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Change in Empathy Levels Among Practicing Physician Assistants

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CHANGE IN EMPATHY LEVELS AMONG PRACTICING PHYSICIAN ASSISTANTS

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ABSTRACT

This research sought to determine whether empathy declined with either increased years of physician assistant (PA) clinical experience or increased years of pre-PA healthcare experience (HCE). Although there has been an abundance of research examining empathy level trends among healthcare providers, most of these studies have looked at student empathy and not empathy level changes among practicing healthcare providers. However, among clinical healthcare providers, burnout trends with increasing years of experience (Smith, 2018) and a decline in empathy (Wilkinson, Wittington, Perry, & Eames, 2017); therefore, this project examined the link between years of practice and empathy decline.

This cross-sectional study surveyed the current 122 Bethel University PA Program graduates from 2015 through 2018 utilizing the Jefferson Scale of Empathy- Health Professions (JSE-HP) empathy assessment tool. Demographic, clinical experience, pre-PA HCE, and empathy data was collected from 48 graduates (39% response rate). Mean age of respondents was 28.98 years old; clinical experience ranged from 0.5-4.0 years; and pre-PA HCE ranged from 0-13.0 years. JSE-HP empathy scores ranged from 72 to 136 with a mean score of 115.83.

The research did not show a statistically significant decline in empathy with PAs who had more pre-PA HCE ($r^2 = 0.02$; $P = 0.908$) or as PAs gained years of clinical experience ($r^2 = 0.20$; $P = 0.172$). Consistent with other research, mean female empathy scores (118.84) were higher than their male counterparts (105.73); this difference was highly significant ($P = 0.003$). Participant age was not shown to be a statistically significant factor in predicting empathy level ($P = 0.08$).

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Chapter 1: Introduction

Introduction

"The good physician treats the disease; the great physician treats the patient who has the disease" — William Osler (as cited in Colgan, 2013, p. 66*)*

Inherent in Dr. William Osler's quote about what distinguishes a good physician from a great physician is a commitment to seeing the humanity in a patient who is ill. How can clinicians practice such medicine? Osler suggested a simple approach rooted in establishing human connection: a "kindly word, the cheerful greeting, the sympathetic look--these the patient understands" (Silverman, Murray, & Bryan, 2003, p. 44). When broken down, the components of Osler's concrete suggestions, verbal and nonverbal communication in addition to approach, can be summed up in one word: empathy.

Modern medicine's increasing interest in empathy underscores the medical community's agreement regarding both the importance of empathy to medical practice as well as the concern for its absence in provider-patient relationships. In this chapter, a background on empathy and medicine has been summarized to contextualize the research question. The problem, purpose, and significance of this project are clarified, in addition to a working definition of empathy. Chapter 2: Literature Review frames this research by detailing a more in-depth review of the history and current research on empathy and medicine. This study contributes to current research by quantifying changes in empathy among practicing physician assistants (PAs) with various amounts of clinical experience and pre-PA healthcare experience (HCE).

Background

In 2001, the United States Institute of Medicine (IOM) endorsed a focus on patient centered, empathetic healthcare delivery in a report calling for significant healthcare system

reform. The report argued that reform was needed due to rising healthcare costs, the explosion of technology and scientific information, an increase in diagnosed chronic conditions, the current disorganized state of our health delivery system, and the earth-shattering rise of the internet. For healthcare in the United States to rise to the occasion, healthcare systems needed to prioritize patient-centered and individualized care (Committee on Quality of Health Care in America, 2001). Healthcare delivery and education systems have been grappling with how best to achieve this goal since the report was released (Brenneman et al., 2018).

Since 2000, scholarly research exploring empathy in clinical and health education has increased exponentially (Decety & Fotopoulou, 2015). Studies that examined empathy levels among healthcare providers have demonstrated an alarming trend of declining empathy across many disciplines of healthcare (Mandel & Schweinle, 2012; McFarland, Malone, & Roth, 2016; Ward, Cody, Schaal, & Hojat, 2012). Empathy self-assessment surveys of nursing, medical school, and PA students have shown empathy decline with increased patient exposure (Chen, Lew, Hershman, & Orlander, 2007; Mandel & Schweinle, 2012; McFarland et al., 2016; Ward et al., 2012).

Studies have sought to understand exactly how and to what extent empathy influenced both patient and provider. Despite current research limitations, studies have indicated that increased provider empathy is likely associated with improvement in patient satisfaction, symptom management, treatment adherence, and compliance (Flickinger et al., 2016; Hojat et al., 2011; Howick, Steinkopf, Ulyte, Roberts, & Meissner, 2017; Howick et al., 2018; October, Dizon, Arnold, & Rosenberg, 2018; Shaw, Ibrahim, Reid, Ussher, & Rowlands, 2009; Verheul, Sanders, & Bensing, 2010; Young, Len-Rios, Brown, Moreno, & Cox, 2017). The most recent meta-analysis found that healthcare provider empathy brought “small improvements to a range of

psychological and physical patient conditions, improve[d] overall patient satisfaction with care, without inducing any harm" (Howick et al., 2018, p. 250). Additional studies have indicated declining provider empathy is associated with increased patient grievances and malpractice claims (Cydulka, Tamayo-Sarver, Gage, & Bagnoli, 2011; Rodriguez et al., 2008; Stelfox, Gandhi, Orav, & Gustafson, 2005).

Researchers have also sought to understand the link between healthcare provider burnout and empathy. Studies have shown healthcare providers including physicians and PAs are at risk for experiencing burnout (Coplan, McCall, Smith, Gellert, & Essary, 2018; Dyrbye et al., 2014; Shanafelt et al., 2015). While PAs appeared to have lower rates of burnout and higher rates of job satisfaction than other health professionals (Coplan et al., 2018), a 2018 American Association of Physician Assistants (AAPA) survey found that PAs with five to nine years of experience were most at risk to experience burnout at 32.6% (Smith, 2018). A 2017 meta-analysis of ten studies indicated that these high rates of burnout may be associated with decreased provider empathy (Wilkinson et al., 2017).

Even with this growing body of research, challenges persist in studying healthcare empathy trends. Researchers have identified few empirical studies directly linking deficient health care provider empathy with negative health outcomes (Hojat, 2016a). Inconsistent empathy definitions and different empathy measurement tools have made data interpretation difficult (Hojat, 2016a). Even when measurement tools have been utilized, self-assessment inflation bias has been observed (Floyd, Generous, Clark, Simon, & McLeod, 2015). Additionally, studies examining empathy within the PA profession have been sparse (Brenneman et al., 2018; Floyd et al., 2015; Mandel & Schweinle, 2012).

Problem Statement

Current research has demonstrated a correlation between provider empathy and patient satisfaction and outcomes (Flickinger et al., 2016; Hojat et al., 2011; Howick et al., 2017; Howick et al., 2018; October et al., 2018; Shaw et al., 2009; Verheul et al., 2010; Young et al., 2017). Studies have shown that as healthcare providers, such as PAs, accumulate clinical experience after graduation, burnout levels rise (Smith, 2018); as burnout increases, empathy is negatively impacted (Wilkinson et al., 2017). However, no studies have been identified that specifically examined PA empathy decline during clinical practice.

Purpose

Empathy has been identified as an important component of quality patient care (Flickinger et al., 2016; Hojat et al., 2011; Howick et al., 2017; Howick et al., 2018; October et al., 2018; Shaw et al., 2009; Verheul et al., 2010; Young et al., 2017). While one study noted empathy decline among PA students (Mandel & Schweinle, 2012), no studies could be found that examined PA empathy during clinical practice. However, healthcare provider burnout has been documented within the PA profession (Coplan et al., 2018; Smith, 2018) and burnout has been linked to decreased healthcare provider empathy (Wilkinson et al., 2017). Interestingly, PA burnout peaked among those with five to nine years of experience (Smith, 2018). The link between burnout and empathy led to the following questions: Do PA empathy levels decrease with increased clinical experience? Does increased pre-PA HCE intensify empathy decline? The current study sought to determine whether empathy levels decreased among practicing PAs as they progress in their career. Additionally, the study has collected data regarding other factors that may contribute to changing empathy levels including age and gender.

Significance

According to the Bureau of Labor Statistics (2018), the PA profession is the fifth fastest growing occupation within the United States. PAs have played an increasingly important role in providing quality care to a progressively sicker, older, and more diverse population (Schneider, Sarnak, Squires, Shah, & Doty, 2017). Changing population demographics mean growing demands for healthcare services; coupled with a continuing shortage of physicians, PAs are uniquely poised to fill that gap (Bureau of Labor Statistics, 2018). However, surveys indicated a rising trend of moderate levels of PA burnout as clinical experience increased up to five to nine years (Smith, 2018); thus, elevated burnout may negatively impact empathy among PAs.

While recent studies have noted a decline in empathy during PA school (Mandel & Schweinle, 2012), none have been identified that exclusively examined the extent of empathy decline among practicing PAs. This current research addressed this gap in the literature. Furthermore, this study may be expanded in the future to examine long-term empathy trends. Moreover, other factors that may contribute to empathy change including age, gender, specialty, and spirituality, may be possible topics for future research. This study may assist PA educational programs highlight the importance of empathy in the selection of PA students and focus educational objectives towards the development of empathetic PAs. Additionally, the study may assist healthcare systems identify and support PAs who are most at risk for empathy decline.

Research Question

The following research questions are addressed in this study:

1. Does empathy decline among PAs with increased years of clinical experience?
2. Does empathy decline among PAs with increased years of pre-PA HCE?

The researchers predicted a negative correlation such that increased years of clinical experience was associated with a decline in empathy level. Additionally, the researchers predicted that increased pre-PA HCE was associated with a greater decline in empathy level.

Definition of Terms

The list of terms used for this study as defined below:

Empathy- "a predominantly cognitive (rather than an affective or 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, and an intention to help" (Hojat, 2016a, p. 74).

Cognitive empathy- the ability to understand another's feelings without taking on those feelings (Hojat, 2016a; Jeffrey, 2016).

Emotional empathy- the ability to understand and experience another's feelings (Hojat, 2016a; Jeffrey, 2016).

Sympathy- the "emotion caused by the realisation that something bad has happened to another person" (Jeffrey, 2016, p. 448).

Compassion- "a deep awareness of the suffering of another coupled with the wish to relieve it" (Jeffrey, 2016, p. 448).

