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Empathy of Medical Students and Compassionate Care for Dying Patients: An Assessment of "No One Dies Alone" Program

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Abstract

The "No One Dies Alone" (NODA) program was initiated to provide compassionate companions to the bedside of dying patients. This study was designed to test the following hypotheses: (1) Empathy scores would be higher among medical students who volunteered to participate in the NODA program than nonvolunteers; (2) Spending time with dying patients would enhance empathy in medical students. Study sample included 525 first- and second-year medical students, 54 of whom volunteered to participate in the NODA program. Of these volunteers, 26 had the opportunity to visit a dying patient (experimental group), and 28 did not, due to scheduling conflicts (volunteer control group). The rest of the sample (n = 471) comprised the "nonvolunteer control group." Comparisons of the aforementioned groups on scores of the Jefferson Scale of Empathy confirmed the first research hypothesis ($P < .05$, Cohen $d = 0.37$); the second hypothesis was not confirmed. This study has implications for the assessment of empathy in physicians-in-training, and timely for recruiting compassionate companion volunteers (armed with personal protective equipment) at the bedside of lonely dying patients infected by COVID-19.

Keywords

empathy, No One Dies Alone, dying patients, volunteerism, medical students

Introduction

Little consensus exists on the conceptualization and definition of empathy, despite its importance in the context of patient care (1,2). Different investigators have offered different definitions of empathy, adding to the ambiguity of the concept. Because we believe that no concept can be subject to empirical scrutiny without an operational definition and a validated measuring instrument, our physician empathy research team at Asano-Gonnella Center for Research in Medical Education and Health Care, Sidney Kimmel Medical College at Thomas Jefferson University defined clinical empathy as a cognitive attribute that involves an *understanding of* patient's pain, suffering, experiences, and concerns, combined with a capacity *to communicate this understanding*, and an *intention to help* (1, 2, p. 74). To meet the need for a psychometrically sound instrument to measure clinical empathy as defined above, the well-known Jefferson Scale of Empathy (JSE) was also developed by one of the authors (M.H.).

The "No One Dies Alone" (NODA) program brings together all of the key ingredients (shown in *italics*) in this definition of clinical empathy in the context of patient care. The backbone of clinical empathy and major ingredient of willingness to volunteer in NODA program is an altruistic motivation for the welfare of others who need help.

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The idea of the NODA program was initiated in 2001 at the Sacred Heart Medical Center in Eugene, Oregon, by Sandra Clarke, critical care registered nurse, to provide an opportunity for good-hearted volunteers to serve as compassionate companions for terminally ill and dying patients who have no family members or friends to comfort them at their bedside. The NODA program at Thomas Jefferson University was established in 2017 by an interprofessional student organization. The NODA volunteers are coached to give the gift of presence to terminally ill patients who might otherwise die a lonely death. To grant end-of-life care that distracts a dying patient from pain and suffering and from thinking of their disease progression toward its eventuality, the volunteers provide a variety of support (eg, psychological, social, spiritual), such as reading books, stories, or poetry; playing music; holding patients' hands; rendering therapeutic touch; or simply sitting at the bedside.

Research suggests that volunteers for prosocial services demonstrate a higher degree of empathy (3). Empathy has also been associated with a tendency toward altruistic help, charitable giving, and donations (4–6). Based on these findings, we designed this study to test the following hypotheses: (1) Empathy scores would be higher among medical students who volunteered to participate in the NODA program than among nonvolunteers; (2) Spending time with dying patients would enhance empathic orientation toward patient care.

Methods

Study Sample

Total study sample included 525 first- and second-year medical students, representing 90% of total students in their respective classes. The study sample comprised 3 groups: experimental group, volunteer control group, and nonvolunteer control group. Of the total sample, 54 volunteered to participate in NODA program. Of the total 54 NODA volunteers, 26 had the opportunity to visit a dying patient for at least an hour, providing them compassionate companionship (experimental group). However, 28 volunteer students did not have the opportunity to visit a patient (volunteer control group) due to scheduling conflicts (eg, unavailability of patients in the student allotted free time). Students in both groups were awarded a $50 gift card for completing the study surveys (posttests). The rest of the study sample (n = 471) was included in the "nonvolunteer control group."

