An Examination of the Relationship Between Patient Satisfaction Ratings, Demographics, and Components of Empathy in Nursing Staff

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Abstract

The healthcare system in the United States (U.S.) has been increasingly driven to provide high-quality, patient-centered care, as seen by federally driven initiatives. The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, being a major development by the Centers for Medicare & Medicaid Services (CMS) and the Agency for Healthcare Research and Quality (AHRQ) incentivizes hospital systems in the United States to deliver high-quality acute care by linking reimbursement to HCAHPS survey patient satisfaction rankings, known as the value-based payment program. It is crucial for healthcare institutions to effectively improve their patient satisfaction ratings, which significantly affect their financial health.

Empathy in healthcare providers has been shown to positively influence communication, perceived support, quality care, trust, and satisfaction. Despite the recognized importance of empathy, studies correlating empathetic components directly to reimbursement dependent patient satisfaction surveys are limited.

Acute rehabilitation hospitals, which focus on the recovery of patients with serious conditions and rely heavily on Medicare reimbursement, offer a unique environment to examine the relationship between empathy and patient satisfaction. By using acute rehabilitation hospitals to conduct research on empathy in nursing, this study aimed to generate insights that can be generalized to acute inpatient hospitals.

Objectives*:* The primary objective of this study was to examine the relationship between the components of empathy in nursing staff and patient satisfaction in acute rehabilitation hospitals. This study used a validated empathy assessment tool to measure the components of empathy of nursing staff and compared these areas with a patient satisfaction survey question

similar to the global questions used in the HCAHPS survey. By utilizing acute rehabilitation hospitals within the same healthcare company, it controls organizational differences, patient/nursing survey timeframes and ensures consistency in the care environment.

Methodology*:* A cross-sectional survey was conducted across four hospitals with a sample of 132 nursing staff participants. Nursing staff was classified into two groups based on the hospitals' patient satisfaction rating (greater than 8/10 and less than 5/10). Demographic data included age, gender, race, profession, and employment status. Empathy components were measured using scales for Perspective Taking, Compassionate Care, and Walking in Patient Shoes, with reliability confirmed via Cronbach's alpha, and two-tailed independent samples *t*-test, Chi-square tests of independence, and ANOVA were used to analyze differences in empathy scores between groups.

Results: The overall Empathy scale demonstrated acceptable reliability ($\alpha = .73$), although the subscales ranged from questionable to acceptable. The sample was diverse in terms of age, gender, and race, with the majority being female (91.67%) and Black or African American (43.18%). Registered nurses constituted 52.27% of the sample. Empathy and its components did not show significant differences between top patient satisfaction hospitals and bottom-ranked hospitals. However, there was a significant difference in empathy and its components between White and Black or African American participants, younger vs. older nurses, and among nursing degree levels. White participants scored higher in overall empathy ($M = 118.39$, $SD = 11.39$) and Compassionate Care ($M = 45.91$, $SD = 6.16$) compared to Black or African American participants ($M = 112.26$, $SD = 13.73$; $M = 41.02$, $SD = 8.62$, respectively). Nurses under 30 years old had higher overall empathy scores ($M = 123.76$, $SD = 5.98$) compared to those 30 years and older ($M = 114.28$, $SD = 12.53$). Similarly, younger nurses scored higher in

Perspective Taking (cognitive empathy) (M = 64.88, SD = 3.89) versus older nurses (M = 59.66, SD = 6.44).

Conclusions: The findings suggest that while demographic factors such as race, level of education in the nursing field, and age may influence certain aspects of empathy, the overall relationship between empathy components and patient satisfaction ratings is complex. Future research should explore the relationship between patient satisfaction ratings and specific nursing staff providing care, aligning patient responses closer with the individual giving the care.

Keywords: Empathy, Components, Patient Satisfaction, Nursing, Demographics

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List of Abbreviations

AHRQ .....Agency for Healthcare Research and Quality

CARE.....Consultation and Relational Empathy

CMS .....Centers for Medicare & Medicaid Services

CNA .....Certified Nursing Assistant

HCAHPS.....Hospital Consumer Assessment of Healthcare Providers and Systems

IRF .....Inpatient Rehabilitation Facility

JSE .....Jefferson Scale of Empathy

JSE-HP.....Jefferson Scale of Empathy for Healthcare Professionals

LPN.....Licensed Practical Nurse

PCT .....Patient Care Technician

RN.....Registered Nurse

US .....United States

Chapter I

An Examination of the Relationship Between Patient Satisfaction Ratings, Demographics, and Components of Empathy in the Nursing Staff

The overall performance of the United States (U.S.) healthcare system is poor compared to 11 other industrialized countries (Schneider et al., 2021). The United States rates last in all domains except one when comparing high-income countries. The United States ranks 11th in access to care, administrative efficiency, equity, and healthcare outcomes but took second place for the "care process" (Schneider et al., 2021). Care processes relate to the steps a healthcare system takes to provide medical care or treatment (Schneider et al., 2021). The top three countries in 2021 were Norway, the Netherlands, and Australia (Schneider et al., 2021).

The United States has improved significantly over the last decade with access to health insurance, quality of care, and cost (Blumenthal & Abrams, 2020; CDC, 2011; CDC, 2022). Medicaid expansion and the Affordable Care Act have allowed millions more U.S. residents under the age of 65 to have affordable healthcare coverage. From 2010 through the first three quarters of 2021, the percentage of uninsured U.S. residents under the age of 65 years old fell from 18.2% (approximately 48.2 million) to 10.7% (approximately 28.3 million) (CDC, 2011; CDC, 2022). Medicare caps on the pricing of services and implementing a value-based incentive program, with reimbursement dependent on a hospital's survey rating, have successfully improved quality and cost (Blumenthal & Abrams, 2020). Yet, the United States continues to rate last in healthcare outcomes in comparison to ten other industrialized countries.