Conclusion

Empathy's documented impact on both the patient and the healthcare provider have reinforced the significance of the topic. While a variety of studies have demonstrated a decline in empathy among physicians and other healthcare providers with increased clinical exposure, some researchers questioned the extent of this decline and revealed different results (Bernardo, et al., 2018; Colliver, Conlee, Verhulst, & Dorsey, 2010; Floyd et al., 2015). This study

documented whether empathy levels changed with increasing years of experience among PAs. In congruence with Hojat et al.'s (2001) definition of empathy, the cognitive aspects of empathy were specifically regarded in this study. Delimitations have been set by population access to the graduates of one PA program and increased likeliness of response. The next chapter, Chapter 2: Literature Review, explores research findings, the various ways empathy has been defined, how empathy impacts medicine, and the prevalence of empathy decline.

Chapter 2: Literature Review

Introduction

Empathy has been considered an integral part of a positive provider-patient relationship (Pedersen, 2009). While many within healthcare have advocated for the importance of empathy, empathy decline has been documented among providers and providers-in-training, especially with increased clinical exposure (Chen et al., 2007; Mandel & Schweinle, 2012; McFarland et al., 2016; Ward et al., 2012). This literature review examined the history of empathy within medicine, current research on the definition of empathy, empathy screening tools, empathy levels among healthcare providers, the effects of decreased empathy on patients and providers, as well as how empathy tools may be utilized in admissions criteria among educational institutions.

Rise of Biopsychosocial Medicine

Two different philosophical approaches have shaped modern medicine's approach to patient care and empathy study. Developed by Robert Koch and Louis Pasteur, the biomedical paradigm dominated medicine throughout the twentieth century (Hojat, 2016a). According to Wade and Halligan (2004), this paradigm prioritized a rational approach to medicine which linked diseased states to their biochemical mechanisms of action. Human disease was thought to originate from cellular dysfunction which presented through patient symptoms that could be objectively examined, diagnosed, and treated. Health was considered to be the absence of these abnormalities and patients were expected to passively receive and comply with treatment (Wade & Halligan, 2004). Biological disease processes were emphasized over and above understanding the social and psychological context of the patient (Engel, 1977; Farre & Rapley, 2017; Wade & Halligan, 2004).

This biomedical approach to medicine was pointedly challenged by George L. Engel between 1960 and 1980 (Farre & Rapley, 2017). While the biomedical paradigm had significantly improved the modern understanding of disease and treatment, Engel (1977) argued for a new biopsychosocial (BPS) medical paradigm that incorporated "the social, psychological, and behavioral dimensions of illness" (p. 129). Engel (1977) contended that while medical schools produce physicians highly proficient in technical skills, their patient care skills are criticized as deficient with "little more than the native ability and personal qualities with which he entered medical school" (p. 156).

In challenging the biomedical paradigm, Engel (1977) made six major points. First, he argued the subjective experience of disease was impacted by psychological, social, and cultural factors (Engel, 1977). Second, high level communication skills were needed for medical providers to recognize and interpret each patient's unique symptom presentation (Engel, 1977). Third, psychological, social, and cultural experiences during life impacted the development and progression of disease (Engel, 1977). Fourth, psychological, social, and cultural factors determined when and if an individual identified as sick and became a patient (Engel, 1977). Fifth, individuals who physically recover from a disease may or may not become restored to health depending upon psychological and social factors (Engel, 1977). Finally, the relationship between the patient and provider significantly impacted the outcome of a treatment (Engel, 1977). In conclusion, Engel argued that the ability of a physician to heal required psychologic and social skills that were not recognized in the biomedical approach to medicine (Engel, 1977).

According to Smith, Fortin, Dwamena, and Frankel (2013), the BPS medical model shaped the recognition that health care improved when medicine takes into account each

patient's social and psychological needs. In the 2001 report *Crossing the quality chasm: A new health system for the 21st century*, the Institute of Medicine (IOM) argued for a significant redesign of healthcare delivery in the United States. This report envisioned a medical system driven by a patient-centered approach which focused on healing relationships, individualized care, and patient-driven control (Committee on Quality of Health Care in America, 2001). Since that report, the Association of American Medical Colleges (AAMC), Physician Assistant Education Association (PAEA), and American Association of Colleges of Pharmacy (AACP) have explored revising selection criteria and education curriculum to account for these patient-centered values (Brenneman et al., 2018). The IOM's patient-centered healthcare redesign has resulted in an increasing interest in the study of psychosocial skills such as empathy in medicine.

Definition of Empathy in Medicine

The concept of empathy originated from two different sources, Greek and German. Deriving from the Greek word *empatheia*, empathy has been understood as an appreciation for another's feelings (Hojat, 2016a). From the German word *Einfühlung*, meaning "feeling into," researchers explained empathy as the ability for people to be aware of other's feelings (Hojat, 2016a; Jeffrey, 2016). The concept of another person being able to understand someone else's feelings has been defined as the term empathy.

Plainly speaking, empathy within medicine is "described as appropriate understanding of the patient" (Pedersen, 2009, p. 307). Being person-focused, empathy is comprised of several features including connection, clinical curiosity, another-oriented perspective, self-other differentiation, and care (Jeffrey, 2016). In a clinical setting, a connection involves "emotional sharing with the patient in a two-way relationship" (Jeffrey, 2016, p. 450). A provider is curious in order to "gain insight into the patient's concerns, feelings, and distress" (Jeffrey, 2016, p.

450). By having clinical curiosity, a patient has a sense that they matter to the provider. Also, empathy requires the provider to be other oriented as the provider "tries to imagine what it is like to be the patient", to see the world from the patient's perspective (Jeffrey, 2016, p. 450). Through this perspective, the provider is able to create a self-other differentiation that "respects the patient as an individual with dignity" (Jeffrey, 2016, p. 450). Finally, a provider with empathy cares by "acting appropriately on the understanding gained to help the patient" (Jeffrey, 2016, p. 450). Researchers have emphasized that empathy is a complicated, layered concept (Hojat, 2016a; Jeffrey, 2016).

Empathy has been divided into two main responses: cognitive and emotional. Cognitive empathy is to be able to understand another's feelings without taking on those feelings (Hojat, 2016a; Jeffrey, 2016). The response does not need to be emotional and can be seen as a detached concern for another (Hojat, 2016a; Jeffrey, 2016). On the other hand, emotional empathy involves experiencing the other's feelings (Hojat, 2016a; Jeffrey, 2016). With emotional empathy, a person is able to understand and feel another's emotions (Hojat, 2016a; Jeffrey, 2016). Both the cognitive and emotional aspects of empathy are debated topics among researchers. However, researchers agree that both cognition and emotion are involved in empathy (Hojat, 2016a). Hojat (2016a) explored these cognitive and emotional responses in the comprehensive definition: "Empathy is a predominantly cognitive (rather than an affective or 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, and an intention to help" (p. 74).

Empathy can be confused with sympathy and compassion. The "emotion caused by the realisation that something bad has happened to another person" is sympathy (Jeffrey, 2016, p.

448). Sympathy is imagining what another person has gone through and experiencing emotion (Jeffrey, 2016). Similarly to sympathy, compassion is also when a person responds emotionally when something bad has occurred to another (Jeffrey, 2016). The difference being that compassion involves "a deep awareness of the suffering of another coupled with the wish to relieve it" (Jeffrey, 2016, p. 448). Empathy includes "elements of sympathy and compassion, but it also carries pertinent connotations that both sympathy and compassion lack" (Jeffrey, 2016, p. 449). Empathy is "a skilled response, while sympathy and compassion are reactive responses" (Jeffrey, 2016, p. 449). Moreover, empathy "connotes not just reactive distress at another's suffering but considered, justified and hence rational distress" (Jeffrey, 2016, p. 449). Empathy truly sees "the world from the patient's perspective" (Jeffrey, 2016, p. 450).

Empathy Screening Tools

Multiple surveys have been utilized to measure healthcare provider empathy. The most common empathy tools used by researchers are the Interpersonal Reactivity Index-Empathy Concern subscale (IRI-EC), the Jefferson Scale of Physician Empathy (JSPE), and the Balanced Emotional Empathy Scale (BEES) (Colliver et al., 2010). All three tools measure empathy through self-assessment (Colliver et al., 2010).

Each self-assessment tool is structured differently. The IRI-EC is the measure of dispositional empathy consisting of four subscales (Davis, 1983). These subscales are perspective taking, empathetic concern, personal distress, and fantasy scale (Davis, 1983). The BEES assessment tool is a 30-point questionnaire where subjects rate the degree of agreement or disagreement of a statement (Colliver et al., 2010). The JSPE is a 20-item scale that is designed to measure empathy in practicing providers and health care students (Colliver et al., 2010). Currently, the JSPE is the most psychometrically sound empathy assessment tool; therefore, it is

the most commonly used tool for empathy assessment in healthcare research (Hojat, Gonnella, Mangione, Nasca, & Magee, 2003). The JSPE was one of the first psychometrically sound scale developed to measure empathy among healthcare providers (Hojat et al., 2003). Several versions of this scale exist. A version of the JSPE is available for medical students (the S-version) and another for healthcare providers (the HP-version).

Challenges to Studying Empathy

Empiric studies of the relationship between empathy and patient outcomes have been few and challenging to interpret (Ekman & Krasner, 2017). Proponents of the biomedical paradigm have argued research involving social related concepts such as empathy are unable to be tested and therefore do not meet true scientific standards (Smith et al., 2013). Additionally, researchers have not utilized consistent empathy definitions or standardized measurement tools in their attempt to link empathy with patient care outcomes (Hojat, 2016a). Not having consistent definitions or standardized measurement tools have made evaluating existing research and coordinating future research difficult (Hojat, 2016a). Finally, self-assessment inflation bias has been observed with healthcare providers who use these tools (Floyd et al., 2015).

The theoretic link between healthcare provider empathy and improved health outcomes has historically focused on the concept of trust. In his work, *Empathy in health professions education and patient care*, Hojat (2016a) exemplified this view by arguing that trust between healthcare providers and patients results in a "more precise medical history and thus more accurate diagnostic information and greater compliance" (p. 190). Hojat (2016a) argued this theoretical link between empathy and improved health outcomes needs further coordinated empirical analysis. Because the link between empathy and health outcomes have predominantly

been studied within social science settings, Hojat (2016a) has argued for expanded empirical research in medical and surgical science healthcare settings.

Impact of Empathy on Patient Outcomes

With developed standardized tools to measure empathy (Hojat, 2016a), empiric research has sought to more thoroughly examine the link between empathy proficiency and improved health outcomes. Two different lines of research have examined the link between empathy and health outcomes. Most research has focused on studying the impact of empathetic communication in improving health outcomes (Howick, et al., 2018; October et al., 2018; Verheul et al., 2010; Young et al., 2017). However, other studies have focused on examining if empathetic healthcare providers have improved health outcomes as compared to non-empathetic healthcare providers (Flickinger et al., 2016; Hojat et al., 2011). While the current body of research is relatively small and more study is needed, initial efforts indicated that empathy improved patient satisfaction, symptoms, treatment adherence, and treatment compliance while it decreased malpractice claims (Hojat, 2016a).

