Original Article

An Exploratory Study of Empathy in Resident Physicians at an Urban Medical Center

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Abstract

Background: It has been well documented that a physician's empathy diminishes throughout medical school as well as residency. Past studies report that being able to communicate throughout the care of one's patient leads to fewer malpractice claims. Research shows that physician empathy leads to better outcomes and greater patient safety.
Objectives: The aim of this study was assess what factors affect with resident empathy. Over two years, residents at our institution were distributed the Jefferson Scale of Empathy as well as the pre-survey questionnaire.
Methods: Over a two year period, surveys were completed by resident physicians at a single urban teaching university. Empathy was measured using the Jefferson Scale of Empathy and correlation was assessed to 15 different characteristics.
Results: The results from the survey collection were 172 responses out of 477 total residents (response rate of 36%). The largest response came from Internal Medicine at 62 responses. Male residents were found to have higher empathy scores then their female counterparts ($p<0.001$). Our analysis shows that residents with time off prior to medical school ($p=0.009$) and residents without children ($p=0.009$) were found to higher empathy scores than their counterparts. Furthermore our analysis illustrates that there is no significant difference between surgical residents and non-surgical residents empathy score ($p=0.055$).
Conclusions: Our study is the first paper to demonstrate higher empathy score in male resident physicians than their female counterparts. The hope is that if the data in this study is substantiated, with further investigation, our understanding of physician-patient dynamics maybe impacted.

Keywords: empathy, Jefferson scale of Empathy, resident physicians

Introduction

Empathy is the action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experiences of another of either the past or present without having the feelings, thoughts, and experience fully communicated in an objectively explicit manner (Merriam-Webster). There is a no realm of society that empathy is more vital than in the practice of medicine. A physician's empathy for his or her patients is

essential to practicing quality medicine. It has been well documented that a physician's empathy diminishes throughout medical school as well as residency (Mangione, et al., 2002, Hojat, et al., 2001). Past studies report that being able to communicate throughout the care of one's patient leads to fewer malpractice claims (Reiss, et al., 2012). With that, research shows that physician empathy leads to better outcomes and greater patient safety (Reiss, et al., 2012). Therefore, having and displaying empathy for one's patients positively influences patient health.

Several validated tools to measure empathy have been developed. Several of these tools include: the emotional quotient (EQ), the Toronto Empathy Questionnaire (TEQ), and the Jefferson Scale of Empathy (JSE). The Jefferson Scale of Physician Empathy (JSPE) scale is a self-administered, 20-item survey that is answered on a 7-point Likert Scale. JSPE was developed by researchers at the Center for Research in Medical Education and Health Care (CRMEHC) at Jefferson Medical College to measure empathy among, physicians, health professionals, and medical students.

The ability of resident physicians to adopt patient perspective, which depends on empathic concern, is an essential component of care. Research shows that empathy diminishes through medical school and one's residency training (Hojat, et al., 2001). More specifically, empathy diminishes through a single long-call shift (Passalacqua, et al., 2011). Furthermore, resident distress, i.e. burnout, has a significant influence on practice habits, including one's empathy towards his or her patients (Rosen, et al., 2006). Additionally, physician empathy is associated with better outcomes, greater patient safety, and fewer malpractice claims (Reiss, et al., 2012). Therefore, research on physician empathy as well as finding ways to maintain and improve empathy is both ethically and financially necessary. In this study, we measured empathy in resident physicians with the goal of elucidating characteristics that correlate with empathy.

Materials & Methods

We conducted the survey with resident physicians from our urban teaching hospital. The JSPE Empathy Scale was distributed to all residencies at our institution. Non-surgical residencies that participated in the JSPE include: Anesthesia, Dermatology, Emergency Medicine, Internal Medicine, Pediatrics, Psychiatry, Physical Medicine and Rehabilitation, Neurology, Pathology, Preventive Medicine and Radiology. Surgical residencies include: Orthopaedic Surgery, Otolaryngology, Plastic Surgery, General Surgery, Neurosurgery, Urology, Oral and Maxillofacial Surgery, Pediatric Dentistry, and Ophthalmology.

This study received approval from the Institutional Review board. The surveys were distributed with a consent form prior to enrollment. We collected both hard copy and electronically completed questionnaires over a course of two years. In addition to administering the JSPE, residents were also given a pre-survey questionnaire consisting of resident-physician factors that the authors believed might correlate with empathy.