Background

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, developed by the partnership of the Centers for Medicare & Medicaid Services (CMS)

and the Agency for Healthcare Research and Quality (AHRQ) was initiated in 2006 with the first public reporting occurring in 2008. The HCAHPS survey was established to financially motivate hospital systems to deliver high-quality healthcare in the acute care setting in the United States (CMS, 2021; Mazurenko et al., 2017). HCAHPS has done this in two ways: first, by publicly reporting ratings for all consumers to compare hospital rankings; and secondly, Medicare uses these ratings for a value-based payment program that reimburses hospitals based on the facility's HCAHPS score, placing the facility in a top, middle, or bottom box payment category (Mazurenko et al., 2017). Just under 10% of hospitals are in the top-box category receiving full reimbursement for services from CMS (CMS, 2021). Lower-rated hospitals get an adjusted payment based on their middle-box or bottom-box rankings (CMS, 2021). Publicly reported ratings for consumers to compare hospital HCAHPS survey rankings are reported as one to five stars. Five stars are the highest-ranking facilities and equivalent to the top box category for reimbursement. At the same time, a one-star rating relates to the poorest-rated hospitals and is equivalent to a bottom box category. Strategies to improve HCAHPS survey ratings are vital to a healthcare institution's financial survival. New reimbursement criteria, dependent on a hospital's HCAHPS survey ratings, have successfully improved quality and cost, yet healthcare outcomes and healthcare access in the United States continues to be inferior to other industrialized nations (Blumenthal & Abrams, 2020).

A Hospital's HCHAPS Ratings

According to CMS (2021), the HCAHPS survey randomly reaches out to discharged patients with 29 questions about their recent hospital experience and satisfaction with their care. The 19 core questions are divided into seven categories regarding patient satisfaction. These seven categories are composite ratings. The core questions are about vital areas relating to the

patient's experience (communication with nurses and doctors, the responsiveness of hospital staff, the hospital environment cleanliness and noise level, communication about medicines and pain management, discharge information, and care transition). Two global categories exist: overall hospital rating and the likelihood of recommending the hospital.

Patient Satisfaction and Empathy

Empathy skills or tendencies, shown for patients by healthcare providers, go hand-in-hand with improved communication, active listening, perceived support from the patient perspective, quality care, trust, and patient satisfaction (Davidson et al., 2016; Jun et al., 2020; Loos, 2021). Ratka (2018) supported the need for empathy to be trained, shown, and evaluated throughout healthcare. It confirms that the literature correlates empathy with improvements in healthcare quality, patient outcomes, and that training should be embedded throughout the didactic portion of healthcare professionals' curriculum (Ratka, 2018).

Focusing on the strategy to increase empathy in healthcare providers alone could be the necessary recipe for significantly improving patient satisfaction ratings. Yet, studies to directly correlate an increased percentage of empathetic employees to patient satisfaction ratings similar to HCAHPS survey ratings do not appear to exist. Interventions to improve patient satisfaction primarily focus on nursing communication, timely pain management, and empathy behaviors, as seen currently with new programs implemented in hospital systems (Brosey & March, 2015; Jun et al., 2020; Loos, 2021; Mazurenko et al., 2017; Poirier et al., 2018; Schroeder et al., 2016; Titsworth et al., 2016).

Components of Empathy

Three components of empathy have been identified by psychologists: cognitive, emotional, and compassionate (Hojat, 2016). The cognitive component of empathy is the ability

to feel what another feels or interpret what they are thinking (Hojat, 2016). Sharing of feelings does not occur at this level (Hojat, 2016). The emotional component of empathy allows for a true connection by having the ability to share one's feelings (Hojat, 2016). Compassionate care is explained as a combination of cognitive and emotional empathy, demonstrating the ability to act after understanding another's perspective, if the need is present (Hojat, 2016).

Terms Defined

The study defines empathy as the ability to understand another person's point of view and to be able to place oneself in their situation concerning needs, emotions, and mental state to be able to assist an individual with a problem (Decety & Fotopoulou, 2015). An acute care hospital is a short-term stay, medical and surgical care facility treating various diagnoses (Liu & Kelz, 2018). An acute rehabilitation hospital or inpatient rehabilitation facility (IRF) is a short-term acute rehabilitation hospital consisting of 24-hour nursing care, physician oversight for medical management and 15 hours of therapy each week, with an average length of stay of 12 days (Zhang et al., 2022). The terms acute rehabilitation hospital and IRF are synonymous, acute rehabilitation hospital will be used throughout this paper. Nursing staff will include all registered nurses (RNs), licensed practical nurses (LPNs), and certified nursing assistants or patient care technicians (CNAs / PCTs).

Research Problem

As of 2021, the United States continues to rate last when comparing 11 high-income earning countries (Schneider et al., 2021). The U.S. infant mortality rate, access to healthcare, inconsistent quality, and cost of healthcare are inferior to nations comparable to the United States in size and government structure (Schneider et al., 2021). HCAHPS survey implementation has escalated the need for patient experience/satisfaction improvement to be a top priority for a

hospital's financial survival. Four thousand five hundred eighty-six hospitals currently participate in HCAHPS surveys in the United States (CMS, 2021). Only 455 of these 4,586 hospitals have a 5-star rating and receive full reimbursement for patient services. Just over 90% of hospitals only receive a partial payment, a devastating loss of income for an institution when 42% of a standard hospital's capacity is Medicare beneficiaries (CMS, 2021). The literature lacks proof that a clear strategy positively and consistently influences HCAHPS ratings. The time and funds to implement strategies not supported by the literature are not warranted. It is crucial to the financial survival of many acute care hospitals with lower HCAHPS survey ratings and the patient's quality of care and outcomes that solutions are researched and proven effective and generalizable.