A recent 2018 meta-analysis examined 28 randomized trials between 1987 and 2017 in which empathy communication interventions were utilized (Howick et al., 2018). The examined trials were conducted in the United States, Europe, China, and Japan. The examined interventions were for patients with chronic pain, post-op pain, Parkinson's disease, cancer, osteoarthritis, asthma, irritable bowel syndrome (IBS), and a variety of other illnesses (Howick et al., 2018). Results of the analysis concluded that communicating empathy decreased patient's pain and anxiety by a "small amount" (Howick et al., 2018, p. 249). Most significantly, the study found that empathetic pain interventions were responsible for "a 1-to 2-point reduction in pain on a 10-point visual analog scale" (Howick et al., 2018, p. 249). Additional benefits

included improved physical outcomes for asthmatic and post-operative patients, improved patient satisfaction, and improved quality of life (Howick et al., 2018). The meta-analysis concluded that the effects of empathy interventions "appear to be similar to those of many common pharmacological treatments for the conditions" though "a clear grasp of the best and most cost-effective approaches to practitioner training in empathic and positive communication is now required to optimize how we implement this evidence" (Howick et al., 2018, p. 250).

Additional studies examining empathetic communication not included in this meta-analysis were noteworthy. A recent cross-sectional survey of 452 adult participants diagnosed with asthma found that patient adherence to treatment was affected by healthcare provider empathic communication (Young et al., 2017). Healthcare provider communication was "positively and directly associated with patient's understanding of asthma self-management, agreement with providers, trust, involvement in care, and motivation" (Young et al., 2017, p. 700). Non-verbal cues such as smiling, nodding, facial expressiveness, engaged listening, and positive reinforcement were linked to increased trust and motivation with patients (Young et al., 2017). The study noted the importance of empathic cultural communication as African American and Hispanic respondents showed less understanding and involvement in care (Young et al., 2017).

In addition to improved patient outcomes, provider empathetic communication has been linked to improved patient satisfaction (Shaw et al., 2009). A recent study of thirty physicians determined that even when empathy was communicated, these statements were often "buried" by medical jargon, close ended questions, or comments from other healthcare providers (October et al., 2018, p. 3). During 68 pediatric intensive care unit (PICU) conferences, these physicians averaged 2.8 empathetic statements during each session (October et al., 2018). Providers buried

their empathetic statements 38.5% of the time, primarily through immediate use of medical jargon (October et al., 2018). Families responded positively 12.1% of the time with practitioners who buried empathetic statements (October et al., 2018). Unburied empathetic statements elicited positive responses from family members 71.4% of the time (October et al., 2018).

Other researchers have expanded the scope of this research beyond studying empathetic communication and sought to show that empathetic healthcare providers have better patient outcomes. A significant study examined the link between physician empathy ratings and improved A1c and LDL-C scores in 891 diabetic patients (Hojat et al., 2011). In the study, 31 physicians were ranked as possessing high, medium, or low empathy according to their score on the JSPE. The study determined that patients with highly empathetic physicians managed their diabetes more effectively (Hojat et al., 2011).

Medical adherence rates have also been shown to improve with patients who see empathetic healthcare professionals (Flickinger et al., 2016). Flickinger et al. (2016) examined the medical adherence rates of 435 adult HIV patients who received care from 55 different healthcare providers. The healthcare providers included in the study were physicians, nurse practitioners, and PAs. Based on a self-assessment Emotional Intelligence Quiz, healthcare providers were ranked on a 1-5 scale of empathy (Flickinger et al., 2016). Researchers compared healthcare provider empathy with reported patient ratings of clinician communication, satisfaction, and medication self-efficacy (Flickinger et al., 2016). The study determined patients seen by empathic healthcare providers demonstrated higher medication management than those seen by low empathy scoring healthcare providers (Flickinger et al., 2016).

In addition to improved patient satisfaction, treatment adherence, and treatment compliance, researchers have sought to understand the link between healthcare provider empathy

and malpractice claims. Studies appear mixed on this subject (Cydulka et al., 2011; Stelfox et al., 2005). Stelfox et al. (2005) reviewed satisfaction surveys, complaints, and legal documents for 353 physicians across a range of specialties from 2001 to 2003. Cydulka et al. (2011) reviewed patient surveys, complaints, and risk management episodes for 463 emergency department physicians covering eight states from 2002 to 2006. Both studies sent satisfaction surveys to patients which involved questions regarding empathy and analyzed the results. Stelfox et al. (2005) satisfaction surveys included questions about physician time management, empathy, communication, and skill level while Cydulka et al. (2011) surveys asked questions regarding the physician's courtesy, listening ability, concern for comfort, and communication.

Both Cydulka et al. (2011) and Stelfox et al. (2005) found that a small percentage of physicians generated a disproportionate number of complaints and litigation. However, the two studies differed on whether physicians with lower patient survey ratings faced greater litigation risks. Stelfox et al. (2005) determined that physicians with low patient satisfaction ratings had more complaints and malpractice lawsuits than physicians with high satisfaction ratings. Cydulka et al. (2011) determined that low patient satisfaction ratings were not predictive of increased litigation. Researchers instead found that patient complaints, not patient satisfaction surveys, identified physicians who were at risk for litigation (Cydulka et al., 2011). Differences between these two studies may be attributed to the specialties of the studied physicians. Cydulka et al. (2011) exclusively studied emergency physicians who had brief, intense patient encounters without the benefit of building long term patient-client relationships while Stelfox et al. (2005) studied all physicians regardless of specialty.

Another study which examined patient complaints, malpractice lawsuits, and patient experience surveys for 161 physicians over eighteen months came to a slightly different

conclusion (Rodriguez et al., 2008). Researchers determined that physicians with higher rated quality interactions by patients were less likely to receive formal complaints. However, the link between increased malpractice claims and healthcare provider communication could not be made due to the low number of malpractice claims (Rodriguez et al., 2008).

Link Between Empathy and Burnout

Researchers have agreed that there appears to be a link between healthcare provider empathy and burnout (Wilkinson et al., 2017; Zenasni, Boujut, Woerner, & Sultan, 2012). While the exact relationship between empathy and burnout has not been extensively studied (Zenasni et al, 2012), the most comprehensive systematic review on the topic indicated that increased healthcare provider burnout is associated with declining empathy (Wilkinson et al., 2017). Widespread healthcare provider empathy levels have been difficult to determine (Howick et al., 2017). However, a significant amount of research has shown that burnout is pervasive among physicians and PAs (Coplan et al., 2018; Dyrbye et al., 2014; Tetzlaff, Hylton, DeMora, Ruth, & Wong, 2018; Shanafelt et al., 2015). While no research could be found linking PA burnout with empathy decline, high burnout levels observed in PA practice may be associated with declining empathy levels.

What is the precise relationship between healthcare provider empathy and burnout? Researchers have sought to understand whether burnout promotes empathy decline or whether increased empathy promotes burnout (Zenasni et al., 2012). Wilkinson et al. (2017) has conducted the most comprehensive meta-analysis exploring the link between healthcare provider burnout and empathy. Researchers initially screened 673 records on the topic with the majority being excluded because they did not use an objective measure, had no target population, were qualitative in nature, or were not written in English (Wilkinson et al., 2017). The ten remaining

studies completed between 1992 and 2017 were then analyzed to determine if a positive or negative relationship existed between burnout and empathy (Wilkinson et al., 2017). All studies were cross-sectional and studied populations included nurses, physicians, mental health workers, and non-surgical/surgical medics (Wilkinson et al., 2017). Researchers noted challenges in data interpretation because the objective tools used to measure empathy and burnout were not consistent across the ten studies (Wilkinson et al., 2017).

The analysis concluded that a likely negative association existed between healthcare provider burnout and empathy (Wilkinson et al., 2017). Researchers noted increased burnout likely led to decreased empathy in outpatient and inpatient settings across healthcare professions (Wilkinson et al., 2017). A positive association indicated that high levels of empathy were associated with increased burnout garnished weak support in the meta-analysis (Wilkinson et al., 2017). While extensive data exists regarding burnout in the healthcare professions, Wilkinson et al. (2017) noted empathy measurement challenges and advocated for a standardized empathy measurement tool which would "capture empathy more accurately" (p. 28).

Recognizing empathy measurement challenges, few studies have examined wide-spread empathy levels among healthcare providers (Howick et al., 2017). However, with the likely negative association between burnout and empathy (Wilkinson et al., 2017), increased burnout in healthcare providers may be indicative of declining empathy (Zenasni et al., 2012). Studies have shown that physicians and PAs experience moderate to high rates of burnout (Coplan et al., 2018; Dyrbye et al., 2014; Shanafelt et al., 2015). Additionally, early career healthcare providers appear to be especially susceptible to increased burnout (Dyrbye et al., 2014; Smith, 2018).

Burnout within physician practice and education has been studied extensively (Dyrbye et al., 2014; Shanafelt, et al., 2015). A recent Mayo Clinic Proceeding study sought to examine the

extent of physician burnout within the United States (Shanafelt et al., 2015). Researchers developed a survey which collected demographics, hours worked, burnout, depression and suicidality, and work-life balance data from physicians in 2011 and 2014. The data was analyzed and compared to the general public. The study identified a 10% increase in physician burnout across all specialties over the last three years and an 8% decrease in work life balance satisfaction (Shanafelt et al., 2015). By 2014, the study found that 48.8% of physicians were burned out and 40.9% felt their work prevented them from maintaining a healthy work life balance (Shanafelt et al., 2015). In another study examining physician burnout using a similar survey, Dyrbye et al. (2014) determined early career physicians with less than five years of practice were at high risk for experiencing burnout. The study found 51.4% of early career physicians identified as burned out with 50.3% reporting high fatigue (Dyrbye et al., 2014). In comparing these results with the general public, both studies determined physicians were at greater risk for burnout (Dyrbye et al., 2014; Shanafelt et al., 2015).