The pre-survey questionnaire consisted of 15 questions: (1) Type of specialty, (2) Post-graduate year, (3) Age, (4) Marital status, (5) Sex, (6) Ethnicity, (7) Children, (8) Country of birth, (9) Religious Affiliations, (10) If there were any breaks in training during medical school or before residency, (11) If yes, what they did with that time, (12) Did he or she attend medical school in New Jersey, (13) Did he or she participate in volunteer activities in residency, (14) Commute time, and (15) Whether or not he or she considers themselves empathic.

There is a specific scoring algorithm for the JSPE. When completed, a total score is provided. The higher the total score, the more empathetic the volunteer... To score the scale: Items 1, 3, 6, 7, 8, 11, 12, 14, 18, and 19 are reverse scored items (i.e., Strongly Agree=1…Strongly Disagree=7), while the other items are directly scored on their Likert weights (i.e., Strongly Disagree=1…Strongly Agree=7). Reverse-scoring the negatively-keyed items ensures that all of the items – those that are originally negatively-keyed and those that are positively-keyed – are consistent with each other, in terms of what an "agree" or "disagree" imply. The total score is the sum of all item scores. The higher the score, the more empathic the behavioral orientation.

A two sample t test was performed to determine whether significant difference existed in terms of their empathy scores between the categorical variables such as gender, specialty type, those

who have children and whether time was take prior to or during medical school. Significant difference is defined by a p-value of less than 0.05. In addition, a point-biserial correlation analysis was performed to determine the relationship between the categorical variable (gender and specialty) and their corresponding empathy score. Statistical analysis was performed using Minitab 15 and SPSS Statistic (Ver 21).

Results

Our results are presented in figures and supplemental material. Figure 1 represents the breakdown among different residencies. The largest response came from Internal Medicine (Figure 2) at 62 responses. Male residents were found to have higher empathy scores then their female counterparts ($p<0.001$) (Fig. 3) as well as linear relationship (Fig. 4). Our analysis shows that residents with time off prior to medical school ($p=0.009$) (SM Fig. 3) and residents without children ($p=0.009$) were found to higher empathy scores than their counterparts (SM Fig. 4). Furthermore our analysis illustrates that there is no significant difference between surgical residents and non-surgical residents empathy score ($p=0.055$) (SM Fig. 1). However, the p-value on the correlation graph shows that there is a linear relationship between the two variables (SM Fig. 2). Since its $P < 0.001$, it shows that they do have a linear relation suggesting surgical residents having higher empathic scores then nonsurgical residents. However, the correlation coefficient (r) is low (0.145) (SM Fig. 2), therefore the strength of the relationship is relatively weak. Our analysis, regarding residents with time off prior to medical school, residents with children, and those with surgical or non-surgical specialty, lacks power from our power analysis. However, our results comparing gender and empathy is significant and with an appreciable correlation.

