 cut-off requested in any of the three factors. These items were, therefore, excluded from the scale.

Confirmatory factor analysis

Confirmatory factor analysis was then performed on the second half of the sample in order to test the three-factor model that emerged from EFA, that is to say a 14-item solution (robust maximum likelihood estimator (MLR)). Fit indexes indicated that the sample fitted the model tested (see Table 2 for fit indexes and Fig. 1 for loading coefficients and correlations among factors). To strengthen the analysis, a new CFA was performed (MLR estimator) in order to test the translated 20-item solution. Again, fit indexes were reasonable, even if slightly lower than those obtained with the 14-item scale (see Table 2 for fit indexes and Fig. 2 for loading coefficients and correlations among factors). In line with a recent study (Shariat & Habibi, 2013), item 18 had a low and non-significant loading coefficient ($P = 0.280$).

Group comparisons

Group comparisons of empathy level were conducted for all socio-demographic characteristics collected within the questionnaire. Only statistically significant differences are reported in this section. Even if analyses showed that some items had double loadings, it was decided to report results by comparing mean levels of empathy assessed with the translated 20-item solution scale in order to facilitate cross-cultural comparisons with previous studies using the JSE-HPS. Analogous results were obtained when considering the 14 and 19-item solutions.

Gender

A statistically significant difference was found between women and men ($t_{(286.306)} = -5.723$ $P < 0.001$, Levene's test was statistically significant $F = 25.303$ $P < 0.001$; thus equal variance was not assumed). Male students ($n = 207$) obtained a mean score of 107.25 (SD = 14.10), while female students

($n = 590$) obtained 113.39 (SD = 10.37), with a mean difference of −6.14.

Type of secondary school prior to nursing course

The type of secondary school variable was coded into three groups. A statistically significant difference was observed for the type of secondary school attended prior to commencing the nursing course, $F(4, 792) = 3.997$, $P = 0.003$. A Bonferroni posthoc test indicated a statistically significant difference between nursing students that attended classical, social, foreign languages, artistic, psycho-pedagogic high schools ($n = 264$) with a mean score of 114.29 (SD = 8.81) and the students who attended a scientific high school ($n = 418$) with a mean score of 111.10 (SD = 11.92) ($P = 0.045$), or a technical and professional high school ($n = 115$) with a mean score of 110.18 (SD = 13.58) ($P = 0.047$). Respectively, the mean difference was 3.18 (SD = 1.11) and 4.11 (SD = 1.45).

Reading books during leisure time

The reading habits variable was coded in two groups. A statistically significant difference was observed among those students who stated they read two or more books ($n = 519$) and those who stated that they had read only one or no books ($n = 278$) in the previous six months ($t_{(507.66)} = 3.501$, $P < 0.001$, Levene's test was not statistically significant $F = 5.819$, $P < 0.05$; thus, equal variance was not assumed). The first group obtained a mean score of 112.91 (SD = 11.11), whereas the second obtained 109.76 (SD = 12.63) with a mean difference of 3.15.

Correlation analysis

There was a positive, but not statistically significant, correlation between empathy and age ($r = 0.031$, $P = 0.378$) for the translated 20-item scale. There was a positive and statistically significant correlation between empathy and evaluation marks at the end of secondary school ($r = 0.177$, $P < 0.001$) for the translated 20-item scale, indicating that top students tend to have a higher level of empathy. Analogous results were obtained with the 14 and 19-item solutions.

DISCUSSION

The choice to validate the JSE–HPS in the Italian context was made because there was no Italian instrument specifically addressed to healthcare professional students including nursing students (Hojat, 2007; Ward *et al.*, 2009; Fields *et al.*, 2011). Indeed, the only available Italian validation of the JSE version for Health Professionals (JSE-HP) was conducted with a sample of physicians (Di Lillo *et al.*, 2009) and the validation procedure was limited to an exploratory factor analysis. The present study builds on the first Italian validation in two ways. First, it was demonstrated that the JSE-HPS-Italian version is a psychometrically sound instrument for assessing empathy in Italian nursing students, adding a new instrument that can be used in healthcare education settings. Second, analyzing the psychometric properties of the