Burnout has also been noted in the PA profession (Coplan et al., 2018; Smith, 2018). Compared to physicians, the most recent peer-reviewed analysis of PA burnout and job satisfaction provided a more positive picture for PAs (Coplan et al., 2018). In examining the 2016 AAPA salary survey, Coplan et al. (2018) found that over 75% of PAs were happy with their work. However, 30% of PAs reported that they quit a job in the past due to stress, 21.4% reported some degree of cynicism, and 10.4% reported a low sense of personal accomplishment (Coplan et al., 2018). Additionally, a recent survey of oncology PA's revealed that one in three experienced burnout (Tetzlaff et al., 2018). According to specialty, PAs practicing in emergency medicine ranked highest in burnout (34.5%) while those within pediatric specialties (20.3%) and without specialties (21.0%) had the lowest rates (Smith, 2018).

Information from the 2018 AAPA salary survey revealed the most up to date data regarding PA burnout, clinical experience, and gender differences (Smith, 2018). Burnout level peaked among PAs with 5 to 9 years of experience (32.6%) before levels started to downtrend (Smith, 2018). In contrast, Gleichgerrcht and Decety's (2013) survey of physicians found clinical experience did not impact other measures of professional quality of life, including compassion satisfaction, secondary traumatic stress, or burnout after controlling for the effects of age and gender. The AAPA survey did not control for the possible effect of gender. Studies have found burnout is higher among female PAs (Essary et al., 2018). Female PAs made up a 68.8% majority of the profession at the time of the survey (National Commission on Certification of Physician Assistants [NCCPA], 2018).

With the association between burnout and empathy (Wilkinson et al., 2017), burnout rates among PAs may be associated with empathy decline. These studies have shown clinical experience, specialty, and gender impact burnout; therefore, these factors may be associated with empathy level as well. However, no studies were identified which explicitly examined empathy and burnout levels among practicing PAs.

Prevalence of Empathy Decline

Many studies have reported that empathy among students of healthcare professions across the board is on the decline (Chen et al., 2007; Mandel & Schweinle, 2012; McFarland, et al., 2016; Ward et al., 2012; Williams et al., 2014). Spanning up to eight different healthcare professions, from nursing to paramedic students to PA and medical students, empathy was demonstrated to decline as students progressed through their program (Chen et al., 2007; Mandel & Schweinle, 2012; McFarland et al., 2016; Ward et al., 2012; Williams et al., 2014). Researchers found that empathy levels decreased as students gained increasing patient contact

experience through their education (Chen et al., 2007; Mandel & Schweinle, 2012; McFarland et al., 2016; Ward et al., 2012). However, there are currently no studies that observed empathy level trends over time among practicing healthcare providers.

Even within professions, such as nursing, that have hailed patient-centered care as the hallmark of their field, students struggled with empathy decline (Ward et al., 2012). In a longitudinal study of nursing students from various nursing programs, Ward et al. (2012) found that empathy decline was greater among students with more patient exposure after one academic year. Students in the last year of their program who had accumulated more clinical experience (6 months to 1 year) demonstrated a greater decrease in empathy than students in the first year of their program with limited clinical experience (Ward et al., 2012). Furthermore, students who entered the program with prior clinical experience also demonstrated greater empathy decline compared to their peers who did not have prior experience (Ward et al., 2012). Additionally, certain undergraduate majors were found to be more impacted by empathy decline; students with science and business undergraduate degrees had greater decline in empathy compared to humanities students (Ward et al., 2012).

Studies showed medical residents and PA students experienced similar empathy decline during their clinical phase of training (Chen et al., 2007; Mandel & Schweinle, 2012; McFarland et al., 2016). Chen et. al (2007) found that the average empathy level among medical students was highest among first year students and lowest among fourth-year students. Empathy decline was first noticed during the third year of the program when students are undergoing their first year of clinical rotations and the loss continued through the fourth year of school (Chen et al., 2007). This finding stands in contrast to Ward et al.'s (2012) study where nursing students continued to experience loss with increasing patient exposure. Researchers also found that

students who preferred people-oriented specialties in medicine (i.e., family medicine, internal medicine, pediatrics, etc.) had higher empathy levels than students who preferred technology-oriented careers (i.e., pathology, surgery, radiology, etc.) (Chen et al., 2007).

A longitudinal study that evaluated empathy among PA students found consistent decline as students progressed through their program (Mandel & Schweinle, 2012). PA students' empathy levels were lower during their clinical training in comparison to the beginning of the program, the didactic phase (Mandel & Schweinle, 2012). The observed empathy loss among PA students did not continue to decline during the PA students' clinical training even with increased patient exposures (Mandel & Schweinle, 2012), similar to medical students (Chen et al.2007). Mandel and Schweinle (2012) also investigated whether empathy levels differed by nontechnical vs. technical career preferences among PA students, but did not find a significant difference-a departure from Chen et. al's (2007) study. Unlike nursing students (Ward et al., 2012), the authors did not find that Pre-PA HCE was associated with empathy level among PA students.

The nuanced discrepancies in the findings of these three particular studies point to how empathy may be impacted by differences in training and workplace context across different health professionals. A study examining 1,111 students across eight different healthcare professions in Australia found paramedic students had lower empathy scores, with the exception of nursing students (Williams et al., 2014). The authors suggested the unpredictability and dangers of the paramedic work environment and requirement for emotional self-regulation may explain their lower empathy levels (Williams et al., 2014).

Acute empathy decline has also been noted during times of high distress when providers are exposed to significant events such as patient deaths (McFarland et al., 2016). Among

resident physicians and medical student interns on a hematology-oncology unit, empathy decline was acutely exhibited over the course of just two to four weeks (McFarland et al., 2016). Additionally, medical trainees who cared for an average of 4.28 dying patients during rotation consistently measured high in distress (McFarland et al., 2016). Researchers noted this may indicate a possible connection between high distress and empathy decline (McFarland et al., 2016).

While many studies were consistent in demonstrating decreased empathy among students of healthcare professions, not all studies followed this model of empathy decline (Aparicio et al., 2018). In a cross-sectional survey of 756 medical students at a Colombian educational institution, empathy levels actually increased from the first-year to the fifth-year cohorts (Aparicio et al., 2018). In other words, fifth-year students' empathy scores were higher than first-year students (Aparicio et al., 2018). However, the authors note that overall empathy scores were low compared to other studies (Aparicio et al., 2018).

Colliver et al. (2010) went one step further and reexamined the results of 11 studies from 2000 to 2008 that reported decreasing empathy among medical students. Empathy decline was found to be weak with an average decrease of only 0.2%. Response rates were low, threatening the generalizability of those findings (Colliver et al., 2010). Moreover, the authors criticized previous studies' inference that empathy self-assessment tools actually reflect patient perception of physician empathy (Colliver et al., 2010). The majority of research on the topic have made conclusions about empathy decline based on student or provider self-assessment, not based upon the assessment of patients themselves.

The few studies that have compared healthcare provider self-assessment of empathy to patient perception of provider empathy reveal an incongruence between the two (Bernardo et al.,

2018; Floyd et al., 2015). A systematic review analyzed 64 studies that spanned 15 different countries, revealing that overall patient ratings of provider empathy were within the lowest five percent of standard scores (Howick et al., 2017). Furthermore, provider empathy levels were highly variable. Female healthcare providers were rated 16% higher on empathy than their male peers, but consultation time was the only predictor of empathy effectiveness as rated by patients (Howick et al., 2017). Additionally, the review revealed health professionals who were not doctors, dentists or nurses had the highest patient empathy ratings while physicians were scored the lowest (Howick et al., 2017). Geographically, the highest ratings were found in the United States, Australia, and the United Kingdom (Howick et al., 2017). The authors did not offer any interpretation to the systematic review findings.

Studies comparing physician empathy self-assessment and patient rating of physician empathy revealed even students of PA studies demonstrated a self-assessment inflation bias in empathy (Floyd et al., 2015). In three different simulated patient encounters across the span of six months, PA students consistently rated themselves higher in empathy than their patients, instructors, and third-party observers (Floyd et al., 2015). Contrary to the many studies purporting an empathy decline, Bernardo et al. (2018) found no correlation between physician self-assessment and patient assessment of physician empathy. In other words, the data did not indicate that a decrease in self-reported physician empathy correlated with lower patient ratings of physician empathy (or vice versa) (Bernardo et al., 2018). Instead, the researchers suggested other methods of physician empathy, in addition to self-assessment, may be necessary to better capture the physician-patient experience (Bernardo et al., 2018).

Empathy as an Admissions Criteria in Educational Programs

Recognizing the importance of non-cognitive skills in improving health outcomes, increasing emphasis has been placed on non-cognitive skills, such as empathy, in selection and training of medical professionals. The AAMC and AACP have both revised admissions criteria to consider non-cognitive skills in selection (Brenneman et al., 2018). In 2017, the PAEA followed suit and formally examined which "non-cognitive attributes are needed for success through the continuum from matriculation to clinical practice for PA's" (Brenneman et al., 2018, p. 25). Identified non-cognitive skills include empathy, ethical responsibility, oral communication, teamwork, critical thinking, resilience and adaptability, cultural competency, realistic self-appraisal, situational judgement, and professionalism (Brenneman et al., 2018). The JSPE was recommended as a potential tool for PA school admissions screening (Brenneman et al., 2018).

Conclusion

Empathy has always been a core component in the practice of medicine, historically emphasized more in fields like nursing and primary care over other specialties, but still maintained as integral to all of healthcare. The IOM's landmark report by the Committee on Quality of Health Care in America (2001) re-emphasized the patient experience in healthcare and helped spur interest for further research of empathy within healthcare. Researchers first grappled with understanding and defining empathy within the medical sciences, turning to the social sciences for assistance. Hojat is perhaps the most notable researcher on the topic, offering a concise definition and psychometric empathy tools, all specific to healthcare providers (Hojat et al., 2003; Hojat et al., 2011; Hojat, 2016a).

Studies on the impact of empathy in healthcare have demonstrated a link between increased burnout and low empathy among healthcare providers (Wilkinson et al., 2017). Conversely, higher empathy levels were associated with improved patient outcomes (Flickinger et al., 2016; Hojat, et al., 2011; Howick et al., 2018; October et al., 2018; Shaw et al., 2009; Stelfox et al., 2005; Young et al., 2017). The decline of empathy as related to increased clinical experience has been demonstrated in several studies among different healthcare provider trainees, although other studies contradict and criticize those findings (Bernardo, et al., 2018; Colliver et al., 2010; Floyd et al., 2015).

Nonetheless, professional associations such as the AAPA, AAMC and AACP have heeded these studies and called for an increased focus on empathy as a desired quality with some organizations advocating explicitly incorporating empathy education into program curricula (Brenneman et al., 2018). While empathy levels among healthcare students is worth examining, this population is overrepresented in the research. More research on empathy among practicing providers is clearly needed to better assess the current empathy trend. Furthermore, there is little research on the relationship between years of clinical experience among practicing healthcare providers and empathy level. In response, this study examined empathy levels among practicing PAs with varying years of experience to help define the trajectory of empathy. The design for this study is explored in further detail in Chapter 3: Methodology.