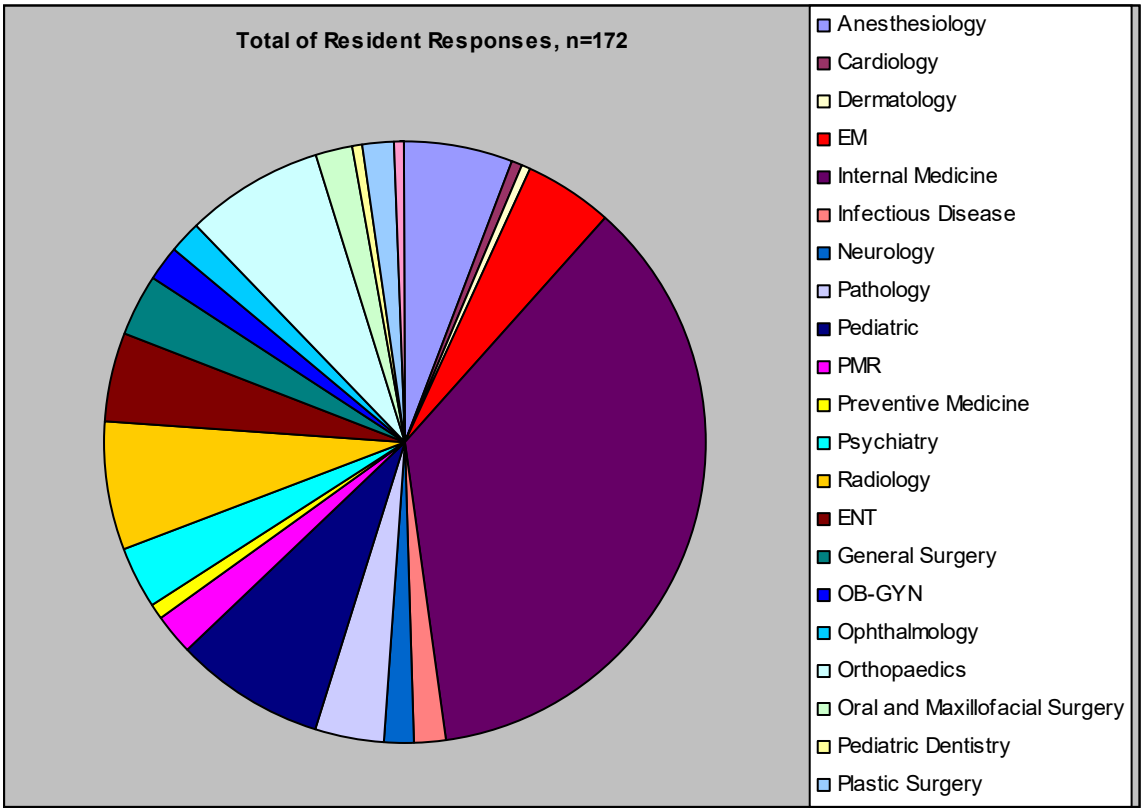
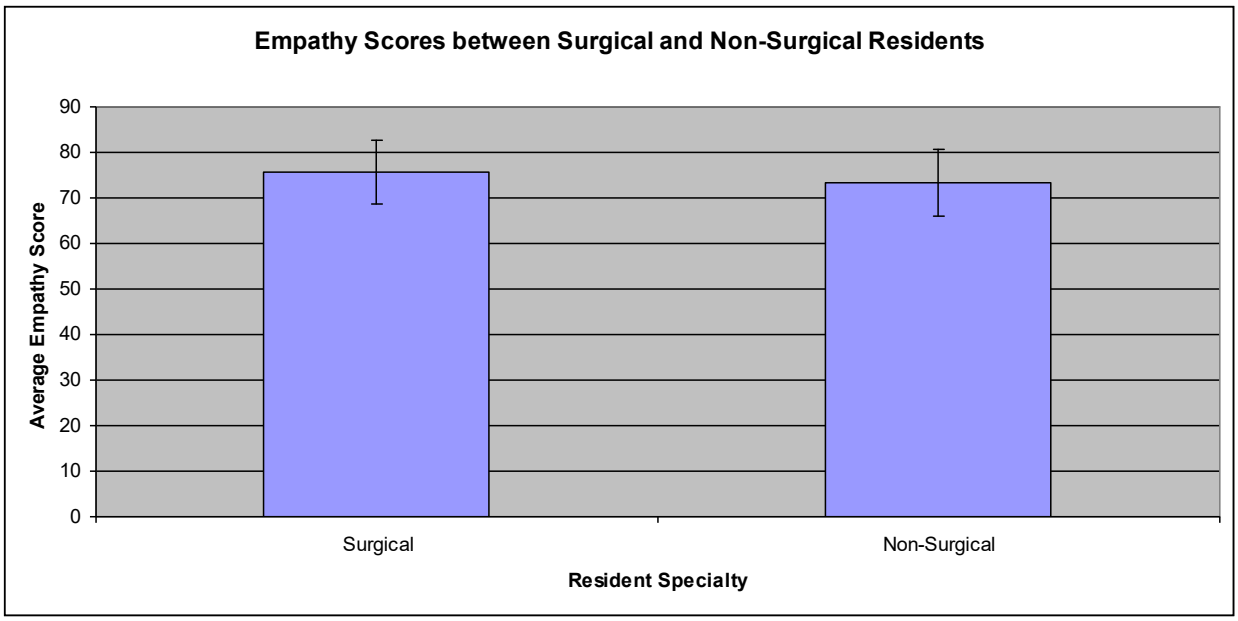
