



Civic-Mindedness Sustains Empathy in a Cohort of Physical Therapy Students: A Pilot Cohort Study

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Abstract

Background: Empathy is critical to patient-centered care and thus is a valued trait in graduate health-care students. The relationship between empathy and civic-mindedness in health professions has not previously been explored. **Objectives:** (a) To determine whether significant differences occurred on the Jefferson Scale for Empathy–Health Professions Student Version (JSE-HPS) and Civic-Minded Professional scale (CMP) and its subscales across the curriculum, (b) to explore a potential relationship between civic-mindedness and empathy in a cohort of graduate physical therapy (PT) students at regular intervals, and (c) to explore the predictive ability of civic-mindedness on empathy scores. **Methods:** This study was a convenience sample of a cohort of 48 PT students who completed both the JSE-HPS and the CMP at 4 points of a service-learning intensive curriculum. Statistical analysis included descriptive statistics, a Friedman’s analysis of variance with Wilcoxon signed-ranks post hoc testing, and Spearman correlations with stepwise linear regressions. **Results:** Statistically significant differences were not found for the JSE-HPS. Civic-Minded Professional scores increased across the curriculum. The JSE-HPS, the CMP, and various CMP subscales were significantly correlated. The JSE-HPS pretest scores were predictive of the year 1 and 2 posttest JSE-HPS scores. **Conclusion:** This study’s findings indicate that service-learning and the resulting development of civic-mindedness supports empathy. Programs could use JSE-HPS pretests to identify individual graduate students need for empathy mentorship upon program entrance or as one admission criterion.

Keywords

empathy, Jefferson Scale of Empathy, civic-mindedness, service-learning

Introduction

Empathy is the ability to understand and experience another person’s feelings (1). The affective component of empathy occurs due to a sharing of another’s emotional state (2). The cognitive component of empathy occurs from taking on another’s perspective (1). These components allow for the understanding of the beliefs and emotional state of another human being, including another’s circumstances and situational stressors (3). Empathy is not strictly automatic and can be increased through motivation or personalization or decreased through a lack of connection, for example, with patients from socioeconomic or cultural groups dissimilar to a health-care provider (4). The cognitive component can be affirmed or increased through continual support throughout the duration of an academic health professions program (5). The key appears to be consistency of exposure to empathy

building activities (6–9). For example, Canadian medical students who, when working with refugees in a student-run free clinic, exhibited responses over the course of the experience that could be characterized as the development of both the affective and cognitive dimensions of empathy (5). Pharmacy and medical students who regularly participated in a student-led pro bono clinic had higher patient ratings of

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provider empathy and patient centeredness than reported normative values for providers (10). Graduate physical therapy (PT) students who consistently participated in on- and off-campus pro bono services reported the development of compassion and communication (11).

Empathy is critical to patient-centered care and is valuable for members of the health-care team. Patient-centered communication places the patient's needs first and increases patient satisfaction, health outcomes, and adherence to a treatment plan (12). The promotion of patient-centered communication requires reflective listening skills, attentiveness, cultural competency, and empathy (13). Clients rate counselor empathy higher when the clinician's language and phrasing closely match the client's in motivational-interviewing sessions (14). Health-care provider empathy is associated with patient outcomes such as pain management, self-rated and objectively rated physical and mental health outcomes, and effective diagnosis and treatment (15,16).

Empathy is not always sustained across a health professions curriculum. The Jefferson Scale for Empathy–Health Professions Student Version (JSE-HPS) measures the cognitive aspect of empathy (17). The literature reports that JSE-HPS scores decline early in medical school education (18,19). Sex-based differences exist with female health profession students consistently exhibiting higher empathy scores (17–19).

Health professions educational programs should support the maintenance and development of empathy. One focus is on developing empathic communication skills that allow for a recognition and exploration of patients' needs and an acknowledgment of those needs to the patient (20). Training in both the theoretical basis for and practical aspects of communication increased medical students' empathy on the JSE-HPS as compared to a control group (21). Developing professional identity also supports empathy. A course emphasizing the positive attributes of medical professional identity, such as the meaning of the medical field to physicians, examples of good provider–patient interactions utilizing standardized patients, and patient descriptions of motivating versus demotivating encounters with providers, increased scores on the Jefferson Scale of Physician Empathy in first-year medical students (22). Civic-engagement through service learning could support empathy (10,11). The impact of empathy on health-care quality and outcomes makes it an important skill to include in health professional education.