CHAPTER 3: METHODOLOGY

Introduction

The purpose of this study was to evaluate empathy level among PA alumni of a Midwestern university PA program. A cross-sectional design assessed the effect of years of clinical experience and pre-PA HCE on empathy level. The following research questions were addressed through this study:

1. Does empathy decline among PAs with increased years of clinical experience?
2. Does empathy decline among PAs with increased years of pre-PA HCE?

This chapter addresses the rationale and details for the selected target population, instrumentation and survey materials, study design, procedures regarding survey administration and data storage, data analysis, and limitations and delimitations.

Study Population

The targeted population for this study were the current 122 graduates of Bethel University's PA program from 2015 through 2018. As current students at Bethel University, the researchers selected this target population due to ease of access to the graduates through the Program Director. Additionally, it was believed the survey would have a higher response rate if sent by researchers from the participants' alma mater. Prospective participants were included in the study if they graduated from Bethel University's PA program. Participants were excluded from the study if they indicated they are not currently practicing PAs. No other criteria for exclusion or inclusion were indicated. An email was sent to the acting director of Bethel University's PA program requesting access to the population and permission was granted on January 18, 2019 (Appendix A).

Materials and Instrumentation

The study's population was surveyed to collect data regarding demographics, extent of pre-PA HCE, and empathy level. The researchers distributed the informed consent (Appendix B) and the survey (Appendix C) via email in order to collect the following information:

1. Demographic Information: Age, gender, and ethnicity.
2. Current Practice: Current PA practice status.
3. PA Clinical Experience: Total number of years the individual has practiced as a PA.
4. Pre-PA HCE: Total number of years of HCE before entering PA school.
5. Empathy Assessment: Jefferson Scale of Empathy- Health Professions (JSE-HP) 20 question Likert scale self-assessment.

Demographic, current practice status, years of PA clinical experience, and years of pre-PA HCE data were collected at the beginning of the survey. Gender and age data were collected for the purposes of sample representation and generalizability to the larger PA population. Current practice status as a licensed PA was collected as this was an exclusion criterion. Both total number of years of PA clinical experience and total number of years of pre-PA HCE data were collected as independent variables of the study.

Empathy levels of the target population were surveyed with the JSE-HP tool. Approval to administer 122 JSE-HP surveys to the study's target population via secure website was approved by Thomas Jefferson University on January 22, 2019 (Appendix D). The JSE-HP scale consisted of 20 questions which assessed three underlying empathy factors: perspective taking, compassionate care, and standing in a patient's shoes (Hojat, 2016b). Items were answered on a seven-point Likert-type scale. Likert scale items were scored based upon their assigned value, varying from one to seven (i.e., Strongly disagree=1 up to Strongly agree=7) with some items

reverse scored. A scoring algorithm supplied by Thomas Jefferson University provided specific scoring instructions. The JSE scoring algorithm was confidential per Thomas Jefferson University's request. The total score of each completed survey was the sum of all 20 item scores. Scores ranged from 20 to 140 with higher scores representing a higher empathy level.

The JSE tool is considered the premiere psychometrically sound instrument for healthcare provider empathy measurement (Hojat, 2016a). As of 2016, the JSE has been widely translated and used in 189 publications around the world where its validity and reliability have been demonstrated in a variety of health care professions and cultures (Hojat, 2016a). Researchers determined that empathy as a criterion measured on its own was valid; that is, empathy is distinct from other similar traits such as compassion and sympathy (Hojat et al., 2003). Additionally, the S-version and HP-versions produced consistently stable alpha coefficients when tested among residents (0.87) and medical students (0.89) and in pre- and post-tests with physicians (0.65) establishing the tools as reliable (Hojat et al., 2003).

Study Design

An observational cross-sectional study was selected for several reasons inherent to the benefits of its design. This type of study allowed for shared and variable characteristics of the target population, assessment of multiple variables simultaneously, survey administration at a specific point in time, ease of tool distribution, and cost efficiency. A cross-sectional design accounted for shared characteristics of the target population, such as educational background and profession, which minimized the effect these variables have on results. Concurrently, adequate variation existed within both independent variables, years of clinical practice as a PA and years of pre-PA HCE, to discern effects on empathy level. The ability to observe two variables at the same time, moreover, offered opportunities to examine whether additional factors influenced

empathy level. Another distinct advantage to the cross-sectional design of this study was that data collection on all variables occurred once and at the same time, decreasing selective attrition threats to the validity of the study.

Procedure

This research investigated whether empathy declined with either increased years of PA clinical experience or increased years of pre-PA HCE. Two independent variables were evaluated in the study: clinical experience as determined by the number of years as a practicing PA, and pre-PA HCE as determined by the number of years of HCE prior to start of the PA program. Empathy level was the dependent variable and was assessed through the JSE-HP tool. IRB approval was obtained to study the 122 graduates from Bethel University's PA program for the purpose of this research (Appendix E).

The online survey which included the consent form, survey instructions, demographic questions and two supplemental questions regarding years of experience, and JSE-HP (Appendix C) was generated through Qualtrics Survey Software. Survey responses were initially recorded on Qualtrics website which was both username and password protected. The researchers did not have access to any participant's email address and no identifying information was collected on the online survey. The survey was voluntary and informed consent was required before answering the questions. Survey participants were not required to complete all survey questions before submission and had the option of returning to skipped questions.

An initial email with the survey link was sent to the provisional Program Director of Bethel University's PA program. In order to protect participant privacy and confidentiality, Bethel University's PA Program Administrative Assistant sent the email and survey link to study participants (Appendix F). The online survey was available to participants from May 5th, 2019

to June 21st, 2019. To improve completion rates, reminder emails were sent on June 4th, 2019 and June 13th, 2019 (Appendix G-H). After the survey closed, all data was downloaded and removed from Qualtrics. During analysis, the downloaded data was stored on a password-protected computer owned by the researchers. After completion of the study, the data was kept on an external storage device locked in the PA program office for a minimum of five years, per securing requirements for Bethel University's PA Program.

Statistical Analysis

Survey data met the following specific criteria to be included in the analysis: participants were currently practicing PAs at the time of the survey, completed the two supplemental questions regarding years of experience, and answered a minimum of 16 out of the 20 JSE-HP questions (80%). Any surveys that failed to meet any of these requirements were regarded as incomplete and excluded from data analysis. Per the scoring algorithm instructions provided by Thomas Jefferson University, if a participant did not provide responses for four or fewer JSE-HP survey questions, the score for those items were replaced with the mean score of their overall responses.

The following descriptive statistics were analyzed and provided: mean, standard deviation, range, and mode with distribution of empathy scores for the entire sample. A regression analysis allowed for the study of the main effect of each of the two independent variables, years of PA clinical experience and years of pre-PA HCE, on the dependent variable, empathy level. Data analysis and storage was completed utilizing Excel and MedCalc, downloaded on a password-protected computer owned by the researchers.

Limitations and Delimitations

The design of this study had parameters that determined the scope and generalizability of the research findings. Limitations of the study were inherent in the cross-sectional design, population of interest, and small sample size. As an observational design, this cross-sectional study could not determine cause and effect between years of PA clinical experience or years of pre-PA HCE and empathy level. Without being able to collect data from the same participants over time, the study could not draw conclusions about how empathy levels trend over the course of a PA's career beyond four years. However, documenting whether empathy level changes as PAs accumulate up to four years of clinical experience was still determined to be a valuable finding.

Secondly, limitations inherent in the size and demographics of the target population reduced the generalizability of the findings to the broader PA population. For example, the alma mater of the participants was a private Christian university. Religiosity was not examined as a variable in this study. It is possible the religious background of PAs from this program influenced results and reduced the generalizability of the study. However, by comparing participants from the same institution, religiosity as a confounding variable was minimized. Moreover, the results of the study may not be generalizable to non-PA providers such as physicians and nurse practitioners.

Certain delimitations of this study were determined to enhance the quality of this study in respect to design method, likelihood of increased response rate, and feasibility. The cross-sectional design of this study was chosen to limit confounding variables since participants shared many similar characteristics such as educational background and profession. Additionally, the researchers already had an indirect connection to practicing PAs through the program director of

a PA program, thereby improving the likelihood of survey response and decreasing attrition rate. A relatively smaller sized target population also increased the feasibility of the project when resources such as direct technical support and time were limited.

Conclusion

The methodology of the observational, cross-sectional study described sought to answer the following two research questions:

1. Does empathy decline among PAs with increased years of clinical experience?
2. Does empathy decline among PAs with increased years of pre-PA HCE?

Questionnaires were sent to Bethel University PA Program graduates and data regarding clinical experience, pre-PA HCE, and empathy level were collected. Chapter 4: Results presents the statistical analysis of the collected data. Discussion regarding interpretation, conclusions, strengths and limitations of the analysis, generalizability, and needs for additional research are discussed in Chapter 5: Discussion.

Chapter 4: Results

Introduction

The intent of this study was to determine and evaluate whether PA empathy declined with increased clinical years of practice and/or increased years of pre-PA HCE. A total of 48 electronic surveys were collected from Bethel University's PA Program graduates. The response rate for the survey was 39%. Among all the surveys, there was a 100% completion of each question and were all utilized for data analysis. Microsoft Excel and MedCalc were used for data analysis. Each question on the online survey was examined individually and discussed in the following chapter. Tables along with figures were used to display the data.

Demographics

The demographic information of 48 surveys from Qualtrics were analyzed by using Microsoft Excel. Of these PAs, 37 were female and 11 were male (Table 1). The average age of participants was 28.98 years old (SD = 13.71) with the range from 25-41 years old (Table 1). Two participants did not report their age. Of the total 48 surveys collected, 45 of the participants identified as white, two identified as Black or African American, and one identified as Hispanic or Latino (Table 1). A total of 47 of the 48 participants provided the total number of HCE years prior to attending PA school (Table 2). The average HCE prior to PA school was 3.03 years (SD = 2.92) with a range of 0-13 years (Table 2). All 48 participants were currently practicing with an average number of years in clinical practice of 1.97 years (SD = 1.13) and a range of 0.5-4.0 years (Table 3). All the surveys were used for analysis as they met the criteria of useful data per Chapter 3: Methodology.