Two empathy assessment tools stand out in literature. The Consultation and Relational Empathy (CARE) measure and the Jefferson Scale of Empathy (JSE) were shown in a systematic review to be of the highest quality to measure empathy successfully (Hong & Han, 2020). This study will explore the assessment tools further in future sections.

Issue and Population Affected

Improving patient satisfaction is key to improving quality care, patient outcomes, hospital reimbursement, and hospital usage by consumers (the patient) (CMS, 2021). The issue of low HCAHPS ratings relating to poor quality and patient outcomes is two-fold, affecting the consumer and the healthcare organization. Quality care and patient outcomes are sacrificed for the consumer if the patient experience is poor, measured by the HCAHPS survey. The hospital organization is affected financially**.** Hospital administrators need to implement proven strategies to improve these ratings as it directly affects the institution financially in two ways. First, reimbursement rates for Medicare are based on the hospital's HCAHPS ratings now. Secondly,

the publicly reported ratings could affect consumer usage of their facility, especially in locations where there are several hospitals to choose from in a comfortable radius.

Significance of the Research

Healthcare administrators in these times have a difficult task. They have the enormous challenge of financially balancing a budget to retain sufficient quality staff and maintain quality care supplies, utilities, ground upkeep, repairs, and maintenance. Offsetting these costs was challenging enough during the previous fee-for-service reimbursement times (Chen et al., 2020). It is even more challenging as healthcare reimbursement turns to patient-centered care and a value-based incentive program that focuses on affordable, efficient, high-quality care. A hospital needs to qualify for the full value-based incentive payment achieved by scoring in the top tier, known as top-box based on HCAHPS survey ratings (Chen et al., 2020; CMS, 2021).

The HCAHPS surveys are mandatory for hospitals subject to the Inpatient Prospective Payment System (IPPS), also known as the value-based incentive program (CMS, 2021). At the beginning of the last quarter of 2020, just under 3 million HCAHPS scores were reported from 4,586 participating acute care hospitals (CMS, 2021). Daily survey completions averaged 7,700 for 2020 (CMS, 2021). The basis for reimbursement is how high a hospital's score is on the HCAHPS survey. The top tier, known as the "top box" ranking, receives the highest reimbursement (CMS, 2021). This top-box consists of 9.9% of the 4,586 hospitals participating in the surveys (CMS, 2021). The other 91.1% lost vital dollars without full reimbursement. For this reason, hospitals implement trials of strategies, modifications, and patient satisfaction in-services to attempt to positively affect the HCAHPS survey ratings.

Purpose

This study aimed to investigate the relationship between patient satisfaction, demographics, and components of empathy among nursing staff in acute rehabilitation hospitals using a patient satisfaction question similar to the HCAHPS global questions, and a validated empathy assessment tool, The Jefferson Scale of Empathy for Health Professionals (JSE-HP) (Hojat, 2016).

Research Questions and Hypotheses

The following research questions and hypotheses guided this research study:

RQ1

Do acute rehabilitation hospitals in the United States rating greater than 8/10 utilizing a patient satisfaction survey similar to the HCAHPS global questions have a significantly higher component of empathy percentage seen with nursing staff (RN, LPN, and CNA / PCT staff) than the comparable acute rehabilitation hospitals in the United States rating less than 5/10 utilizing a patient satisfaction survey similar to the HCAHPS global questions, solely related to the "likelihood of recommending the hospital" category?

H1.1o – No statistical difference when comparing the percentage of a component of empathy seen with nursing staff between the lowest and highest rated hospitals explicitly relating to the "likelihood of recommending the hospital" category.

H1.1a – The acute rehabilitation hospitals rating greater than 8/10 will have a significantly higher percentage of a component of empathy seen with nursing staff than the acute rehabilitation hospitals in the United States rating less than 5/10 solely related to the "likelihood of recommending the hospital" category.

RQ2

To what extent do age demographics influence the components of empathy scores of acute rehabilitation hospital nurses?

H2.1o –Younger nurses (less than 30 years old) do not score significantly higher in empathy at an acute rehabilitation hospital compared to older nurses (30 years old or older).

H2.1a – Younger nurses (less than 30 years old) have a significantly higher component of empathy score at an acute rehabilitation hospital compared to older nurses (30 years old or greater).

RQ3

To what extent do gender demographics influence the components of empathy scores of acute rehabilitation hospital nurses?

H3.1o – Nurses that are female do not score significantly higher in empathy than nurses that are male.

H3.1a – Nurses that are female have a significantly higher component of empathy score at an acute rehabilitation hospital compared to nurses that are male.

RQ4

To what extent do race demographics influence the empathy scores of acute rehabilitation hospital nurses?

H4.1o - Caucasians do not have a significantly higher empathy score at an acute rehabilitation hospital compared to non-Caucasians.

H4.1a - Caucasians have a significantly higher empathy score at an acute rehabilitation hospital compared to non-Caucasians.

RQ5

To what extent do professional demographics influence the empathy scores of acute rehabilitation hospital nurses?

H5.1o - RN nursing staff at an acute rehabilitation hospital do not have a significantly higher component of empathy score at an acute rehabilitation hospital compared to non-RN nursing staff.

H5.1a - RN nursing staff at an acute rehabilitation hospital have a significantly higher component of empathy score at an acute rehabilitation hospital compared to non-RN nursing staff.

RQ6

To what extent do work status demographics influence the empathy scores of acute rehabilitation hospital nurses?