Research Instrument

The JSE, a validated instrument for measuring empathic orientation toward patient care, was used in this study. The JSE is a broadly used content-specific, and context-relevant instrument that has been translated into 57 languages and used in over 85 countries (2). Strong evidence is available in support of psychometrics of this instrument in medical students in the United States and abroad (2, pp. 83-128, 267-286) (7). A review article reports that the JSE is the most frequently used instrument for measuring empathy in the context of medical education and patient care (8).

Procedures

The experiment was conducted in the academic year 2018 to 2019. All students in the study sample completed the JSE (medical student version) as part of a matriculation survey administered online at the beginning of medical school (pretest score). Those in the experimental group were asked to complete the JSE online within 3 days after visiting the patient (posttest 1) to examine the short-term effect of spending time with a dying patient; 18 students in this group completed posttest 1 in the allotted time. The JSE was also administered online, as the follow-up test, at the end of the academic year to students in the experimental group (posttest 2) and students in the volunteer control groups (13 students in the experimental, and 7 students in the volunteer control completed posttest 2). No follow-up test was needed to be administered to the rest of the class, because previous studies have reported no change in JSE scores in the first 2 years of medical school (9,10). However, a decline in empathy scores has been observed in the third year of medical school education (9,10).

Statistical Analysis

We used *t* test for independent groups to compare the empathy scores of the volunteer students (in the experimental and volunteer control groups) with the rest of the study sample (nonvolunteer control group). Also, we used *t* test for repeated measures to compare pretest–posttest differences on the JSE in the Experimental and in volunteer control groups.

Results

To test the first research hypothesis, we compared JSE mean scores for NODA program volunteers (n = 54, M = 120.3, standard deviation [SD] = 8.8) with the nonvolunteer control group (n = 471, M = 116.5, SD = 10.4). Result of the *t* test for independent groups (see Table 1) showed a statistically significant difference on JSE mean scores between the 2 groups of volunteers and nonvolunteers in favor of volunteer group, $t_{(523)} = 2.56$, $P < .05$, Cohen $d = 0.37$. This finding supports the first research hypothesis, confirming that medical students who volunteered to help terminally ill patients showed more empathic orientation toward patient care at the beginning of medical school. Summary results of statistical analyses are reported in Table 1.

To test the second research hypothesis, we compared the JSE pretest scores at matriculation in the experimental group (M = 121.3, SD = 8.6) with their JSE posttest 1 scores which were measured within 3 days after visiting the patient (M = 123.2, SD = 9.4). Complete data for pretest and posttest 1 were available for 18 students. Although there was a

Table 1. Means (M), Standard Deviations (SD), and Number of Observations (N) of the Jefferson Scale of Empathy Scores in the Assessment of "No One Dies Alone" Program" (NODA).[a]

Group	Pretest at matriculation M (SD)	Posttest 1 after patient visit M (SD)	Follow-up posttest 2 at end of academic year M (SD)
NODA experimental group[b]	121.3 (8.6) N = 26	123.2 (9.4) N = 18	122.6 (10.1) N = 13
NODA volunteer control group[c]	119.3 (9.0) N = 28	–	119.7 (2.8) N = 7
Total NODA volunteers[d]	120.3 (8.8) N = 54	–	–
Nonvolunteer control group[e]	116.5 (10.4) N = 471		–

[a]Study participants included 525 first- and second-year students in the 2018 to 2019 academic year at Sidney Kimmel Medical College, Thomas Jefferson University.
[b]Includes NODA volunteers who had the opportunity to visit a patient.
[c]Includes NODA volunteers who did not have the opportunity to visit a patient.
[d]Includes all NODA volunteers (experimental group and control group combined).
[e]Includes medical students in the sample who did not volunteer for the NODA program (nonvolunteer control group).

slight increase in the posttest 1 empathy mean score compared to the pretest, results of repeated measures *t* test showed no difference at an accepted level of statistical significance ($P < .05$). Therefore, the second hypothesis was not confirmed. Also, in the experimental group, no significant change in empathy scores was observed when comparing the pretest scores with the posttest 2 empathy scores measured at the end of the academic year (Table 1). Thus, no long-term effect of visiting a patient could be demonstrated. Although the direction of pretest–posttest changes in empathy scores was consistent with our expectation, statistically nonsignificant findings did not support our second research hypothesis.