Table 1

Demographics of Survey Participants

Demographics of Survey Participants N=48		
Variable	**N**	**%**
Gender		
Male	11	23
Female	37	77
Age		
25-29	32	66
30-34	10	21
35-39	3	6
40-44	1	2
Race		
Black or African American	2	4
Hispanic or Latino	1	2
White	45	94

Table 2

Pre-PA HCE of Survey Participants

Years of Pre-PA HCE **Participants N=47**		
Variable	**N**	**%**
0	2	4
1.0	10	21
1.5	2	4
2.0	12	25
2.5	1	2
3.0	10	21
4.0	3	6
5.0	2	4
6.0	1	2
7.0	1	2
12.0	1	2
13.0	2	4

Table 3

Current Years of Clinical Practice of Survey Participants

Years of Clinical Practice Participants N=48		
Variable	**N**	**%**
0.5	10	21
1	7	14
1.5	4	8
2	6	13
2.5	6	13
3	8	17
3.5	4	8
3.75	1	2
4	2	4

Data Analysis

The average empathy scores from the JSE-HP were scored and interpreted using the scoring algorithm provided by Thomas Jefferson University. Microsoft Excel and MedCalc were used to evaluate the results. The empathy scores were analyzed using regression analysis. Regression analysis is a statistical process determining the relationship between a dependent variable and an independent variable. In this study, the dependent variable was the JSE-HP empathy score and the independent variables were PA clinical experience and pre-PA HCE. The analysis involved a linear regression to find the relationship between JSE-HP empathy score with clinical years of practice, and JSE-HP score and years of pre-PA HCE. The average overall empathy score was 115.83 (SD = 11.12) with a range of 72-136 (Table 4). The following sections discuss the results further.

Table 4

Empathy Scores from the JSE-HP of Survey Participants

JSE-HP Score

Participants
N=48

Variable	N	%
70-79	1	2
80-89	0	0
90-99	1	2
100-109	11	23
110-119	17	35
120-129	15	31
130-139	3	6

Correlation/Regression Analysis of Empathy and Years of Clinical Experience

The results indicated that practicing PAs do have a slight decline in empathy with years of clinical practice, although not statistically significant. Our original research question asked, "Does empathy decline among PAs with increased years of clinical experience?" For the relationship between PA years of clinical experience and the JSE score, there is not a significant relationship ($r^2 = 0.04$, $P = 0.172$). See Figure 1. Years of clinical experience skewed to the left with a mode of 0.5 years while JSE-HP scores were skewed to the right with a mode of 124.

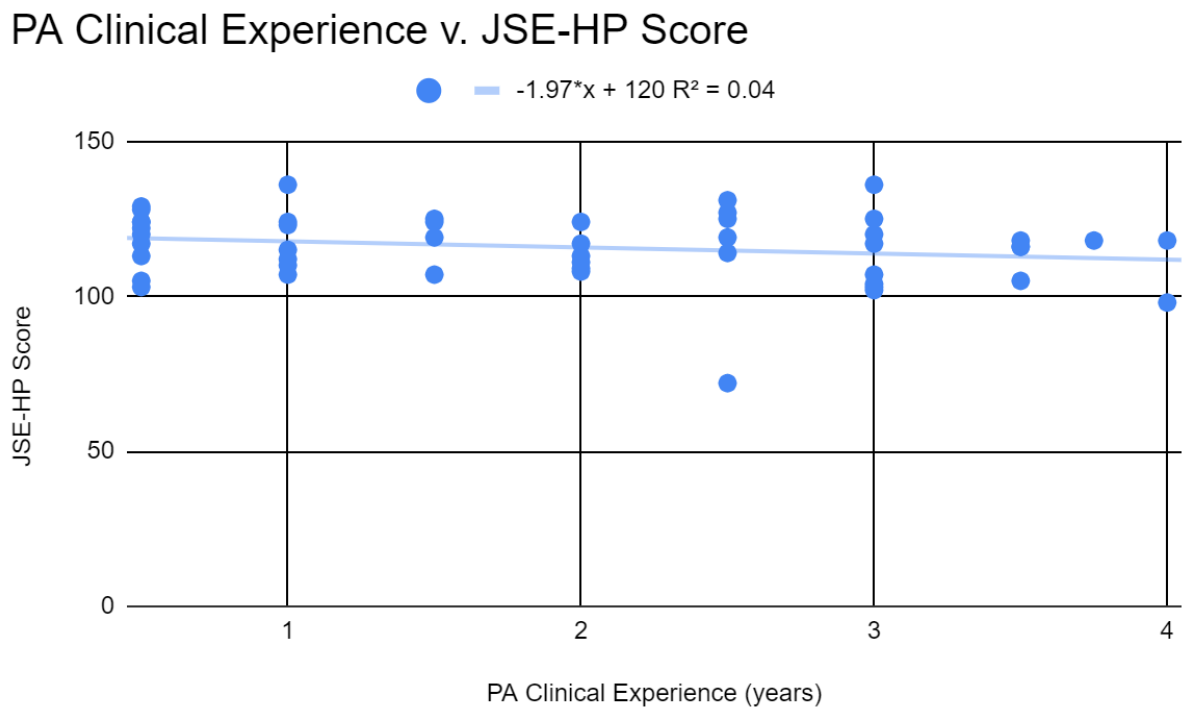

Figure 1. PA Clinical Experience versus JSE-HP Score.

Correlation/Regression Analysis of Empathy and Years of Pre-PA HCE

The second research question asked, "Does empathy decline among PAs with increased years of pre-PA HCE?" For the relationship between pre-PA HCE and JSE-HP score, there was not a significant relationship ($r^2 = 0.02$, $P = 0.908$). See Figure 2. Pre-PA HCE skewed to the left with a mode of 2 years while JSE-HP scores were skewed to the right with a mode of 124.

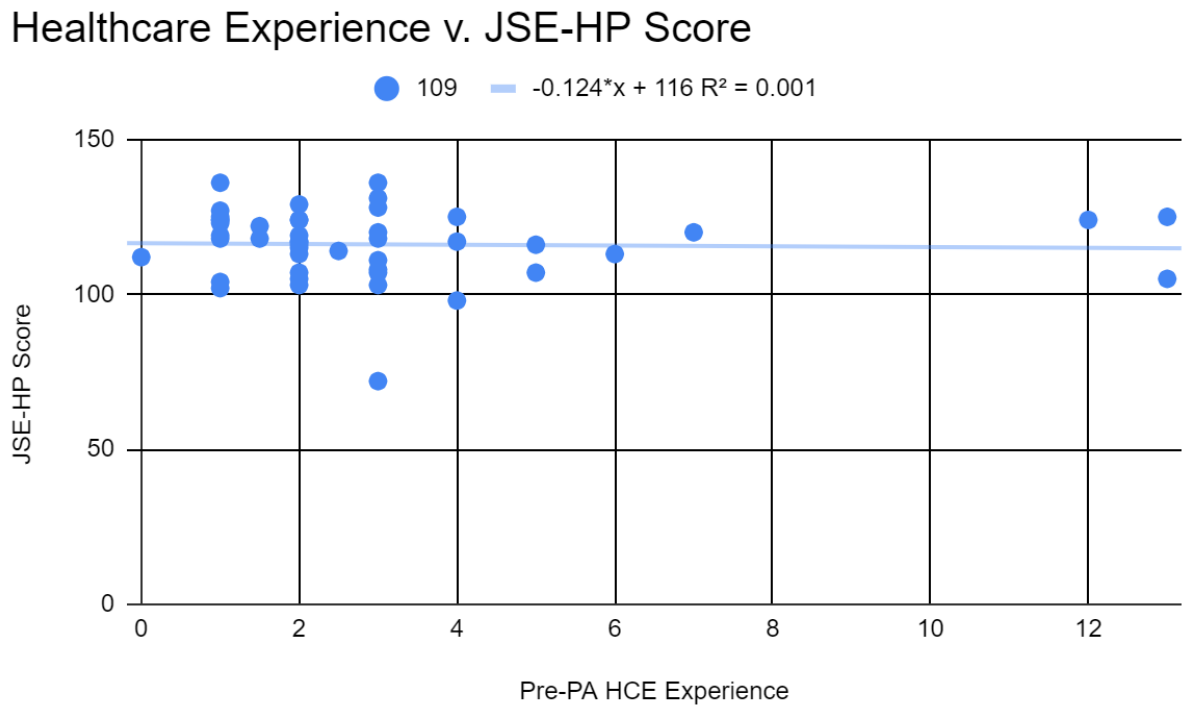

Figure 2. Pre-PA HCE versus JSE-HP Score.

Gender Differences with Regard to Empathy Level

In this study, 37 women and 11 men responded to the survey. Overall, the relationship to gender and the JSE-HP score was significantly different ($P = 0.003$). See Table 5. For female participants, the average empathy score was 118.84 (SD = 8.08). Male participants had an average empathy score of 105.73 (SD = 14.14). There was one male outlier empathy score of 72, which altered the overall male participant data. The difference between gender and empathy score is discussed further in Chapter 5: Discussion.

Table 5

Relationship between Gender and Overall JSE-HP Scores

Variable	Gender="Female"			Gender="Male"					
	n	Mean	SD	n	Mean	SD	Difference	95% CI	P [a]
Score	37	118.8378	8.0778	11	105.7273	14.1428	-13.1106	-19.8321 to -6.3890	0.0003

[a] *T-test*

Even though the overall JSE-HP score was significantly different between genders, there was not a significant difference between the genders by age. For female participants, the average age was 28.49 years old (SD = 3.28 years). Male participants had an average age of 30.55 years old (SD = 3.62 years). The age range was skewed to the left with 66% of the participants between the ages of 25-29 years old. See Table 6.

Table 6

Comparison of Independent Samples Age

Variable	Gender="Female"			Gender="Male"					
	n	Mean	SD	n	Mean	SD	Difference	95% CI	P [a]
Age	35	28.4857	3.2753	11	30.5455	3.6156	2.0597	-0.2779 to 4.3974	0.0827

[a] *T-test*

Conclusion

A total of 48 PAs completed surveys, which allowed researchers to examine the relationship between empathy with years of clinical practice and with pre-PA HCE. Results were evaluated by performing a regression analysis. According to the analysis of 48 surveys, participants showed no significant relationship between empathy with years of clinical practice and with pre-PA HCE. There was a significant relationship between empathy and gender, with a higher average empathy score for female versus male participants. However, there was not a significant difference between the genders by age or total clinical experience. The results found in this chapter are compared to the existing research in Chapter 2: Literature Review and further discussed in Chapter 5: Discussion.