H6.1o - A higher percentage of full-time nursing staff at an acute rehabilitation hospital do not have a significantly higher component of empathy score at an acute rehabilitation hospital compared to non-fulltime nursing staff.

H6.1a - A higher percentage of full-time nursing staff at an acute rehabilitation hospital have a significantly higher component of empathy score at an acute rehabilitation hospital compared to non-fulltime nursing staff.

Methodology

This study is a quantitative, ecological study with a cross-sectional, correlational research design. The study included questions from two established surveys: a patient satisfaction rating similar to two questions from the 29-item HCAHPS survey (Appendix A) and the Jefferson Scale of Empathy – Health Professionals Version, a 20-item, 7-point Likert scale survey to

measure empathy (Appendix B). A demographic questionnaire was administered along with the empathy survey (Appendix C). With permission of the Clinical Research Review Committee (CRRC) at Encompass Health through the application process in the Clinical Research Portal, the researcher gathered patient satisfaction survey question data and administered the survey and questionnaire to nursing staff. The methodology used to collect data is detailed in Chapter III of this proposal.

Data Analysis

As described in Chapter III, the researcher collected quantitative data with a patient satisfaction rating similar to the two global questions from the 29-item HCAHPS survey (Appendix A) and the Jefferson Scale of Empathy – Health Professionals Version, a 20-item, 7-point Likert scale survey to measure empathy (Appendix B). A demographic questionnaire (Appendix C) was administered along with the empathy survey.

Organization of the Study

The study is organized into five chapters. The first chapter introduced the topic of healthcare quality and reimbursement and factors influencing patient satisfaction. The second chapter reviews the literature covering empathy and its effect on patient satisfaction, interventions implemented to improve empathy or patient satisfaction and barriers to empathy in healthcare professionals. The third chapter is about research methodology and data analysis. The fourth chapter presents the results and chapter five is the discussion.

Chapter II

Review of the Literature

The overall performance of the U.S. healthcare system is poor compared to 11 other industrialized countries (Schneider et al., 2021). The United States has made improvements over the last 12 years. Medicaid expansion and the Affordable Care Act have allowed 20 million more residents of the United States under the age of 65 years old to have affordable healthcare coverage (CDC, 2011; 2022). Medicare caps on the pricing of services and implementation of a value-based incentive program, with reimbursement dependent on a hospital's HCAHPS survey rating, have successfully improved quality and cost (Blumenthal & Abrams, 2020). Yet, as of 2021, the United States continues to rate last when comparing 11 high-income earning countries (Schneider et al., 2021).

A Hospital's HCHAPS Scores

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey financially motivates hospital systems to deliver high-quality healthcare in the acute care setting (CMS, 2021). Motivation is performed in two ways: first, by publicly reporting scores for all consumers to compare hospital rankings; and secondly, Medicare uses these scores for a value-based payment program that reimburses hospitals based on the facility's HCAHPS score, placing the facility in a top, middle, or bottom box payment category (Mazurenko et al., 2017). Just under 10% of hospitals are in the top-box category receiving full reimbursement for services (CMS, 2021). Lower-rated hospitals get an adjusted payment based on their middle-box or bottom-box rankings (CMS, 2021). Publicly reported scores for consumers to compare hospital HCAHPS survey rankings are reported as one to five stars. Five stars are the highest-ranking

facilities and equivalent to the top box category for reimbursement. At the same time, a one-star rating relates to the poorest-rated hospitals and is equal to a bottom box category (CMS, 2021).

HCAHPS and Insurance Reimbursement

According to the American College of Healthcare Executives survey of top issues confronting hospitals in 2019, healthcare administrators have a difficult mission (Mandala, 2020). CEOs were surveyed at 1,481 community hospitals (Mandala, 2020). There was a 27% response rate, with responding hospitals ranking financial concerns as the top immediate concern (Mandala, 2020). CEOs have the enormous challenge of financially balancing a budget to retain sufficient quality staff, employee training, and maintaining quality supplies. Offsetting these costs is challenging as healthcare reimbursement has turned to patient-centered care and a value-based incentive program with Medicare reimbursement focusing on affordable, efficient, high-quality care (Chen et al., 2020). To thrive, a hospital must qualify for the full value-based incentive payment achieved by scoring in the top-box category for reimbursement based on higher HCAHPS survey scores (Chen et al., 2020; CMS, 2021).

Medicare reported that 4,586 hospitals supplied HCAHPS scores with approximately 2.8 million completed surveys (CMS, 2021). Daily survey completions averaged 7,700 for 2020 (CMS, 2021). One key consideration for reimbursement from the Centers for Medicare and Medicaid Services (CMS) is how high a hospital's score is on the HCAHPS survey. The top-box ranking receives the highest reimbursement (CMS, 2021). For 2021, this top box consisted of 9.9% of the 4,586 hospitals participating in the surveys (CMS, 2021). The other 90.1% lost vital dollars without full reimbursement. That is, 4,132 hospitals did not receive full reimbursement from Medicare (CMS, 2021).

According to CMS (2021), the HCAHPS survey randomly reaches out to discharged patients with 29 questions about their recent hospital experience and satisfaction with their care. The 19 core questions are divided into seven categories regarding patient satisfaction. These seven categories are composite scores. The core questions are about vital areas relating to the patient's experience (communication with nurses and doctors, the responsiveness of hospital staff, the hospital environment cleanliness and noise level, communication about medicines and pain management, discharge information, and care transition). Two global categories exist, overall hospital rating and the likelihood of recommending the hospital. Improving patient satisfaction is critical to improving quality care, patient outcomes, hospital reimbursement with higher HCAHPS ratings, and hospital usage by consumers (the patient).