Table 1. Rotated factor loadings and item statistics

Item	Factor structure*			Item statistics			
	F1	F2	F3	Min	Max	Mean	SD
I believe that emotion has no place in the treatment of medical illness (14)	**.71**	−.09	−.05	1	7	1.7	1.3
Patients' illnesses can be cured only by targeted treatment; therefore, healthcare providers' emotional ties with their patients do not have a significant influence in treatment outcomes (11)	**.70**	−.21	−.08	1	7	1.9	1.2
Healthcare providers' understanding of the emotional status of their patients, as well as that of their families, is one important component of the healthcare provider-patient relationship (16)	**−.66**	**−.52**	−.13	1	7	6.1	1.1
Asking patients what is happening in their personal lives is not helpful in understanding their physical complaints (12)	**.63**	.01	.08	1	7	2.1	1.3
Attention to patients' emotions is not important in patient interviews (7)	**.63**	−.14	−.04	1	7	1.4	1.2
Attentiveness to patients' personal experiences does not influence treatment outcomes (8)	**.59**	−.16	.24	1	7	2.1	1.4
I believe that empathy is an important factor in patients' treatment (20)	**.58**	**−.44**	−.06	1	7	6.4	1.0
I do not enjoy reading non-medical literature or the arts (19)	**.50**	−.06	−.09	1	7	2.0	1.6
Healthcare providers' understanding of their patients' feelings and the feelings of their patients' families do not influence treatment outcomes (1)	**.47**	−.09	.14	1	7	1.8	1.5
Understanding body language is as important as verbal communication in a healthcare provider-patient relationship (4)	**.46**	−.36	−.14	1	7	6.2	1.2
Patients feel better when their healthcare providers understand their feelings (2)	**.45**	**−.43**	−.36	1	7	6.3	1.1
Healthcare providers should try to stand in their patients' shoes when providing care to them (9)	.22	**−.74**	.05	1	7	5.5	1.5
Healthcare providers should try to think like their patients in order to render better care (17)	.04	**−.70**	−.01	1	7	4.8	1.5
Patients value a healthcare provider's understanding of their feelings, which is therapeutic in its own right (10)	**.46**	**−.60**	−.19	1	7	5.7	1.2
Empathy is a therapeutic skill without which a healthcare provider's success is limited (15)	.34	**−.53**	−.15	1	7	5.7	1.5
Healthcare providers should try to understand what is going on in their patients minds by paying attention to non-verbal cues and body language (13)	**.51**	**−.52**	−.13	1	7	6.3	1.1
A healthcare provider's sense of humor contributes to a better clinical outcome (5)	−.02	**−.44**	−.03	1	7	4.4	1.5
Because people are different, it is difficult to see things from patients' perspectives (6)	.06	.06	**.79**	1	7	4.0	1.5
It is difficult for a healthcare provider to view things from patients' perspectives (3)	.08	−.08	**.74**	1	7	3.9	1.2
Healthcare providers should not allow themselves to be influenced by strong personal bonds between their patients and their family members (18)	−.02	.04	.39	1	7	4.9	1.5
Eigenvalue	4.44	3.04	1.67				
% of variance	24.87	9.15	7.62				

*F1, emotional engagement/compassionate care; F2, perspective taking; F3, standing in patient's shoes.

Table 2. Goodness of fit indices for the three-factor model of the JSE-HPS

Model	χ^2	df	*P*	CFI	TLI	RMSEA
14 item scale	89.612	74	0.1044	0.96	0.96	0.02
20 item scale	245.320	167	0.0001	0.93	0.92	0.03

JSE-HPS, Jefferson Scale of Empathy-Health Professional Student's version; CFI, Comparative Fit Index; TLI, Tucker-Lewis Index; RMSEA, Root Mean Square Error of Approximation.