Chapter 5: Discussion

Introduction

With the growing body of literature indicating the importance of healthcare provider empathy in improved patient care, this research sought to examine the relationship between PA empathy levels and two independent variables: PA clinical experience and pre-PA HCE. Based on a variety of studies linking increased burnout to healthcare provider empathy decline and recognizing the prevalence of burnout within the PA profession (Coplan et al., 2018; Smith, 2018; Wilkinson et al., 2017), this study anticipated that increased years of pre-PA HCE and clinical experience would be associated with increased PA empathy decline. The study found no statistically significant decline in JSE-HP scores with either independent variable. Age was not shown to play into empathy retention or decline though female PAs were shown to possess more empathy than their male counterparts.

Summary of Results

To examine the above-mentioned variables, an empathy assessment survey was collected from 48 PA graduates from Bethel University. Among those surveyed, 77% were female, 23% were male, 94% identified as White, 4% as Black or African American, and 2% as Hispanic or Latino. The mean age of respondents was 28.98 years old. Pre-PA HCE ranged from 0 to 13 years while clinical experience ranged from 0.5 to 4.0 years. JSE-HP empathy scores ranged from 72 to 136 with a mean score of 115.83. Regression analysis was used to evaluate the data.

Analysis of the data did not show a statistically significant decline in empathy with PAs who had more pre-PA HCE ($r^2 = 0.02$; $P = 0.908$) or as PAs gained years of clinical experience ($r^2 = 0.20$; $P = 0.172$). Mean female empathy scores (118.84) were higher than their male

counterparts (105.73); this difference was highly significant ($P = 0.003$). Participant age was not shown to be a statistically significant factor in predicting empathy level ($P = 0.08$).

Points for Discussion

Twenty-first century healthcare systems have been grappling with how best to move toward a more thoroughly patient-centered, individualized model of care (Committee on Quality of Health Care in America, 2001). Empathy has been recognized as playing a vital role toward this transformation. Resultantly, a growing body of research has sought to explore the relationship between empathy and a variety of factors including patient satisfaction, symptom management, and treatment adherence as well as healthcare provider burnout, education, and clinical experience. As few studies had looked at empathy within the PA profession (Floyd et al., 2015; Mandel & Schweinle, 2012), this study sought to contribute to the growing body of empathy research.

This study investigated two research questions proposed earlier: whether years of clinical experience impacted empathy and whether pre-PA HCE impacted empathy levels among PAs. The results of this study revealed no significant relationship between years of clinical experience and empathy level or years of pre-PA HCE and empathy level among practicing PAs. These results ran contrary to other research indicating that increased clinical exposure promoted empathy decline (Chen et al., 2007; Mandel & Schweinle, 2012; McFarland et al., 2016; Ward et al., 2012) and supported research indicating empathy was not affected by pre or post-education clinical exposure (Aparicio et al., 2018; Colliver et al., 2010). Additionally, the study supported previous research indicating female healthcare providers were more empathetic than their male counterparts (Berg et al., 2015; Chen et al., 2007; Duarte, Raposo, Rodrigues, & Branco, 2016;

Howick et al., 2017; Mandel & Schweinle, 2012; Williams et al., 2014). The study found that age did not appear to play a role in predicting empathy levels among PAs.

Support from the limited studies that examined empathy and various types of experience among healthcare providers have been mixed (Gleichgerrcht & Decety, 2013; Ward et al., 2012). With regards to clinical experience and empathy, the findings of this study were supported by a large-scale study on practicing physicians that found years of experience did not impact dispositional measures such as empathic concern (Gleichgerrcht & Decety, 2013). One possible explanation is empathy level change does not differ significantly in very early career PAs. Study participants had 4 years or less clinical experience as PA professionals; over half (56%) of participants had spent no more than 2 years in the profession at the time of the survey. In Mandel et al.'s (2012) study, the difference in empathy scores of PA students before their clinical phase of training and during their clinical rotations was not significant ($P = 0.37$), further lending support to this suggestion that limited clinical exposure does not affect a change in empathy level.

The study's second finding on prior healthcare experience and its impact on empathy found mixed support by prior studies (Mandel & Schweinle, 2012; Ward et al., 2012). While data from this study found no association between pre-PA HCE and JSE-HP scores among PAs, prior healthcare experience was associated with greater empathy decline in nursing students (Ward et al., 2012). In contrast, PA students' prior healthcare experience was not associated with empathy scores (Mandel & Schweinle, 2012). Why would prior experience demonstrate lower empathy levels in nursing students and not in PAs or PA students? Differences in the prior healthcare experiences of both groups may be an explanation, warranting further investigation into this topic.

This study is in line with a majority of research that suggests female healthcare providers are more empathetic than male providers (Berg et al., 2015; Chen et al., 2007; Duarte et al., 2016; Gleichgerrcht & Decety, 2013; Howick et al., 2017; Mandel & Schweinle, 2012; Howick et al., 2017; Williams et al., 2014). Research supporting this assertion is expansive, spanning across various cultures. Female healthcare providers tend to spend more time, use more positive language, and engage in more difficult conversations with patients than male providers (Hojat, 2016a). However, it is important to note several studies in Denmark, Italy, and the United States did not show a statistically significant empathy gender gap with administration of the JSPE (Charles, Ahnfeldt-Mollerup, Søndergaard, & Kristensen, 2018; Di Lillo, Cicchetti, Lo Scalzo, Taroni, & Hojat, 2009; Grosseman et al., 2014). The majority of research, however, does support an empathy divide between men and women.

Proposed explanations for why women consistently demonstrated higher levels of empathy are varied and beyond the scope of this paper. However, researchers have pointed to differences in socio-cultural upbringing and evolutionary development (Hojat, 2016a), which enhance female practitioner emotional recognition and nonverbal communication skills (Santos, Grosseman, Morelli, Giuliano, & Erdmann, 2016; Thompson & Voyer, 2014). This difference was recently reported in a study of Italian medical residents in which male practitioners were more likely to value personal achievement over and above personal relationship (Ardenghi, Rampoldi, Bani, & Strepparava, 2019). In addition to socio-cultural and evolutionary explanations, perhaps the professional challenges women face working within a patriarchal society enhance their ability to relate with and extend empathy toward patients who are facing their own unique challenges. Both female PAs and physicians similarly reported feeling less valued in their workplace (Gleichgerrcht & Decety, 2013; Essary et al., 2018)

One potential explanation for the finding that empathy appears to have been retained in the sample is religiosity. While data was not collected in the survey regarding participants' religious practice, each participant attended a private Christian university in which spirituality was integrated into the curriculum. This leads to a number of unanswered questions: Do religious healthcare providers demonstrate more empathy than non-religious providers? How does religious belief impact empathy retention among healthcare providers?

Little research has been completed to explore the intersection between healthcare provider empathy retention and religion. Studies of Brazilian medical students and United States nursing students failed to find a correlation between religious belief and JSPE-S scores (Fields et al., 2011; Santos et al., 2016). No other studies could be found which explicitly examined religiosity while utilizing the JSE-HP either in regard to religious belief or empathy retention.

The sampled cohort from Bethel University had a mean empathy score of 115.83 on the JSE-HP. While the JSPE-S version has been utilized extensively with norms set on national samples, unfortunately no norms have been established for the JSE-HP tool. A review of studies completed on physicians and paramedic, dental, nursing, and midwifery students utilizing the JSE-HP indicate mean scores ranging from 98.2 to 121 (Hojat, 2016a; Hojat et al., 2002; Sherman & Cramer, 2005; Suh, Hong, Lee, Gonnella, & Hojat 2012; Williams et al., 2014). PAs were not assessed in any of the reviewed studies making it difficult to determine if the cohort is more empathetic than their peers. Additionally, the study's sample size was relatively small with a response rate of 39%. As a result, caution must be taken in drawing the conclusion that religiosity played in the cohort's empathy retention in the setting of increased clinical exposure. However, clearly there is little research examining the precise relationship between healthcare provider empathy and religiosity which warrants further study.

Limitations

The limitations of this study, as discussed in Chapter 3, lay in the study design, population sample, and the multifactorial nature of practitioner empathy. Without assessing empathy scores over time, no long-term trends can be established. Ideally, longitudinal data over the course of a provider's career would provide more insight into how empathy levels change as careers progress. Sampling limitations such as a smaller sample size, sampling from one university, and sampling from a Christian university decrease generalizability of the data. Compared to the PA population according to the National Commission on Certification of Physician Assistants (NCCPA), the average age of participants in this study were younger (29 compared to 38 years of age), more white (93.8% compared to 86.9%), and female (77.1% compared to 66.8%) than the general PA population (NCCPA, 2018).

Additionally, response bias may have led participants to skew their responses more favorably. Studies have shown evidence of healthcare provider inflation bias when it comes to self-assessment of empathy compared to patients' assessment (Bernado et. al, 2018; Floyd et. al, 2015). Even so, it has been well understood that empathy is a complicated construct impacted by many factors, from personal dispositional attributes to the clinical environment. From the perspective of medical students and residents, empathy decline has also been attributed to mistreatment by superiors, high workload, shortened patient visits, and inadequate role models (Neumann et al., 2011). Further research is needed to investigate empathy on a larger scale and from a multifactorial perspective.

Conclusion

Clearly, provider empathy is essential in the provider-patient relationship with the goal of improved patient outcomes. In this study's investigation of how clinical experience and pre-PA

healthcare experience influenced empathy level among PAs, there was no discernable association. Instead, the gender difference in empathy observed among PAs was consistent with other healthcare professionals, indicating the commonality of the phenomenon. Furthermore, while it is plausible to consider religiosity as a potential factor in the study results, and religiosity and empathy may be worth investigating further, this study did not investigate this variable and cautions against any such conclusions. As studies continue to demonstrate the benefits of provider empathy in patient care, a better understanding of how empathy varies throughout a provider's career span is needed towards developing empathy retention and promotion.

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APPENDIX A

Bethel University Approval

Bethel University Approval

January 17, 2019

To whom it may concern:

I am the chair of the research group that includes Matt Horn, Lisa Xiong and Jackie Roff. For their research, they have requested to have access to survey graduates of the Bethel University PA program.

As acting director, I give them permission to have contact information for our graduates in order to survey them for this research project.

Sincerely,

Cynthia Goetz, MPAS, PA-C
Associate Professor
Bethel University PA Program

APPENDIX B

Informed Consent

Informed Consent

Dear Bethel University's Physician Assistant Program Alumni:

You have been selected as a possible participant for a study examining empathy change among practicing physician assistants. As current PA students from Bethel University's program, we are conducting research in partial fulfillment of the requirements for a Master of Science in PA Studies. This research project has been reviewed and approved in accordance with Bethel University's Levels of Review for Research with Humans.

If you decide to participate, participation involves completion of a 20-question electronic survey with basic demographic information. The attached survey will take about 5 minutes to complete.