There were 62,840,267 Medicare enrollees in 2020. Medicare patients comprise 42% of a standard hospital's capacity (CMS, 2021). The percentage of revenue lost by lower-rated hospitals receiving partial reimbursement is significant. For this reason, hospitals implement strategies, modifications, and patient satisfaction in-services to positively affect the HCAHPS survey scores. These strategies need quality research to support program implementation without wasting time and resources.

The literature supports that empathy relates to improved healthcare quality and patient satisfaction (Ratka, 2018). Interventions focused on improving empathy should improve patient satisfaction and HCAHPS scores (Jun et al., 2020). Yet, there is limited research to support that HCAHPS scores correlate to nursing empathy, and specifically to a component of empathy to target, as well as limited support for reproducible empathy programs. Establishing and proving effective strategies through quality studies is crucial for the financial survival of acute care hospitals and for ensuring the quality of patient care.

Providers Who Impact HCAHPS Scores

Implementing successful strategies in the healthcare organization to improve the patient experience and HCAHPS ratings needs to encompass every employee. Yet, discovering precisely what will have the most significant impact on the patient experience needs to focus on the group with the most contact time with the patient. Since survey questions focus on physicians and nurses, the medical and nursing staff are the population of interest. Having round-the-clock contact with the patient, nurses influence the patient's experience and satisfaction (Fang et al., 2020). The nursing staff at any acute facility has the most extended and consistent interactions with the patients (Loos, 2021). They are considered to be the strength of the healthcare organization (Salmond & Echevarria, 2017). For this reason, research strategies to improve patient satisfaction and survey ratings are the focus of the literature review, with the primary focus on nursing staff in a hospital environment.

This literature review examines research on healthcare professionals and changes in empathy levels during didactic and clinical education; empathy and how it correlates to patient satisfaction, health outcomes, and healthcare quality; and specific interventions focused on improving patient satisfaction or HCAHPS survey improvement. Interventions with nursing staff, and nursing students are reviewed. A thorough search of nursing training programs implemented as a student, and post-employment will be performed. Additionally, the review considers demographic factors that may influence empathy levels, such as gender, cultural background, and clinical experience.

Strategies to improve patient satisfaction primarily focus on nursing and physician communication, empathy, compassionate care, and timely pain management (Brosey & March, 2015; Jun et al., 2020; Loos, 2021; Mazurenko et al., 2017; Poirier et al., 2018; Schroeder et al.,

2016; Titsworth et al., 2016). Any approach to improving the patient experience would benefit from an analysis to determine if the approach is positively associated with improving HCAHPS survey scores. Otherwise, vital time and resources could be wasted on methods that do not accomplish what is essential to the financial survival of hospitals, full reimbursement. Empathy is highlighted in the literature as a vital trait for healthcare professionals to improve patient satisfaction, patient outcomes, quality of care, and the patient experience (Decety & Fotopoulou, 2015; Jun et al., 2020; Loos, 2021; Ratka, 2018). A reproducible empathy training program could be a key strategy for improving HCAHPS survey ratings and healthcare quality in the United States. But first, establishing a correlation of the components of empathy of nursing staff to HCAHPS survey global scores will guide the creation of an effective reproducible empathy program. The developed program will open an area of further research to assess its effectiveness to improve healthcare professional empathy in the hospital setting.

Searching the literature for current effective strategies that correlate with an improvement in patient satisfaction or HCAHPS survey rankings in the hospital setting is the focus of this literature review. This analysis shows if there is quality research on reproducible effective patient satisfaction empathy programs. The review will search if an optimal time exists to implement a patient satisfaction empathy program and research regarding validated empathy assessment tools and the social baseline theory to further understand the connection between empathy and patient satisfaction.

Empathy Erosion in Healthcare Education

Empathy erosion in nursing and medical students is a real phenomenon. Several studies over the last decade have repeatedly demonstrated a significant decrease in empathy levels among nursing, physician assistant, and medical students over the course of their curriculum

(Ghadermazi et al., 2022; Gutiérrez-Puertas et al., 2020; Hojat, 2016; Karaman & Karaman, 2017; Mandel & Schweinle, 2012; Neumann et al., 2011; Nunes et al., 2011; Ward et al., 2012; Wilson et al., 2012). Ironically, a student's transition from the didactic phase to the clinical phase of their program, a time that patient interaction would be thought to strengthen a student's empathy level, caused a decline (Hojat, 2016; Ward et al., 2012; Williams et al., 2014). Nunes et al. (2011) found this decline in the first year of studies in five health-related fields, yet significant in nursing, medical and dental students. A study of empathy declines in physician assistant students found a significant decline to occur at the end of the didactic portion of a program, remaining stable during the clinical portion (Mandel & Schweinle, 2012).

Eikeland et al. (2014) carried out a qualitative study with medical students to explore reasons the students felt there was a decline in empathy during medical school. Students expressed understanding the role of a professional was what shaped eliminating their emotions and the ability to empathize with the patient. The students stated the curriculum's focus on academic skills over humanistic knowledge contributed to empathy decline.

Empathy and Patient Satisfaction

An extensive amount of literature supports the idea that empathy has a significant effect on patient satisfaction (Decety & Fotopoulou, 2015; Jun et al., 2020; Mazurenko et al., 2017; Ratka, 2018; Riess et al., 2012). Patient satisfaction is a measure of a patient's happiness with the healthcare they receive. Patient satisfaction is used as an indicator for healthcare quality. Many factors contribute to patient satisfaction, yet empathy is a major component. Empathetic communication is associated with improved patient satisfaction, increased treatment adherence, and health outcomes (Decety & Fotopoulou, 2015; Gleichgerrcht & Decety, 2013; Howick et al., 2018; Jun et al., 2020). Empathy has also increased physician well-being and professional

satisfaction (Gleichgerrcht & Decety, 2013; Riess et al., 2012). Improving empathy seems to be crucial for enhancing patient satisfaction, which has become a key indicator of healthcare quality. Research has focused on numerous approaches to improve patient satisfaction.