Van Winkle et al synthesized the results of multiple studies to propose a model for developing the cognitive dimension of empathy in undergraduate health professions education (23). The model includes a peer support system, reflection, virtual technology, a focus on service learning, and implementation of the model early in the undergraduate health professions course of study (23). Van Winkle et al argues that this model would provide a consistent counterpoint to the lack of empathy students may encounter in their clinical experiences and the implicit curriculum of their

programs (23). Medical students report they need to maintain emotional distance and not explore patients' experiences deeply (24). They note an expectation to adapt to the style of the senior medical staff regarding how much time should be devoted to patient experiences during a medical interview and expectations to control or delay their emotional reactions (24). Medical students report one barrier to empathy development was a lack of good role models (25). This would be a feasible model for graduate-level health professions programs and their accrediting criteria as well. In the profession of PT, the Commission on Accreditation in Physical Therapy Education criteria support this model. Reflection is a key element of service learning, and thus PT programs with a service-learning focus should have a reflective component (26). Physical therapist education programs focus on the development of the profession's core values. One core value is accountability, which includes the sample indicator of communication, and another is compassion/caring; these core values contain the cognitive and affective components of empathy (27).

Students in the Institute for Physical Therapy Education (IPTE) at Widener University consistently participate in community engagement via a variety of oneday (28–30) and ongoing programming (31,32). The cornerstone of community engagement is the provision of pro bono PT services under the supervision of Pennsylvania-licensed physical therapists at the Chester Community Physical Therapy Clinic (Clinic) (31). Interested students interview for leadership positions on the Student Board of the Clinic, which oversees Clinic operations. Upper-level students mentor students in the class(es) below them. All students begin serving in the Clinic upon entrance to the graduate program. The curriculum embeds mandatory service-learning coursework in each semester, for which one requirement is reflection. Thus, the service-learning component of the IPTE curriculum includes all of Van Winkle's criteria for the development of empathy, with the exception of virtual technology (23).

Meaningful service-learning programs foster civic-mindedness in students through the development of civic knowledge, skills, and identity (33–35). Civic-mindedness is defined as one's knowledge of and/or involvement in the community and a commitment to acting on responsibility toward that community (36). Civic-mindedness increases in response to continuous civic engagement through service learning (34,35). Consistent service learning can foster communication, cultural competency, and professional core values; it may simultaneously foster empathy through making connections to outside groups (11,37). The relationship between empathy and civic-mindedness has not previously been explored. The objectives of this study were to explore (a) potential significant differences in the JSE-HPS and Civic-Minded Professional Scale (CMP) and its subscales across the curriculum, (b) a potential relationship between civic-mindedness and empathy in a cohort of graduate PT

Table 1. Means and Standard Deviations of JSE-HPS, CMP, and CMP Subscales at Each Time Point.

Scale/Subscale	Pretest	Posttest Year 1	Posttest Year 2	Posttest Year 3
JSE-HPS	111.7 (11.1)	112.9 (11.2)	115.6 (8.5)	111.5 (10.8)
CMP	125.0 (12.8)	115.5 (33.4)	126.2 (16.4)	131.0 (13.4) ^{a,b,c}
Voluntary Action: Volunteer activity	29.36 (5.9)	30.7 (13.9)	29.7 (6.4)	31.6 (4.7) ^{a,b,c}
Identity and Calling: Satisfaction and work identity	31.0 (2.8)	33.2 (15.1)	31.2 (3.5)	31.9 (2.7)
Citizenship: Participation in civic events	16.7 (4.6)	17.6 (7.7)	16.8 (5.7)	18.4 (4.0)
Social Trustee: Valuing of education and professional expertise	24.3 (2.6)	24.4 (11.3)	24.5 (3.3)	24.8 (3.3)
Consensus Building: Working with individuals from diverse backgrounds)	23.4 (2.2)	26.4 (18.1)	23.9 (2.3)	24.2 (2.5)

Abbreviations: CMP, Civic-Minded Professional Scale; JSE-HPS, Jefferson Scale for Empathy–Health Professions Student Version.