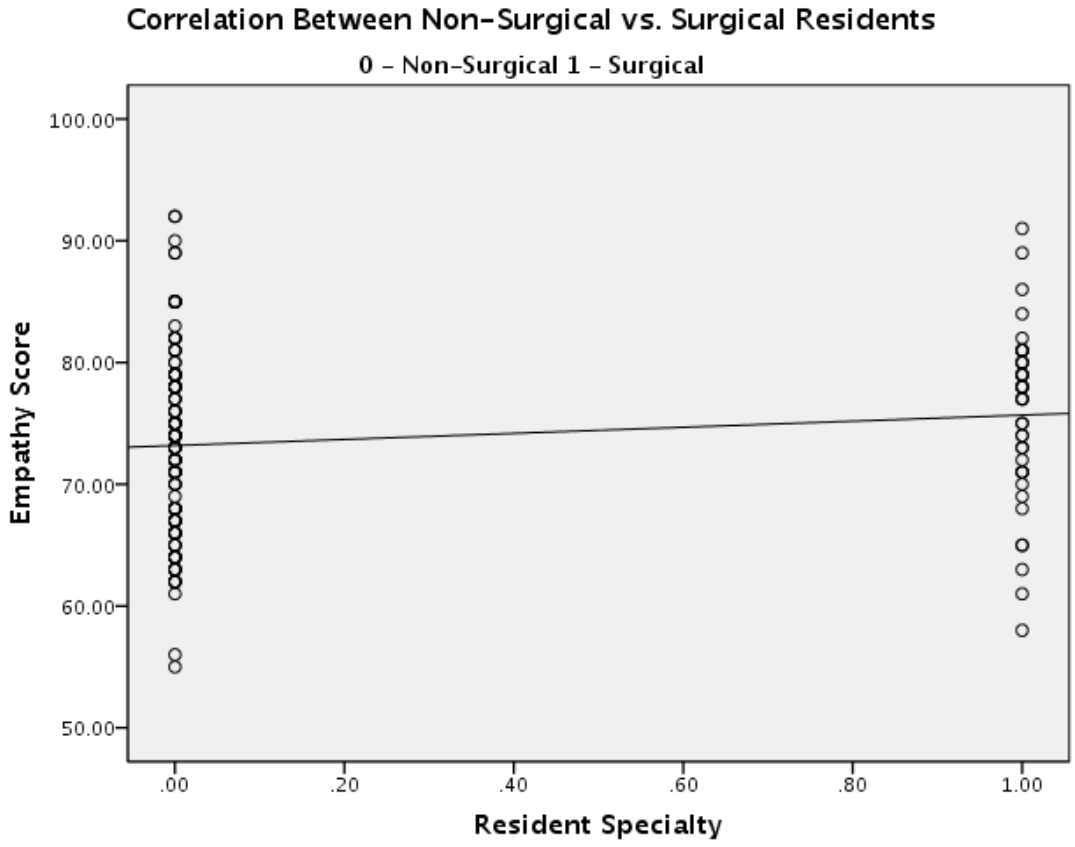