Patient Satisfaction Interventions

Strategies to improve patient satisfaction have primarily focused on nursing and physician communication, empathy, compassionate care, and timely pain management (Brosey & March, 2015; Jun et al., 2020; Loos, 2021; Mazurenko et al., 2017; Poirier et al., 2018; Schroeder et al., 2016; Titsworth et al., 2016). The research appears to have heavily focused on medical doctors and students (Batt-Rawden et al., 2013; Bearman et al., 2015; Menezes et al., 2021). A small amount of research exists on training and implementing empathy programs as a specific nursing strategy (Fang et al., 2020; Ratka, 2018). Systematic reviews have attempted to synthesize the information (Batt-Rawden et al., 2013; Levett-Jones et al., 2019; Menezes et al., 2021). Of these studies, nursing and medical, didactic and professional, there is little consistency with empathy interventions for reproducibility (Batt-Rawden et al., 2013; Levett-Jones et al., 2019). Only one recent study involving nursing students has implemented empathy strategies during the clinical phase of training (Levett-Jones et al., 2019).

Nursing Students

As healthcare has shifted from disease-centered care to patient-centered care, empathy, and caring, vital components of the nursing profession, have dominated the literature as necessary attributes to improve patient satisfaction and healthcare quality. Although the importance of improving empathy is well established in the literature with hundreds of studies, attempting to implement different approaches to influence empathy levels in nursing students remains unclear, and research is minimal.

Levett-Jones et al. (2019) reviewed 23 studies looking at undergraduate nursing students and the effectiveness of empathy education. Nine out of 23 quantitative studies demonstrated significant improvements in empathy levels with their trialed strategies. The review's key findings were that half of the studies using simulation activities and role-playing significantly improved empathy levels in nursing students; several studies implemented approaches with varying intensity, activities, and timeframes that could not be synthesized to formulate a solid conclusion; and only one study measured empathy over a more extended period. The other 22 studies measured empathy immediately after implementing an empathy intervention. Eight studies had control groups; four of these eight studies students were randomized. It should be noted that empathy tools used to assess these improvements varied. Some tools chosen to assess empathy levels have not been proven valid or reliable with the tested subjects. Twenty-one different empathy tools were used. Methodological quality was rated as moderate with the range of scores with the included studies.

The most promising empathy interventions were simulations involving vulnerable populations that allowed for debriefing and reflection. This intervention strategy was utilized by one-fourth of the reviewed studies, yet most simulations differed. Bas-Sarmiento et al. (2017) and Geckil et al. (2017) used role-playing; Haley et al. (2017) used manikin-based simulations; Everson et al. (2015) used 3D e-simulations; while Levett-Jones et al. (2017) simulated unilateral weakness with hemiparesis suits allowing students to simulate feeling what a patient feels.

Only one study assessed empathy changes after adding a new course to the nursing program (Sheehan et al., 2013). The course was not part of the core curriculum but was added as an elective (Sheehan et al., 2013). The Human Suffering course details were not given, making it difficult to replicate (Sheehan et al., 2013). The researchers performed pre- and post-tests with

the Jefferson Scale of Empathy Nursing Student Version (Sheehan et al., 2013). The scores improved significantly ($p < 0.001$) with multiple cohorts taking the elective class over 5 years (Sheehan et al., 2013).

Other studies included in the systematic review, implementing strategies to assess the effect on empathy levels, were based on lecture-based training with varying lengths and topics (Levett-Jones et al., 2019). Lecture-based training did not significantly improve empathy levels (Finch, 2016; Ward et al., 2012).

Recently, a study was performed to teach nursing students empathy using an Empathy Belly Simulator (Thomas et al., 2020). The results demonstrated a significant improvement in empathy levels, seen with concurrent validity, using the Kiersma-Chen Empathy Scale and the Jefferson Scale of Empathy Health Professional Students for pre-, mid-, and post-tests (Thomas et al., 2020). The focus on a specific population was a rare finding in the literature. The study confirms the practical use of a simulation intervention to successfully influence the ability of nursing students to see another's perspective and therefore give appropriate empathetic care.

Lastly and most recently, Kim (2023), implemented a patient-centered care program during a clinical affiliation for nursing students. Sixty third-year nursing students were divided into control and experimental groups. The comprehensive patient-centered care program was assigned to the experimental group, consisting of four training sessions for 65 minutes each over 2 weeks. Significant improvements occurred in the experimental group compared to the control group with individualized care, empathy, communication, and clinical stress levels. Empathy was measured with the Jefferson Scale of Empathy Health Profession Students version. The researchers recommended confirming the findings with future studies, with the control and experimental groups happening concurrently. This study used a non-synchronized design.

Nursing Assistants (CNAs and PCTs)

There is limited recent research on CNAs or PCTs specifically related to the inpatient hospital setting. Most studies focus on nursing retention solutions, lack of respect in the work environment, and work satisfaction for the CNA as a direct care worker in the skilled nursing home, long term nursing home, and assisted living facility settings (Behrens & Parmelee, 2018; Kennedy et al., 2020; Young et al., 2022).

The only study found relating CNAs to improving patient care and empathy was from 15 years ago. The study was performed in the nursing home setting focused on CNAs, compassionate care, and components of empathy when faced with the challenges of the dying patient (Schell & Kayser-Jones, 2007).

