

Empathy in Internal Medicine Residents at Community-based Hospitals: A Cross-sectional Study

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ABSTRACT

INTRODUCTION: Many research reports revealed declining empathy in medical schools that continues in postgraduate years of training.

OBJECTIVE: The aim of this study is to examine the self-reported empathy levels of internal medicine (IM) residents in 3 community-based teaching hospitals.

METHODS: The Jefferson Scale of Physician Empathy, Health Professionals version, is an online, self-administered, questionnaire that was offered to 129 current and incoming residents at 1 osteopathic and 2 allopathic, IM training programs in Flint, Michigan.

RESULTS: Forty-five residents responded (35% response rate). Our residents' cumulative mean empathy score was 112.5 with a *SD* of 12.72, which is comparable with the cumulative empathy scores for IM residents at university hospitals. There was an increase in empathy score from the beginning level of training, postgraduate year 0 (PGY0), to the PGY1 level, and a noticeable, although statistically non-significant, decrease in empathy score for both PGY2 and PGY3 residents. The graduating residents' scores were higher compared with incoming residents.

CONCLUSIONS: The cumulative mean empathy score in community-based IM residents showed an increase in the beginning of residents' training and decrease in empathy score by the end of training. There were significant differences in empathy scores by level of training at individual hospitals. This might be related to different targeted curricula.

KEYWORDS: Empathy, medical education, internal medicine residency

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Introduction

No one debates the importance of empathy in the physician–patient relationship. Although there is no unified definition of empathy, most researchers agree that empathy in health care can be defined as a cognitive ability to actively listen, understand, and communicate with patients to help with their needs.^{1–3}

Defined in this way, empathy is one of the most desirable skills that medical professionals can have. Not only is empathy an integral part of a physician's competency and professionalism, when communicated effectively empathy helps to establish patient-centered care with a strong physician–patient relationship, and better patient and family satisfaction.⁴ Empathetic physician–patient relationships improve patients' adherence to treatment and improve medical outcomes.^{5–9} Empathetic communication skills have shown evidence of preventing burnout, as well as maintaining higher professional satisfaction and well-being.^{10–13}

Medical educators recognize and support the need to preserve empathy. However, there is still much uncertainty about

how to preserve empathy.^{14–15} Over the last 15 years, research reports have shown predominantly decreasing trends of empathy with increasing years of training.^{16–23}

In residency training, decreased empathy and increased stress was associated with perceived medical errors.²⁴ Although those trends are disappointing for medical educators, other reports are suggesting that these trends might be “greatly exaggerated” and there is need for “reconsidering empathy decline.”^{14,25,26}

Positive changes in empathy, with increasing empathy level among medical trainees, usually are observed with targeted educational programs.^{27–29} Two of our authors previously published a pilot study done in a community-based teaching hospital that showed internal medicine (IM) residents' empathy increased with levels of training, when comparing incoming residents with graduating residents.³⁰ They attribute that change to the residency program's integrated behavioral science and geriatric medicine curricula that include longitudinal nursing home experience. However, the study was done in a single



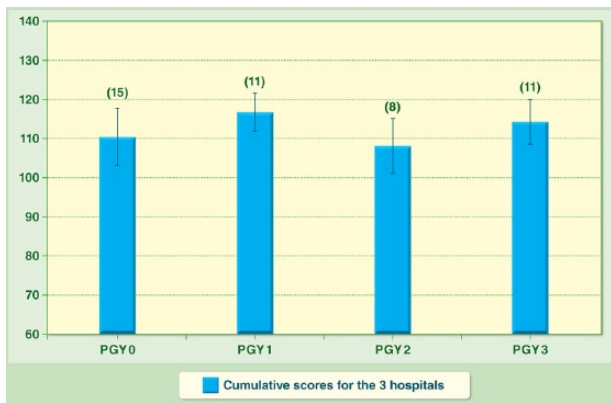


Figure 1. Internal medicine resident empathy scores by training level. PGY indicates postgraduate year of training.

institution with a small number of participants. To further investigate empathy and increase sample size, the current study was conducted across 3 postgraduate, IM programs from 3 community-based teaching hospitals. These data add a new dimension to the empathy literature as the landmark studies have been performed at large, university residency programs. Community-based hospitals differ not only in size and location, but most residents in these settings trained in international medical schools.³¹ Therefore, we aimed to assess self-reported empathy in our residency programs in Flint, Michigan.

Methods

Between May and September 2014, the 129 IM residents training in our 3 residency programs were invited to participate in a self-assessment of empathy. Two of the residency programs are allopathic and 1 was osteopathic; the programs are affiliated with Michigan State University's College of Human Medicine and College of Osteopathic Medicine, respectively. The allopathic programs were comprised of 100% international medical graduates (IMGs). Postgraduate years 1, 2, and 3 (PGY1, PGY2, PGY3) were surveyed at the end of their training year (May–June 2014). Incoming residents (PGY0) were assessed at the beginning of their training (July–September 2014). The program administrators from participating hospitals emailed residents a cover letter explaining the purpose of the study and a link to the confidential survey. Investigators were blinded to the codes assigned to participants.