scale through both exploratory and confirmatory factor analyses, as suggested in the literature (Henson & Roberts, 2006), provides solid results about the scale dimensionality. A three-factor structure was confirmed both from EFA and CFA, but the distribution of the first and second factors is inverted when compared with the original scale (Hojat, 2007; Ward *et al.*, 2009). The reason is probably at a cultural level of respondents (Paro *et al.*, 2012). Findings suggested that two versions of the JSE-HPS can be used: the 14-item solution and the 20-item solution with the exception of item 18, that is, "*Healthcare providers should not allow themselves to be influenced by strong personal bonds between their patients and their family members.*" (JSE-HPS) Again, reasons could probably be investigated among cultural patterns of respondents and around the meaning of this item when translated in the Italian language and contextualized in the patient care setting, for example, when involving the patient's family in making important decisions about the patient. Further study is suggested on the meaning of this item and its comprehensibility (Paro *et al.*, 2012; Williams *et al.*, 2013). In order to allow cross-cultural comparison, the translated 20-item solution is suggested, rather than the 14-item solution.

In this study, the test–retest resulted in an ICC of 0.50 (*P* < 0.001), showing a modest reliability of the scale. It must be noted that there was a two month time period between the tests; during this time students attended a period of clinical placement, regular classes, and other activities that could have influenced their answers. Test–retest reliability is relevant for cognitive and trait scales that are not expected to change over time. The definition of empathy adopted for the development of all kinds of JSE is: "*a predominantly cognitive (rather than emotional) attribute that involves an understanding (rather than feeling) of experiences, concerns and perspectives of the patient, combined with a capacity to communicate this understanding*" (Hojat, 2007, p. 80). It is not clear if empathy is amenable to change over time, or is enhanced by educational programs, or if it is a stable personality trait. It is also not clear if empathy has the same characteristics across countries and different settings. The assumption during the development of all types of JSE is that empathy is neither a highly stable personality trait nor a state that can be changed without effort (Hojat, 2007). Test–retest was performed in the current study with results suggesting that perhaps something happened to students in the two-month period between the first and second tests that led them to give different answers.

Presenting results from group comparisons and correlations allowed the reader to get a better insight of participants'

patterns (Kutlu *et al.*, 2012). In line with previous findings, women outscored men (Fields *et al.*, 2011; Magalhães *et al.*, 2011; Hasan *et al.*, 2013). The extent of the gender difference in a self-reported measure, such as the JSE-HPS, because women perceive themselves as more empathic, is not clear (Hojat, 2007).

Nursing students who attended a social, foreign languages, artistic, or psycho-pedagogic high school in comparison with those who attended a technical and professional or scientific high school obtained a higher empathy score, as did students who are used to reading more in comparison with those who are not used to reading (Hojat, 2007). This is interesting because reading and working on narratives and poetry is also considered an effective strategy to foster empathy during nursing education (Stepien & Baernstein, 2006; Hojat, 2009). It is possible that students who are used to reading literature for educational or leisure purposes develop a higher empathy level that remains evident during their nursing educational path. A retrospective observational study recently conducted in Italy showed that the worst academic performances were observed in students who attended technical and professional high schools compared with students from humanistic high schools (Lancia *et al.*, 2013). It would be interesting, in the future, to understand which kind of correlation does exist between the type of secondary school, empathy level, and academic performance of nursing students.

No statistically significant difference was observed in empathy scores when considering the year level of undergraduate nursing course in which a student was in, which may be attributed to the baseline characteristics of the sample (Rahimi-Madiseh *et al.*, 2010). Indeed, discrepancies can be found in literature as few studies with medical or nursing students found empathy levels increasing through the years of the courses (Kataoka *et al.*, 2009; Ward *et al.*, 2009; Roh *et al.*, 2010), whereas the majority of the studies observed a decrease during the educational path (Neumann *et al.*, 2011; Ward *et al.*, 2012; Shariat & Habibi, 2013). There is an urgent need to understand the reasons for empathy decline during the educational path; is it possible that students are not supported to be empathic during clinical placement? Finally, the secondary school final evaluation mark was positively correlated with empathy levels. It would be of interest to explore further whether this correlation remains positive during the entire nursing course in a longitudinal study, in order to understand if top students have a stable higher empathic engagement.