Nurses (RNs and LPNs)

Recent research raises the concern that healthcare professionals' empathy is declining (Bas-Sarmientos et al., 2019). Empathy is a crucial indicator of patient satisfaction and quality of care HCAHPS measures (Cleary & McNeil, 1988). Various interventions have been implemented in the acute care setting as hospitals scramble to find strategies to influence patient satisfaction positively (Davidson et al., 2016).

Communication and Pain Management

Davidson et al.'s (2016) research systematically reviewed interventions to improve hospital patient satisfaction with healthcare providers and systems. At this time, it was found that minimal high-quality studies that evaluated the effectiveness of interventions to improve patient satisfaction scores were confirmed by overall improvement in the HCAHPS survey scores. Out of 98 studies deemed appropriate for eligibility, 15 were of acceptable quality and included. Eight studies had statistically significant findings to improve at least one of the HCAHPS survey

domains. Five of the eight focused on communication and pain management, while three concentrated on the facility's cleanliness rating. Those excluded had small, or undocumented sample sizes, or lacked vital information to draw viable conclusions (Davidson et al., 2016).

Research findings express the importance of patient satisfaction. There is a pressing need for suitably designed interventions to assess new and reproducible approaches to have a positive influence on patient satisfaction and clinical outcomes that can be generalizable to other hospitals (Davidson et al., 2016). This systematic review narrowed down quality studies with significant findings to improve at least one of the HCAHPS domains. Five of eight acceptable research studies supported the hypothesis that the focus has been on pain management and communication (Davidson et al., 2016). Although, these studies failed to support the generalizability to apply this research across all acute care settings and prove that other programs implemented to improve patient satisfaction did not contribute to the statistical significance of the findings (Davidson et al., 2016). Ultimately, more quality studies are needed in all domains to improve patient satisfaction, not only those related to empathy.

According to a systematic review by Davidson et al. (2017), 44 of 59 studies that met inclusion criteria were excluded because they did not meet quality levels. Fifteen studies were included in the review. In summary, interventions focused on communication skills with physicians and nursing staff, pain management, hospital noise level, cleanliness, and targeting discharge information. Eight studies demonstrated statistically significant results yet had small participant sizes. Also, they were observational, and the test locations were already trending up with their HCAHPS scores or vital information was not shared to verify the study.

When looking at pain management specifically, Titsworth et al. (2016) performed a prospective quality improvement trial of a standardized protocol for pain medication

management to decrease postoperative pain and improve patient satisfaction. This study had a small sample size, documented to be 96 participants, and focused solely on neurosurgical patients and their effects on patient satisfaction ratings using the HCAHPS survey (Titsworth et al., 2016). This protocol significantly decreased postoperative pain ($p = 0.05$) on post-op day one. This research was an excellent start. Yet, generalizability is limited since it only included neurosurgical patients and had a small sample size without gender and age details.

Another study focused on improving nurse pain assessments to increase patient satisfaction (Schroeder et al., 2016). This research was a single-group pre/post-design study to improve patient satisfaction with improved pain management in older patients receiving total joint replacements (Schroeder et al., 2016). Patient satisfaction did increase, yet not significantly (Schroeder et al., 2016). The American Pain Society Patient Outcome Questionnaire-Revised did not change (Schroeder et al., 2016). While nursing knowledge did improve significantly (Schroeder et al., 2016). Again, studies correlating interventions to significant changes in patient satisfaction scores are lacking.

According to Poirier et al. (2018), pain management guided by pharmacists influenced patient satisfaction ratings with inpatient HCAHPS surveys seen over 3 years before and after the initiation of the intervention. This research also found that high-risk medications were used less frequently, improving patient safety. It was promising that an intervention to decrease opioid medication could improve patient satisfaction. These findings exemplify a successful intervention used across all acute care settings. The researchers noted that no other procedure changes that would have interfered with the findings occurred at that time. The researchers state that consultation and patient-centered approaches to pain management could affect patient

satisfaction ratings from their results. Yet, they also report more research needs to occur in this area (Poirier et al., 2018).

Nursing Communication

Communication is another focus for interventions to improve patient satisfaction on the HCAHPS survey. One example with a teach-back study by Centrella-Nigro and Alexander (2017) supported communication. They performed a quasi-experimental research study using two similar nursing units to trial the effectiveness of the teach-back method to improve HCAHPS scores (Centrella-Nigro & Alexander, 2017). Although a significant improvement occurred with improving knowledge scores and positive support from nursing was expressed for using the technique, patient satisfaction scores did not show substantial improvement (Centrella-Nigro & Alexander, 2017). These authors concluded that more research needs to occur in this area.

Jun et al. (2020) conducted an integrative review looking for interventions focused on the patient experience. They found eight peer-reviewed studies focusing on nursing implementing interventions to affect patient satisfaction in the acute care setting based on the HCAHPS scores. The research found areas that improved scoring, yet the categories were not explicitly defined to replicate care that occurred in each area. The areas were increasing nursing rounds, having a nurse specifically assigned to discharges, implementing post-discharge follow-up calls by the nurse, and improving continuing education for nursing (Jun et al., 2020). More research needs to define further what occurred during these nursing interventions so the process could be duplicated across health systems. The broad interventions covered in the peer-reviewed studies did not specifically link to patient satisfaction domains. Out of 573 articles in their initial search, only eight qualified for their review (Jun et al., 2020). Several of the studies were without pre- and post-statistical data analysis to show the significance of the changes with the proposed

interventions (Jun et al., 2020). Supporting research needs to continue in this area. The studies need to prove that significant changes occurred with improving patient satisfaction and reproducible interventions at the same level.