^aSignificantly different than pretest, $P \leq .05$.

^bSignificantly different than posttest year 1, $P \leq .05$.

^cSignificantly different than posttest year 2, $P \leq .05$.

students at regular intervals, and (c) the predictive ability of civic-mindedness on empathy scores.

Methods

Study Design

This was a cohort study using convenience sampling.

Participants and Setting

Participants were recruited from the class of 2018 at Widener University's IPTE. Forty-eight members of the class began the study. All were enrolled in a 3-year curriculum.

Instrumentation

The JSE-HPS is a 20-item survey; scores range from 20 to 140, with higher scores indicating greater levels of empathy (38). The survey is a 7-point Likert scale, with choices that range from strongly disagree to strongly agree; 10 items are negatively phrased and are reverse scored (38). This survey is reported as reliable and valid, with internal consistency reported as having a Cronbach's α of .78, a test–retest reliability coefficient ranging from .58 to .69 and face validity as established by a panel of experts (38).

The CMP is a survey that assesses the domains of self-identity; work, career, and profession; and civic attitudes, civic action, and public purpose to measure the construct of civic-mindedness (39,40). The CMP is reliable and valid and consists of 23, 7-point Likert-scale survey questions that range from strongly disagree to agree; total scores range from 23 to 161 (39,40). Internal consistency is reported as having a Cronbach's α of .91. Convergent validity with the Civic Engagement Index ranges from $r = .13$ to $.60$, $P \leq .001$, the New England Resource Center for Higher Education (NERCHE) Scale $r = .16$ to $.54$, $P \leq .001$, and the Public Service Interest Subscale, $r = .25$ to $.69$, $P \leq .001$ (39,40). The survey has 5 subscales of Voluntary Action, Identity and Calling, Citizenship, Social Trustee, and Consensus Building (39,40; see Table 1 for subscale definitions).

Data Collection

The institutional review board at Widener University approved this research project. Participating students in the class of 2018 completed the JSE-HPS and CMP at the beginning of their first professional year of study and at the end of the first, second, and final years of the didactic portion of the PT curriculum. Students provided with informed consent at each data collection point.

Students who participated in the research study were provided with a unique identifying code known only to one researcher (J.D.B.). This code was placed on the front of each survey at each data collection point. Surveys for each student were placed into an envelope with the student's name on the envelope. Students removed their survey from the envelope and returned their survey without its corresponding envelope to another researcher (K.M.P.) for input into a database. At the initial point of data collection, students also completed basic demographic information of age, sex, race, and year of graduation.

Data Analysis

Data were analyzed using SPSS version 23. The α level was set at .05. Incomplete cases were handled through listwise deletion. Descriptive statistics were performed on the demographic data of age, sex, and race, the JSE-HPS, and on the CMP scale and subscale scores for each data collection point. Nonparametric statistics were used because the sample was one of convenience. A Friedman's analysis of variance (ANOVA) with Wilcoxon signed-ranks test post hoc testing were performed on each data collection point for the JSE-HPS and CMP and its subscales to determine whether there were within-group differences for each time point. Effect sizes were calculated for all statistically significant results for the post hoc testing using the formula for Cohen's d ($d = X_1 - X_2 / s_p$) in order to interpret the importance of significant results (41). Mann-Whitney U 's were run between males and females and between students who were and were not part of the Clinic Student Board to determine whether between-group differences existed.

Table 2. Means and Standard Deviations for the JSE-HPS by Sex and Clinic Student Board Membership.