The instrument used to assess empathy was the Jefferson Scale of Physician Empathy, Health Professionals version (JSPE-HP), a validated survey with possible scores ranging from 20 to 140.¹ The survey consists of 20 questions, answered using a 7-point, Likert-type scale from *strongly disagree* to *strongly agree*. We engaged a statistician to perform comparisons across programs and years of training; one-way analysis of variance (ANOVA) was used for those comparisons. There was no follow-up test.

The institutional review boards of the 3 hospitals approved the study.

Results

The number of responders from the 3 programs was 45 out of 129, for a response rate of 35%. The cumulative mean empathy score for all residents was 112.5 with a *SD* of 12.72. When compared by PGY, the mean empathy scores increased from PGY0 to PGY1 level, and there is a noticeable, although statistically non-significant, decrease in empathy score for both PGY2 and PGY3 residents (Figure 1). Scores for PGY0, PGY1, PGY2, and PGY3 residents were 110.4, 116.8, 108.1, and 114.3, respectively. *SDs* were 14.6, 9.8, 14.1, and 11.4, respectively. The actual scores for each PGY level at each of the participating hospitals are summarized in Table 1. Hospitals 1 and 3 are allopathic accredited residency programs, comprised entirely of IMGs at the time of the study. Hospital 2 is an osteopathic accredited residency program with no IMGs.

We also evaluated 2 individual hospitals by comparing the levels of empathy by year of training (Figure 2). Because the third hospital had responses only from PGY0 and PGY1 residents, it was excluded from the comparison. The differences in empathy scores between Hospitals 1 and 2 did not reach statistical significance, except for the comparison made between PGY2 residents.

For hospital 1, 2 of the authors had assessed their residents' empathy scores 1 year prior to the current study (Figure 3). When comparing the empathy scores obtained from the sample group in 2013 with those from 2014, none of the groups had a decline in empathy self-assessment.

Discussion

The key finding of our study is that the cumulative mean empathy score of residents' self-assessment of empathy showed an increase in empathy score in the beginning of residents' training, and a noticeable decline by the end of training. However, in 1 hospital, graduating residents' scores compared with those of incoming residents were higher. In addition, there may be significant differences between programs (see Figure 2) and a group of residents followed from one year to the next did not show a decline in empathy at any level of training.

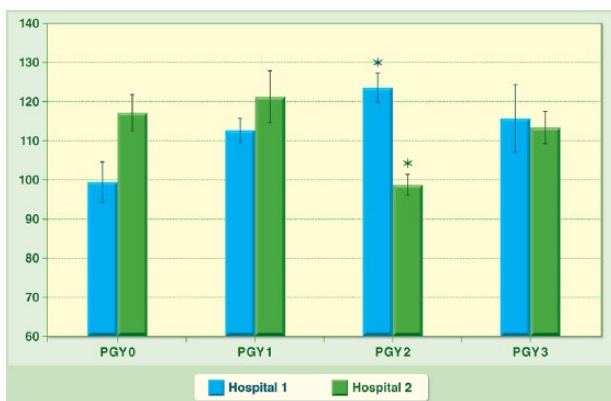
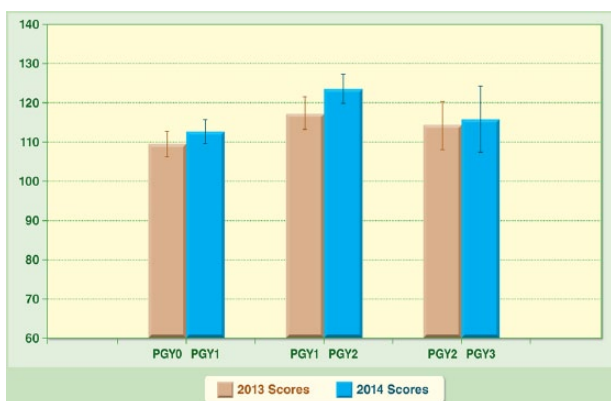
Our study adds to the empathy literature relative to IM residents in that we are assessing residents trained in community teaching hospitals. Other studies of empathy in IM residents were conducted at large academic centers. Community hospital programs reflect a different demographic than large academic hospital programs. In 2 of our allopathic hospitals, trainees are >90% IMGs, whereas the other hospital trains only osteopathic physicians. This demographic is pertinent to the discussion of empathy as almost 40% of IM residents are IMGs.³¹

Empathy scores combined from our 3 programs did not statistically decrease with increased levels of training. There was no statistically significant difference between PGY0, PGY1, PGY2, and PGY3 whose respective scores were 110.4, 116.8, 108.1, and 114.3. These results should be considered exploratory as the small sample size ($n=8-15$) limits the ability to detect differences

Table 1. Mean empathy score of all allopathic international medical graduates and osteopathic US medical graduates by year of training.