This survey collects no identifying information of any respondent. All responses will be kept anonymous and reported only as a collected combined total.

Your decision to participate is completely voluntary. Whether or not you participate will not affect your future relations with Bethel University in any way. If you decide to participate, you are free to discontinue the survey at any time without affecting such relationships.

If you have any questions regarding the research study, please contact the research committee chair, Cindy Goetz, at c-goetz@bethel.edu, or the researchers, Matthew Horn (matthew-horn@bethel.edu), Jacqueline Roff (j-roff@bethel.edu), and Lisa Xiong (lisa-xiong@bethel.edu).

By continuing with this survey, you are indicating informed consent to participate in this study. Your participation is appreciated.

Thank you in advance for your participation in this study.

Sincerely,
Matthew Horn, Jacqueline Roff, and Lisa Xiong
Bethel University Graduate PA Students

APPENDIX C

Jefferson Scale of Empathy- Health Professions

Jefferson Scale of Empathy- Health Professions

Instructions: Fill in or check one response for each of the items below.

What is your age?

To which gender identity do you most identify?

- ❑ Male
- ❑ Female
- ❑ Transgender
- ❑ Other
- ❑ Prefer not to answer

What is your race or ethnicity?

- ❑ White
- ❑ Hispanic or Latino
- ❑ Black or African American
- ❑ Native American or American Indian
- ❑ Asian or Pacific Islander
- ❑ Other

Are you currently practicing as a PA-C?

- ❑ Yes
- ❑ No
- ❑ No, I am currently in between jobs or on leave

How many years have you practiced as a PA-C?

How many years of healthcare experience (HCE) did you have prior to starting PA school?

Jefferson
Philadelphia University + Thomas Jefferson University

Jefferson Scale of Empathy

Physician/Health Professions (HP - version)

Instructions: Using a ball-point pen, please indicate the extent of your agreement or disagreement with *each* of the following statements by marking the appropriate circle to the right of each statement.

Please use the following 7-point scale (*a higher number on the scale indicates more agreement):*
Mark one and only one response for each statement.

1-------2-------3-------4-------5-------6-------7
Strongly Disagree ***Strongly Agree***

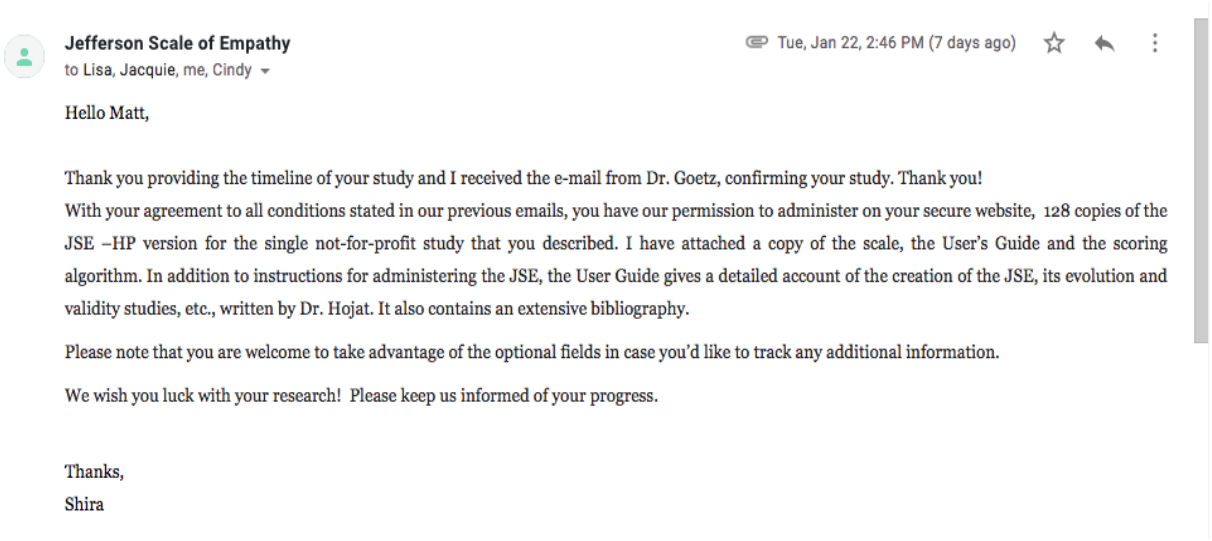
	1	2	3	4	5	6	7
1. My understanding of how my patients and their families feel does not influence medical or surgical treatment.	O	O	O	O	O	O	O
2. My patients feel better when I understand their feelings.	O	O	O	O	O	O	O
3. It is difficult for me to view things from my patients' perspectives.	O	O	O	O	O	O	O
4. I consider understanding my patients' body language as important as verbal communication in caregiver-patient relationships.	O	O	O	O	O	O	O
5. I have a good sense of humor that I think contributes to a better clinical outcome.	O	O	O	O	O	O	O
6. Because people are different, it is difficult for me to see things from my patients' perspectives.	O	O	O	O	O	O	O
7. I try not to pay attention to my patients' emotions in history taking or in asking about their physical health.	O	O	O	O	O	O	O
8. Attentiveness to my patients' personal experiences does not influence treatment outcomes.	O	O	O	O	O	O	O
9. I try to imagine myself in my patients' shoes when providing care to them.	O	O	O	O	O	O	O
10. My patients value my understanding of their feelings which is therapeutic in its own right.	O	O	O	O	O	O	O
11. Patients' illnesses can be cured only by medical or surgical treatment; therefore, emotional ties to my patients do not have a significant influence on medical or surgical outcomes.	O	O	O	O	O	O	O
12. Asking patients about what is happening in their personal lives is not helpful in understanding their physical complaints.	O	O	O	O	O	O	O
13. I try to understand what is going on in my patients' minds by paying attention to their non-verbal cues and body language.	O	O	O	O	O	O	O
14. I believe that emotion has no place in the treatment of medical illness.	O	O	O	O	O	O	O
15. Empathy is a therapeutic skill without which success in treatment is limited.	O	O	O	O	O	O	O
16. An important component of the relationship with my patients is my understanding of their emotional status, as well as that of their families.	O	O	O	O	O	O	O
17. I try to think like my patients in order to render better care.	O	O	O	O	O	O	O
18. I do not allow myself to be influenced by strong personal bonds between my patients and their family members.	O	O	O	O	O	O	O
19. I do not enjoy reading non-medical literature or the arts.	O	O	O	O	O	O	O
20. I believe that empathy is an important therapeutic factor in medical or surgical treatment.	O	O	O	O	O	O	O

 160106 (ver. 4.0)

APPENDIX D

Thomas Jefferson University Approval

Thomas Jefferson University Approval



Jefferson Scale of Empathy Tue, Jan 22, 2:46 PM (7 days ago)

to Lisa, Jacquie, me, Cindy

Hello Matt,

Thank you providing the timeline of your study and I received the e-mail from Dr. Goetz, confirming your study. Thank you!
With your agreement to all conditions stated in our previous emails, you have our permission to administer on your secure website, 128 copies of the JSE –HP version for the single not-for-profit study that you described. I have attached a copy of the scale, the User's Guide and the scoring algorithm. In addition to instructions for administering the JSE, the User Guide gives a detailed account of the creation of the JSE, its evolution and validity studies, etc., written by Dr. Hojat. It also contains an extensive bibliography.

Please note that you are welcome to take advantage of the optional fields in case you'd like to track any additional information.

We wish you luck with your research! Please keep us informed of your progress.

Thanks,
Shira

APPENDIX E

IRB Approval

IRB Approval

April 2, 2019

Matthew Horn, Jacqueline Roff, Lisa Xiong

As granted by the Bethel University Human Subjects committee as the program director, I write this letter to you in approval of Level 3 Bethel IRB of your project entitled: "Change in Empathy Levels among Practicing Physician Assistants." This approval is good for one year from today's date. You may proceed with data collection and analysis. Please let me know if you have any questions.

Sincerely;

Cynthia G. Goetz, MPAS, PA-C
Interim Program Director
Physician Assistant Program
Bethel University
c-goetz@bethel.edu
612-581-3830 cell
651 638-6747 office
http://gs.bethel.edu/academics/masters/physician-assistant

CC: Bethel IRB Chair
Faculty Chair Advisor
PA Program Research Coordinator

APPENDIX F

Initial Survey Email

Initial Survey Email

Dear Bethel University's Physician Assistant Program Alum,

We are excited to invite you to participate in an upcoming research study on empathy and physician assistant clinical experience. As future PAs, we are curious if years of clinical experience has an effect on empathy. Your participation in our research not only helps us complete requirements for a Master's Degree in Physician Assistant Studies at Bethel University in Minnesota, but also may provide insight as to empathy change among practicing physician assistants.

Below is a link to the survey. The survey will be available until June 3, 2019. We look forward to your participation.

Survey Link.

Thank you in advance for your participation in this study.

Sincerely,

Matthew Horn, Jacqueline Roff, and Lisa Xiong
Bethel University Graduate PA Students

APPENDIX G

Follow-up/Reminder Email

Follow-up/Reminder Email

Dear Bethel University's Physician Assistant Program Alum,

One week ago we had the pleasure of sending you our first email with an attached link regarding our research project on Change in Empathy Levels among Practicing Physician Assistants. We thank those of you who have already completed the survey. If you have not yet completed the survey, we would appreciate your participation.

As future PAs, we are curious if years of clinical experience has an effect on empathy. Your participation in our research not only helps us complete requirements for our master's degree, but also may provide insight as to empathy change among practicing physician assistants.

If you have not had the opportunity to participate, please see the attached link to our survey. We would greatly appreciate survey completion by June 2, 2019.

Survey Link.

Thank you again for your help.

Sincerely,

Matthew Horn, Jacqueline Roff, and Lisa Xiong
Bethel University Graduate PA Students

APPENDIX H

Final Follow-up/Reminder Email

Final Follow-up/Reminder Email

Dear Bethel University's Physician Assistant Program Alum,

Thank you to everyone who has already completed the survey for our research project on Change in Empathy Levels among Practicing Physician Assistants. If you have not yet completed the survey, we would appreciate your participation. The survey takes less than 5 minutes to complete.

Currently, we also need more male PA-C responses for statistical analysis. Additionally, we would appreciate it if you would consider forwarding this email to those within your cohort.

Below is the attached link to our survey, which will remain open until next Friday, June 21, 2019.

Survey Link.

Thank you again for your help.

Sincerely,

Matthew Horn, Jacqueline Roff, and Lisa Xiong
Bethel University Graduate PA Students