Participant Demographics	Pretest	Posttest Year 1	Posttest Year 2	Posttest Year 3
Males	109.3 (10.7)	110.8 (10.3)	114.8 (8.8)	109.5 (10.4)
Females	115.1 (11.0)	116.3 (11.9)	117.4 (8.0)	113.5 (11.4)
Clinic student board member	112.9 (10.5)	113.3 (8.7)	117.5 (8.1)	111.0 (10.3)
Clinic student board nonmember	111.2 (11.7)	113.1 (12.6)	114.2 (8.7)	111.4 (11.4)

Abbreviation: JSE-HPS, Jefferson Scale for Empathy–Health Professions Student Version.

Table 3. Means and Standard Deviations for the CMP Total Score by Sex and Clinic Student Board Membership.

Participant Demographics	Pretest	Posttest Year 1	Posttest Year 2	Posttest Year 3
Males	124.8 (12.9)	110.1 (36.7)	125.6 (16.2)	127.3 (14.2)
Females	125.2 (13.1)	122.5 (28.1)	126.9 (17.2)	135.7 (11.0)
Clinic student board member	130.5 (11.1)	122.9 (29.6)	127.5 (15.3)	133.5 (11.5)
Clinic student board nonmember	121.9 (12.8)	111.4 (35.3)	125.4 (17.3)	129.6 (14.4)

Abbreviation: CMP, Civic-Minded Professional Scale.

To explore potential relationships between civic-mindedness and empathy, a Spearman correlation was run between the JSE-HPS and the CMP total score and subscales at each survey time point. Stepwise linear regressions were performed on significant correlations at each time point to determine whether the CMP and any of its subscales might predict the JSE-HPS at that time point. To explore relationships between civic-mindedness and empathy upon entrance to the program and later empathy scores, a Spearman correlation was run between the JSE-HPS pretest, CMP total score, subscale pretests, and the JSE-HPS posttests. Stepwise linear regressions between the pretest JSE-HPS and CMP total score and the JSE-HPS posttest scores were performed for any significant correlations. In order to determine whether the data did not violate the assumptions of linear regression, all regression analyses were examined for the presence of multicollinearity and heteroscedasticity. Multicollinearity and heteroscedasticity were not present, and thus the stepwise linear regressions were run.

Results

Forty-eight students entered the class of 2018 in the summer of 2015; 5 students did not continue with the cohort to graduation. Only 39 students from the cohort that completed the program took surveys at all-time points. Twenty-two students with complete surveys were male and 17 were female. One student did not identify race on their questionnaire, 34 were Caucasian and 4 were African American. Fourteen students served on the Clinic Student Board.

A Friedman's ANOVA with Wilcoxon signed-ranks post hoc testing was performed on the JSE-HPS and the CMP and its subscales to determine whether significant differences existed between time points. No significant differences were found for the JSE-HPS. Significant differences were found between the CMP total score and voluntary action subscale, with effect sizes ranging from small to medium ($r = .09$ to

$.29$). No significant differences were found for the other subscales (Table 1). Mann-Whitney U analyses for potential group differences between males and females and members and nonmembers of the Student Board were not significant (Tables 2 and 3).

For the pretest significant correlations were found between the JSE-HPS and CMP total score ($r_s = .428$; $P = .002$), JSE-HPS and Identity and Calling ($r_s = .560$, $P \leq .001$), Social Trustee ($r_s = .316$; $P = .026$), and Consensus Building ($r_s = .616$, $P \leq .001$). A stepwise linear regression using the significant variables was performed. This equation predicted 37.9% of the variability in the JSE-HPS pretest (Table 4).

For the year 1 posttest, significant correlations were found between the JSE-HPS and the CMP total score ($r_s = .320$; $P = .036$). The CMP total score did not enter into a stepwise linear regression equation (Table 4).

For the year 2 posttest, significant correlations were found between the JSE-HPS and CMP total score ($r_s = .320$, $P = .044$), JSE-HPS and Identity and Calling ($r_s = .448$; $P = .004$), and Social Trustee ($r_s = .333$; $P = .036$). A stepwise linear regression using the significant variables was calculated. This equation predicted 21.7% of the variability in the year 2 JSE-HPS posttest (Table 4).