	ALL PGY	PGY0	PGY1	PGY2	PGY3
Hospital 1 MDs, IMGs	113.0 (13.2) n=14	99.3 (10.6) n=3	112.5 (6.2) n=4	123.7 (7.6) n=3	115.8 (17.1) n=4
Hospital 2 DOs, US Grads	113.0 (11.6) n=24	117.2 (9.3) n=8	121.2 (13.3) n=4	98.8 (5.4) n=5	113.4 (8.3) n=7
Hospital 3 MDs, IMGs	110.0 (16.9) n=7	105.0 (20.9) n=4	116.7 (9.3) n=3	No data	No data
All hospitals	112.5 (12.72) n=45	110.4 (14.6) n=15	116.8 (9.8) n=11	108.1 (14.1) n=8	114.3 (11.4) n=11

Abbreviations: DO, osteopathic doctor; IMG, international medical graduate; MD, medical doctor; PGY, postgraduate year of training; US Grad, US medical graduate.

**Figure 2.** Internal medicine resident empathy scores by hospital. PGY indicates postgraduate year of training.**Figure 3.** Empathy scores in 2013 and 2014 for hospital 1. PGY indicates postgraduate year of training.

between groups. Scores from our residents were similar to the university-based program studied by Mangione et al.¹⁶ They found residents' empathy scores of PGY1 117.5, PGY2 114.5, and PGY3 113.5. Their study also used the JSPE-HP to measure empathy. Although those researchers had a much larger sample size ($n=98$), the differences in empathy scores between years of training did not reach statistical significance.¹⁶ More recent studies of empathy did not show declining empathy over residents' years of training, but those studies were in pediatrics and mixed specialties.³²

When comparing empathy scores between programs in our study (Figure 2), there was some variation between the 2 hospitals. The differences in PGY2 scores reached statistical significance despite a very small number of respondents ($n=3$ and 4). With small sample sizes and measurements taken at a single point in time, this type of comparison needs further study. For example, although the difference between PGY0 scores was not statistically significant, the absolute difference is striking (mean scores of 101 vs 113). We hypothesize there may be differences in baseline empathy scores between allopathic/IMG and osteopathic interns at the time they begin residency, although this finding would have to be reproduced and studied longitudinally.

Data from Hospital 1 that compared residents' empathy scores from one year with the next did not show any group had a decrease in scores (see Figure 3). This is consistent with our hypothesis that empathy may not decrease over the years of residency training. In our opinion, empathy is being taught through targeted curricula. There are different curricular models in the 3 community hospitals. Although all hospitals included behavioral science in residents' training, hospitals 1 and 3 incorporated block rotations in geriatric medicine, and only hospital 1 extended geriatric education into a 2-year longitudinal experience in nursing homes. Our findings are exploratory due to small sample sizes by PGY level at each hospital.

Study strengths

This is the first assessment of IM resident empathy across multiple community-based hospitals. As such, we believe it is also the first study of predominantly IMGs and osteopathic doctors (DOs). Another strength is that our data were gathered using the Jefferson Scale of Empathy, Health Professionals version. This tool measures the cognitive aspect of empathy in a clinical setting, was designed for use with health professionals, and has been validated.¹

Study limitations

The main limitation of our study is small sample size, which limits our ability to detect differences between groups. A

second limitation is low response rate (35%). The residents who chose to respond may not be reflective of the group in empathy self-assessment. The third limitation is that we assessed empathy at a single time point in the residents' training. The next step for this type of study is to follow a large cohort of residents through their training to assess changes of empathy in individual residents.

Conclusions

Our findings support our pilot study hypothesis that empathy among IM residents may not decrease with increased years of training. Although there is an initial increase in mean cumulative empathy score in the beginning of residents' training, there is also a noticeable decline by the end of training. However, at an individual program, the empathy score by the year of graduation might be higher than that of incoming residents. The differences in empathy trends between different years of training and teaching programs might be related to different targeted curricula. Studies of methods for teaching empathy and larger, longitudinal studies to assess empathy during years of training are needed. Assessing empathy trends during residents' training years may give significant input into modification of empathy teaching methods in existing curricula. That in turn may lead to continuous increase of residents' empathy with the progression of their training.

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Author Contributions

JF and HK contributed to the study concept, design, and coordination and data collection and analysis. JF wrote the first draft of the manuscript, edited, and made revisions. HK contributed to the manuscript revisions, editing, and submission. BLL and BP made study collaboration, data collection and analysis, and manuscript revision and editing. All authors reviewed and approved the final manuscript.

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