Limitations

The main limitation of the study is the cross-sectional method in which data concerning empathy scores was collected and analyzed in relation to the curriculum and personal characteristics of the sample. In the future it will be useful to gather information in a longitudinal way in order to evaluate empathy trends and correlations with curricula progression. Furthermore, it will be useful to plan a multicentric study design in order to include students from all over the country. As the JSE-HPS was developed to be administered to all healthcare professional students, it is prudent to carry out
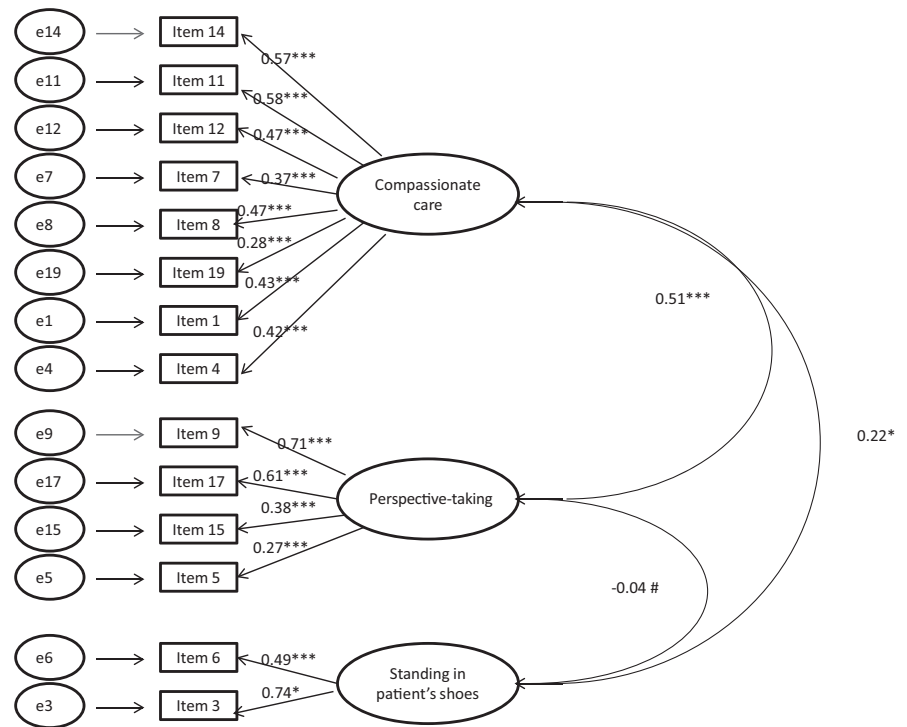
Figure 1. Confirmatory factor analysis for the reduced version of the scale (14 items). Standardized loadings are displayed. ***$P < .001$; **$P < .01$; *$P < .05$; # indicates no significant paths.
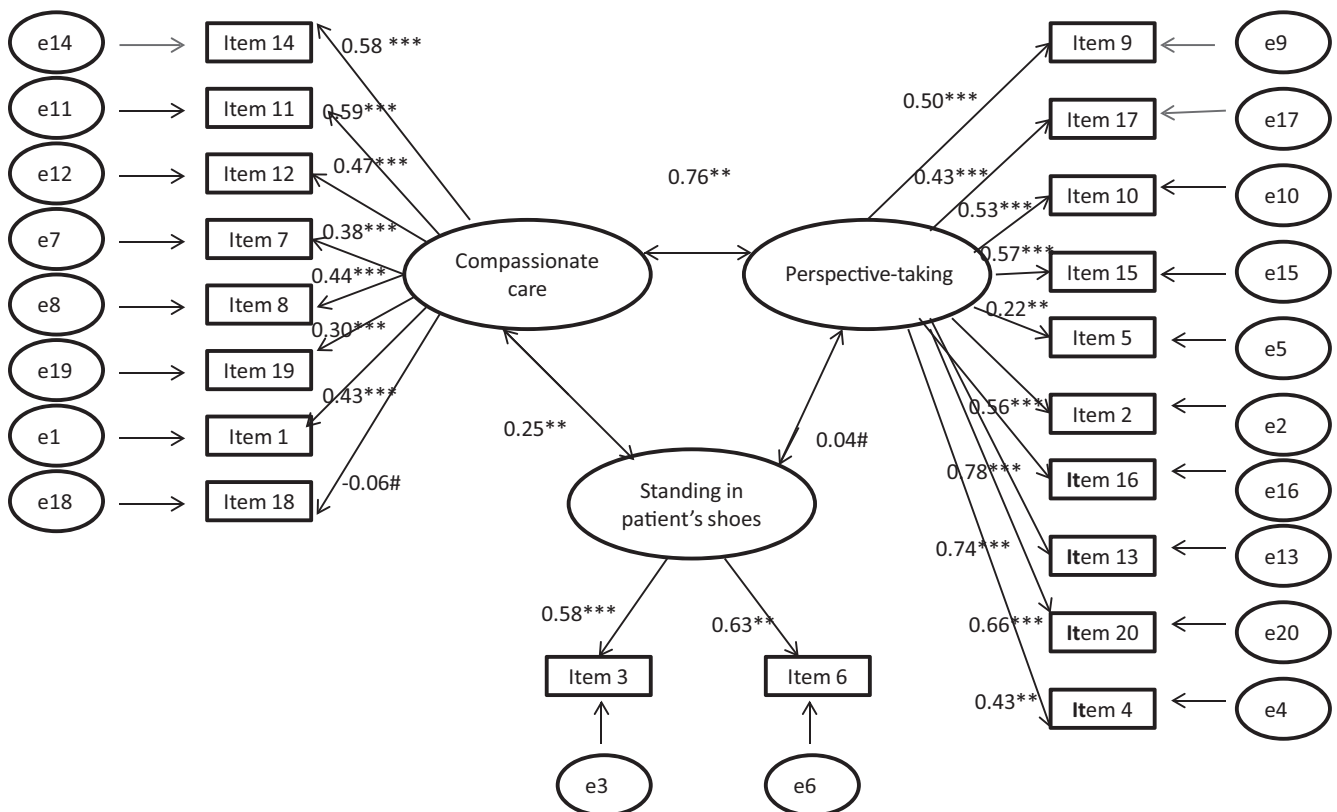