For the year 3 posttest, significant correlations were found between the JSE-HPS and Identity and Calling ($r_s = .332$; $P = .030$) and Social Trustee ($r_s = .304$; $P = .048$). A stepwise linear regression using the significant variables was calculated. This equation predicted 9.3% of the variability in the year 3 JSE-HPS posttest (Table 4).

Correlations between the JSE-HPS, CMP total score, and subscales for the pretest and each year's JSE-HPS were performed. For the JSE-HPS year 1 posttest, significant correlations were found between the JSE-HPS pretest ($r_s = .642$, $P \leq .001$), CMP pretest total score ($r_s = .352$; $P = .028$), the Voluntary Action ($r_s = .316$; $P = .047$),

Table 4. Regression Equations for JSE-HPS and CMP Total Score and Subscales.

Test	Regression Equation	Adjusted r ²
Pretest	JSE-HPS pretest = 2.013(Consensus Building) + .989 (Identity and Calling) + 34.19	.353
Posttest year 1	NA	NA
Posttest year 2	JSE-HPS year 2 posttest = 1.178 (Identity and Calling) + 79.13	.217
Posttest year 3	JSE-HPS year 3 posttest = 1.377 (Identity and Calling) + 68.32	.093
Pretest scores to predict posttest JSE year 1 scores	JSE-HPS year 1 posttest = .606 (JSE-HPS pretest) + 45.68	.361
Pretest scores to predict Posttest JSE year 2 scores	JSE-HPS year 2 posttest = .537 (JSE-HPS pretest) + 55.52	.480

Abbreviations: CMP, Civic-Minded Professional Scale; JSE-HPS, Jefferson Scale for Empathy–Health Professions Student Version.

Identity and Calling ($r_s = .399$; $P = .011$), and Consensus Building ($r_s = .535$, $P \leq .001$) subscales. The JSE-HPS pretest was the only variable that entered into the regression equation. This equation explained 37.7% of the variability in JSE-HPS posttest year 1 scores (Table 4). For the year 2 JSE-HPS posttest, significant correlations were found between the JSE-HPS pretest ($r_s = .655$, $P \leq .001$), the CMP pretest total score ($r_s = .363$; $P = .021$) and the Identity and Calling ($r_s = .415$; $P = .008$), Social Trustee ($r_s = .347$; $P = .028$), and the Consensus building ($r_s = .478$; $P = .002$) subscales. The JSE-HPS pretest was the only variable that entered into the regression equation. This equation explained 48% of the variability in JSE-HPS posttest year 2 scores (Table 4).

Discussion

There were no significant differences in the JSE-HPS between each time point. Studies of medical and nursing students report declining scores on the JSE-HPS throughout their education (42–44). However, medical students who volunteered at a student-run free clinic did not experience the decline in empathy that their nonvolunteer classmates experienced (45). Although all students in the IPTE are required to participate in a certain amount of service learning, there was no significant difference found between those students who served additional volunteer hours on the Clinic Student Board and those who did not. The very act of service may prevent a decline of empathy throughout a curriculum. Additionally, there were no significant between-sex differences in this study. Service may support empathy in both sexes, which may have minimized the differences reported in other studies (17–19).

Service learning and its resultant development of civic-mindedness may serve to support empathy. Our previous research found increases in civic-mindedness across a service-learning intensive PT curriculum (34,35). Results from the present study demonstrate significant increases in both the CMP and the Voluntary Action subscale across the curriculum. Service learning has been expressed as a means to immerse students in situations to better understand the challenges faced by clients; compassion and empathy can both increase through the use of this educational tool (46). In the present study, significant correlations were found

between the JSE-HPS and CMP scales at the pretest, and year 1 and 2 posttests. Several studies point to the role of service learning in fostering civic-mindedness and increasing empathy. Nursing students who engaged with patients who were homeless experienced increases in empathy and had a greater appreciation for the advocacy role that nurses play; similar research on nursing students who worked with patients who were homeless or living in low-income housing found increases in empathy and a sense of social justice (47,48). A service-learning course in which nursing students engaged with older adults enhanced a number of variables that included patient-centered care, compassion, and empathy (49). It is likely that increasing civic-mindedness through service learning could also support or increase empathy (50).