Figure 1: Total Number of Resident Responses per Specialty (172/477=36% Response Rate)



Supplemental Material (SM): Figure 1: Average Empathy Scores between Surgical and Non-Surgical Residents (p=0.055)



Supplemental Material (SM): Figure 2: The graph shows Correlation between Surgical and Non-Surgical Residents (r=0.145, p<0.001)

Figure 2: Jefferson Empathy Scores per Specialty

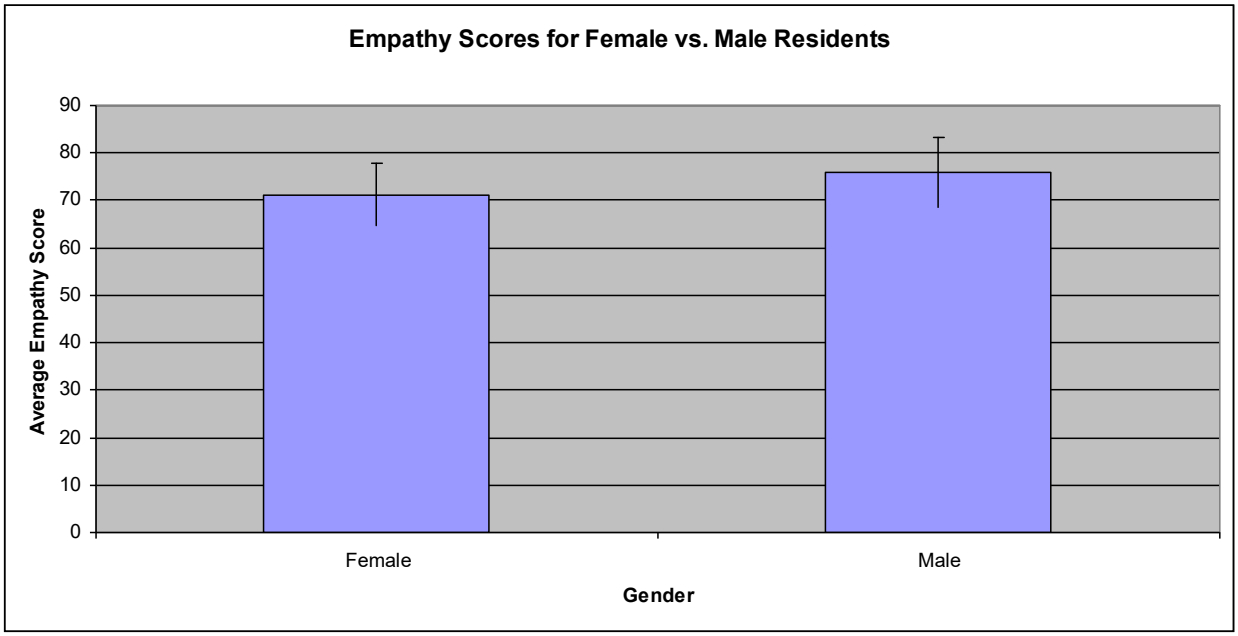


Figure 3: Empathy Scores for Female vs. Male Residents (p=0.001)