Figure 2. Confirmatory factor analysis for the full version of the scale. Standardized loadings are displayed. ***$P < .001$; **$P < .01$; *$P < .05$; # indicates no significant paths.

studies involving health professional students other than nursing students.

CONCLUSIONS

The Italian version of the JSE-HPS is psychometrically sound for use with Italian nursing students. Differences in factor loadings and distribution can be explicated by cultural differences between populations in which the scale has been tested. In order to allow international comparison, the translated 20-item solution is recommended. Group comparisons suggest some preliminary characteristics concerning the empathic engagement of this specific population of nursing students that need to be further explored in a longitudinal way.

Monitoring empathy level with a psychometrically sound instrument in nursing education is pivotal, as empathy is one of the key elements of engaging with patients and their caregivers. It is important that not only empathy levels remain stable or increase during the study path, but also that new teaching strategies can be applied in the clinical setting in order to strengthen empathy. Thus, the importance of further research into the reasons why there is an apparent decrease in empathy levels following clinical placement is highlighted. Studying empathy would allow researchers, teachers, and clinicians to understand the contribution it provides to healthcare professionals' competence and patient outcomes. Having a validated tool will allow nursing researchers to evaluate empathic engagement at a national level and will enable a comparison with results obtained in other countries.

Ultimately, it is only the patient who can tell whether a healthcare professional demonstrates empathy in a particular situation. In the future it will be useful to study empathy through both a quantitative and a qualitative study design where patients' perspectives are taken into account, as they are the ones who primarily ask for an empathic professional attitude.

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CONTRIBUTIONS

Study Design: MP, PC, RS, LL, DV.
Data Collection and Analysis: MP, RS, LL, DV.
Manuscript Writing: MP, RS, MI, LL.

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