Additionally, correlations were found between the JSE-HPS and various subscales of the CMP. The Identity and Calling and Social Trustee subscale correlations were consistent in the pretest and years 2 and 3 posttests. The Identity and Calling subscale is related to work identity and satisfaction, and the Social Trustee subscale relates to a valuing of education and professional expertise, constructs that appeal to both affective and cognitive domains (39,40). Nurses with higher levels of professionalism and job satisfaction have higher levels of compassion satisfaction and lower rates of compassion fatigue (51,52). Compassion satisfaction is a construct of positive feelings derived from being able to help other people and is related to lower compassion fatigue, which is a construct marked by feelings such as burnout and emotional exhaustion, and experiencing depersonalization (53). Higher levels of empathy were found to be related to higher levels of compassion satisfaction in a sample of social workers (54). This sample of students, who were immersed in PT service-learning experiences, exhibited relationships between variables related to education, professional expertise, work identity and satisfaction, and empathy. The findings of our study and the literature suggest an interrelationship of variables related to professionalism, career satisfaction, and empathy, which could serve to reduce feelings associated with compassion fatigue. Future research examining the relationship between civic-mindedness, empathy, and compassion fatigue is warranted.

When examining the predictive ability of the pretest scores for JSE-HPS posttest scores, only the JSE-HPS pretest

scores entered into the regression equations to predict the JSE-HPS posttests for years 1 and 2. The JSE-HPS pretest predicted approximately one-third of the variability on the JSE-HPS year 1 posttest and almost half of the variability on the JSE-HPS year 2 posttest. The JSE-HPS pretests could indicate individual graduate students' need for empathy mentorship upon program entrance. Hojat and Gonnella report cut scores for high- and low-empathy in males and females (17). Using this information, students with high scores could be paired with lower scoring students in a peer-mentorship model in service-learning activities, providing the consistent support for the cognitive aspect of empathy (5,23). Interprofessional education and interprofessional clinical experiences could be also used to support empathy development in students who score lower, for example, nursing students score higher on empathy measures than other health professions (55). Empathy could also be used as admissions criteria, for example, nursing students with higher levels of emotional intelligence experience greater success in their academic programs (56). Health professions schools in the United Kingdom have explored assessment tools that measure traits such as empathy to select students more suitable for these careers (57,58).

Subscale items on the CMP were able to predict approximately one-third of the variability on the JSE-HPS pretest and approximately one-fifth of the variability on the JSE-HPS year 2 posttest. Other factors that relate to empathy not measured by the CMP, such as personality and prior life experiences, which influence both the affective and cognitive domains of empathy and could account for the percentage of variability not measured (59,60). To this point, further research is warranted with respect to the reasons for students selecting of a health professions career, the selection of a particular academic program (ie, a service-learning intensive one vs a more traditional academic program), and factors such as emotional intelligence are warranted to determine the roles these factors play in empathy development and how much variability in JSE-HPS scores would be accounted for by these factors.

Limitations

There are several limitations to this study. First, this study examined only one cohort of students in a curriculum that has intensive service-learning requirements. Further research is needed on multiple cohorts within the IPTE as well as at other universities both with and without service-learning requirements. To this point, it is unknown whether students who choose to go to programs with intensive service-learning requirements are qualitatively different in civic-mindedness and empathy from the outset. Studying a variety of programs would further clarify whether a priori student characteristics result in the stabilization of empathy across a curriculum. It is also unknown whether the 5 students who discontinued with the program, as well as the 4 students who did not complete surveys at all-time points,

would have influenced the scores on both the CMP and JSE-HPS.

Conclusion

Unlike what is widely reported in the literature, empathy was sustained while civic-mindedness simultaneously increased in a cohort of graduate PT students who engaged in service learning. Empathy was correlated with both civic-mindedness and constructs that comprise civic-mindedness. These findings suggest that developing civic-mindedness may have a protective effect against empathy declines in health professions students. Future research is needed on a larger and more diverse sample to determine whether these pilot findings remain consistent and to elucidate whether students selecting a service-learning intensive program differ on empathy scores from peers that select programs without minimal service-learning requirements.


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