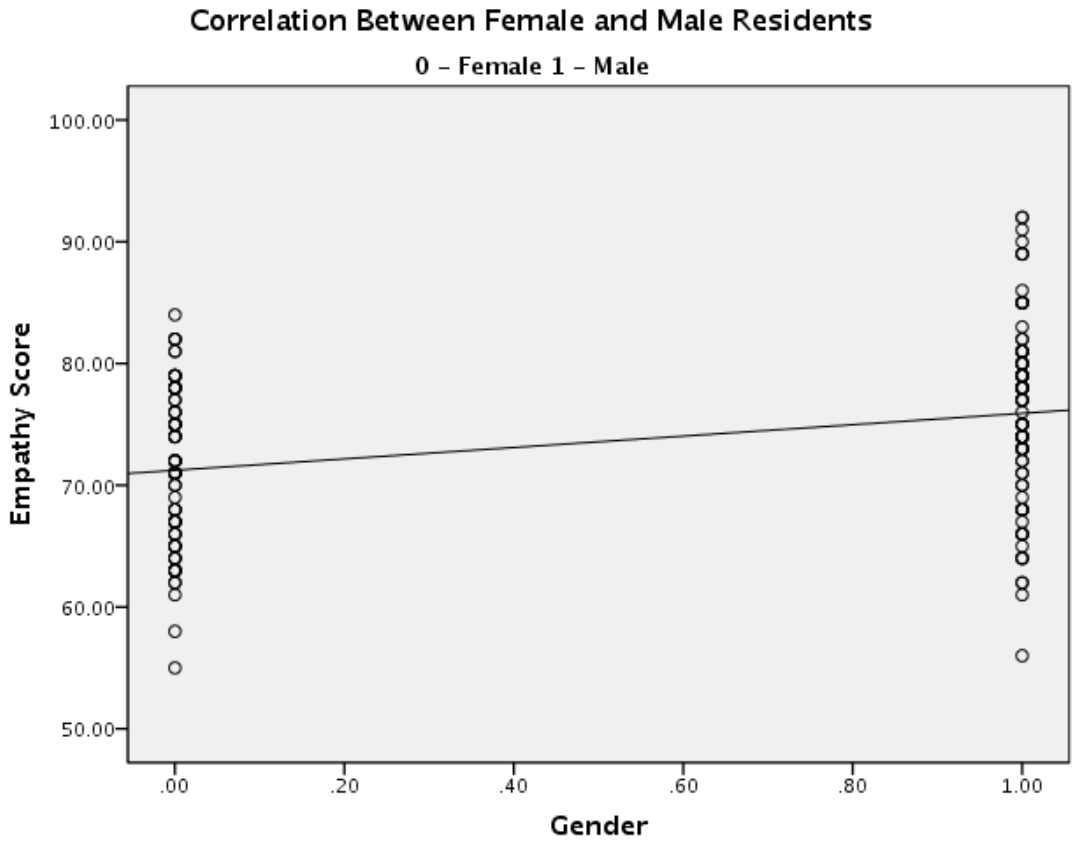
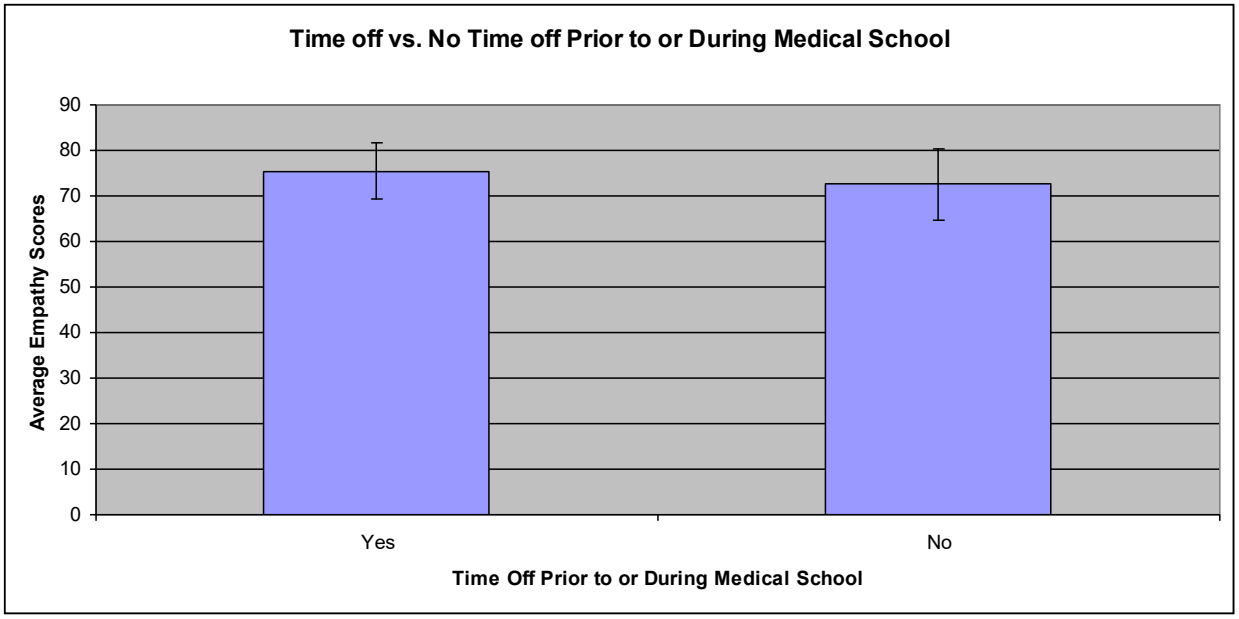
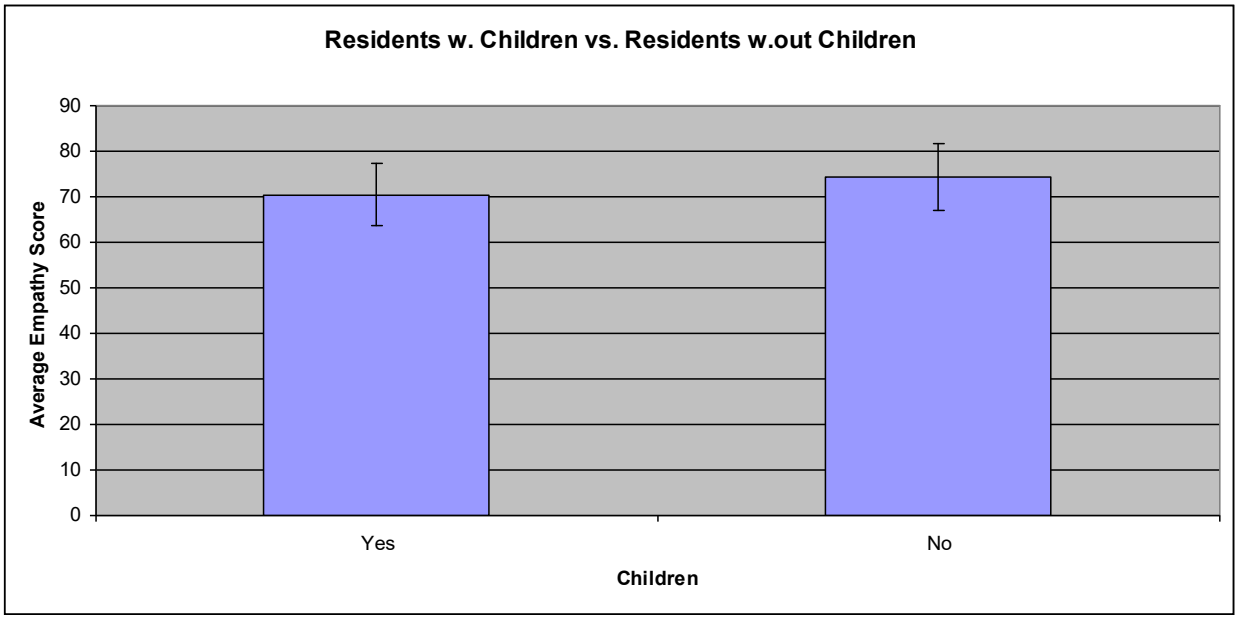