Discussion

Findings of this study generally suggest that medical students who volunteered to participate in the NODA program and took time out of their busy academic schedules to sit with lonely dying patients possessed a higher degree of empathic orientation toward patient care than their nonvolunteer classmates. A plausible explanation for this finding is that empathy emerges from an intrinsic motivation (2). Furthermore, empirical findings link empathy to prosocial behaviors, such as volunteerism (3), charitable giving, and nonprofit services (4). Also, empirical research with medical students has shown that empathic orientation toward patient care (measured by the JSE) is significantly associated with both positive personal qualities that are conducive to relationship building (2, pp.151-167, 7), and with medical school faculty ratings of students' clinical competence (11). In addition, empirical research has shown that physician empathy is predictive of positive patient outcomes in diabetic patients (12,13). These findings suggest that empathic orientation toward patient care among physicians-in-training and in-practice (measured by the JSE) is predictive of clinical competence and patient outcomes. Thus, detecting the degree of empathic orientation by simply using a proxy measure such as a student's willingness to volunteer in rendering compassionate care to dying patients would provide a valuable clue to identify nonvolunteer students who may need more educational remedies to enhance their empathy in patient care as they progress through medical school. This can have implications for allocating limited resources for training caring physicians.

This study is timely, given the current COVID-19 pandemic that generated unprecedented situations in which a large number of infected patients die a lonely death with no one at their bedside. Good-hearted compassionate individuals, willing to volunteer in helping terminally ill patients, have always served and presently are serving patients in hospitals worldwide. With the use of personal protective equipment, they can expand the mission of "no one dies alone" by providing the gift of presence at the bedside of those lonely dying patients infected by COVID-19.

Study Limitations

Generalization of the findings is limited due to the convenience sampling and single institution nature of the study. This limitation can be mitigated by using representative samples of medical students from multiple medical schools. Also, random assignment of students into experimental and control groups is impossible due to the voluntary nature of student participation in the program and scheduling conflicts to visit patients among volunteers.

Another limitation of this study is the dropout rates in volunteers in the experimental and control groups that resulted in a small sample size without sufficient statistical power to detect significant changes. A sufficiently large sample size and lower dropout rates would increase the likelihood of confirming the second research hypothesis.

A question may rise about lumping first- and second-year students together in the study sample without recognizing the possible differences between the 2 classes on their

medical school experiences that can influence their empathic orientation toward patient care. Empirical research shows that in the absence of targeted educational programs, scores on the JSE would not change during the first 2 years of medical school (9,10). However, according to some empirical research in medical students, empathy scores start to decline in the third year of medical school (9,10). Therefore, medical education experiences in the first 2 years of medical school does not have a substantial confounding effect of the scores of the JSE.

Conclusion

We found that the NODA volunteers obtained higher scores on a validated measure of empathic orientation toward patient care. This finding combined with empirical findings that higher score on the JSE among medical students and physicians can predict positive personality attributes and more optimal patient outcomes, suggest that assessment and enhancement of empathic orientation toward patient care are important in medical students and physicians. Therefore, it can be speculated that medical students who volunteer to participate in the NODA program are more likely than non-volunteers to become caring physicians because of their higher propensity for clinical empathy. More multiple institutional research with larger samples is needed to confirm this speculation. Findings suggest that NODA volunteers demonstrate more potential to become empathic physicians, and volunteerism in prosocial programs can be a clue for caring attitudes toward patient care. The findings have potential implications for the assessment and enhancement of empathy in physicians-in-training and in-practice. The study is also timely for recruiting compassionate companion volunteers (armed with personal protective equipment) at the bedside of lonely dying patients infected by COVID-19.

Authors' Note

This study was approved by the Institutional Review Board of Thomas Jefferson University and determined to be exempt (Control #: 17E.441). We confirm that guidelines on patient care have been met in this study. According to the approval of our IRB office, no written consent was required from dying patients who were visited by our medical students for compassionate companionship in the "No One Dies Alone" program; hence, informed consent is not required.

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Declaration of Conflicting Interests

The authors declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: The corresponding author created the Jefferson Scale of Empathy that was used in this study, for which his university holds the copyright and generates revenue from others' use of this instrument, but the corresponding author derives no financial benefit.

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