Figure 4: The graph shows male residents have higher empathy score (r=0.315, p <0.001)



Supplemental Material (SM): Figure 3: Average empathy score of residents who have take time off prior to or during medical school and those who have not (p= 0.009)



Supplemental Material (SM): Figure 4: Residents with Children vs. Residents without Children (p= 0.009)

Discussion

The aim of this study was assess what factors affect with resident empathy. Over two years, residents at our institution were distributed the Jefferson Scale of Empathy as well as the pre-survey questionnaire. Research has shown that there are gender differences in empathy that favors female to male medical students (Hegazi, et al., 2013, Fields, et al., 2011, Berg, et al., 2011). Our study showed that male residents were more empathic than their female counterparts. Also preliminary observation indicates residents that took time off prior to medical school and residents without children had higher empathy scores then those with children or who didn't take time off prior to medical school. Perhaps residents without children have more time to devote towards their personal well being and time with their patients making them more empathic. Also, residents that took time off prior to medical school, regardless of reason, are inherently older and might approach their patients in a more empathic manner.

Our study has a few limitations. First, all of the study participants are from the same large university hospital system. Thus, our study may not be applicable to other hospital settings, in a community hospital setting for example. The long-term goals of our study would to be expanding this study to other residencies and other types of hospitals to better assess this study's external validity. Secondly, our response population (172/477=36% response rate) might not be reflective of the entire resident population in this urban hospital setting. Additionally, the residents that chose to respond maybe inherently more empathic in the shear fact that decided to take the time to answer which not is reflective of the norm of resident physician empathy.

Empathy can be defined by some as, "ability to listen to, understand, sympathize with, and provide support to another individual" (Spreng, et al., 2009). In conclusion, the reality of residency is sleep deprivation, student loan debts, long hours, and lack of personal time[10]. However, empathy is paramount to the medical profession. Additionally, research shows that attending physicians' distress influences patient compliance, satisfaction, and quality of care (Thomas, et al., 2007). A resident's personal issues during this difficult time may affect their ability to display empathy towards their patients.

Conclusion

Having empathy towards one's patients contributes to our ability to succeed in emotional communication and pro-social behavior (Spreng, et al., 2009). Our study is the first paper to demonstrate higher empathy score in male resident physicians than their female counterparts. Our future goals include administering an empathy scale to a random sampling of patients and to analyze what factors make patients perceive residents as empathetic. The hope is that if the data in this study is substantiated, with further investigation, our understanding of physician-patient dynamics maybe impacted.

Acknowledgements

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