Brosey and March (2015) examined nursing practices but focused explicitly on trials conducted during hourly nursing rounds. The nurses addressed the patient's pain, elimination, environment, and positioning, defined as the PEEP rounds or 4P (pain/position/potty/periphery) rounds (Brosey & March, 2015). These nurses were educated on how to perform the rounds. It is questionable if training on compassion was also part of the program since staff rudeness decreased by 43% with this intervention (Brosey & March, 2015). Specifics to the interventions are in question: Were the nurses delivering compassionate care at a higher level, were the improvements based solely on more interaction with nursing, or was more patient education involved, affecting HCAHPS scores?

Empathy

Empathy is a multidimensional concept (Decety & Fotopoulou, 2015). Empathy skills or tendencies go hand in hand with improved communication, active listening, perceived support from the patient perspective, and trust (Loos, 2021). Focusing on improving empathetic interactions between patients and healthcare providers alone could be the recipe for significantly improving patient satisfaction and therefore HCAHPS survey measures. First, a successful empathy intervention must be developed, and higher empathetic interactions must be established.

Howick et al. (2018) proposed a clear understanding of training healthcare providers in empathetic behaviors and positive communication is required to implement successful interventions. They found that empathy and patient expectation interventions improve patient satisfaction. The studies in their review lacked comparative data, were difficult to interpret, or

did not contain sufficient details for the empathy training used to implement successful interventions to improve patient satisfaction. Biases were low with the systematic review due to their thorough inclusion/exclusion process.

Empathy is stated as the most remarkable characteristic of humanity, and it is necessary for healthcare (Ratka, 2018). Ratka (2018) supported the need for empathy to be trained, shown, and evaluated throughout healthcare. The research confirms that the literature correlates empathy with improvements in healthcare quality and proposes that training should be embedded throughout the didactic portion of healthcare professionals' curriculum. However, specific interventions to implement this recommendation effectively are not clearly defined (Ratka, 2018).

After performing a systematic review on empathy training in health sciences, Bas-Sarmiento et al. (2020) concluded that although studies, such as those by Cunico et al. (2012), have shown that it is possible to enhance the empathy skills of students and medical staff, there are no clear guidelines regarding the content, methods, or duration of training in nursing education. Like nursing students, registered nurse interventions had higher success if they included self-reflection and role-playing activities. The reviewers proposed solid theoretical frameworks, randomized control trials, standardizing the criteria to replicate and make a comparison, and triangulating the self-reported empathy scores with patients' opinions would benefit future research in this area.

The literature can confirm that empathy levels vary based on age and gender. Studies show that younger individuals and males consistently score lower empathy levels (Sommerlad et al., 2021). Future studies need to consider this common theme.

Generally, the literature shows that more extensive high-quality research is needed to support consistent, effective nursing intervention strategies in hospital settings to enhance the patient experience and improve patient satisfaction measures seen with HCAHPS ratings.

Demographics and Empathy

Empathy, an important component of human interaction, has been the subject of extensive research across various demographic factors. Studies have revealed patterns in empathy levels related to age, race, education, and gender.

Age-related changes in empathy appear to follow an inverse U-shaped curve, with cognitive empathy peaking in middle age before declining, while emotional empathy remains relatively stable throughout adulthood (Beadle & De la Vega, 2019; Sommerlad et al., 2021).

Sommerlad et al. (2021) studied participants in the United Kingdom aged 18 years to 90 years and found that the relationship between empathy and age varies depending on the type of empathy. Their study suggested that cognitive empathy increases from 18 years old until middle-age (around 60 years old) before declining. The researchers hypothesized that this inverse relationship was likely due to the increased higher cognitive demand required for perspective taking (cognitive empathy). Emotional empathy, which involves feeling what another is feeling, did not prove to have a significant relationship with age.

Beadle and De la Vega (2019) found a similar inverse relationship between age and Perspective Taking. The main findings purported that older adults demonstrated a reduction in brain activity in the dorsomedial prefrontal cortex, an area of the brain critical for cognitive empathy, compared to younger adults.

Racial differences in empathy scores have mixed results, with some studies suggesting higher empathy among certain minority groups, potentially due to shared experiences (Berg et

al., 2015; Berg et al., 2011; Hojat et al., 2020). It was hypothesized that the discrepancy existed due to the "wounded healer effect," which is defined as having a better understanding of others that suffer by sharing common experiences (Laskowski & Pellicore, 2002).

In contrast, Ward et al. (2009) found in a study with nursing students that no statistically significant difference existed between race considering White, Black or African American, and Asian students.

Unlike age, race, and gender, research examining the relationship between educational levels and empathy is limited. Two studies were found; the first was a nationwide academic survey of osteopathic students offered a rare opening to explore the link between academic background and empathy (Hojat et al., 2020). The analysis discovered that students with undergraduate degrees in "Social and Behavioral Sciences" and "Arts and Humanities" had statistically significant higher empathy scores (Hojat et al., 2020).

Another study was conducted on nursing students and found no statistical significance between academic studies and JSE scores, yet the comparison focused on undergraduate degrees, which are not the highest level of degrees achieved in the nursing profession (Ward et al., 2009).

Extensive research has focused on gender and its relationship with empathy. Gender differences in empathy have been consistently observed, with women generally scoring higher than men across various populations, geographical locations and healthcare professionals (Alcorta-Garza et al., 2005; Fjortoft et al., 2011; Hojat et al., 2020; Hojat & Gonnella, 2015; Hojat, 2016; Hojat et al., 2002; Hojat et al., 2001; Park et al., 2015).

Empathy Assessment Tools

The assessment of nursing students' empathy must be a valid assessment tool. Two assessment tools stood out in the literature: the Jefferson Scale of Empathy and the Consultation

and Relational Empathy (CARE) measure. The CARE measure is a ten-question survey that is patient-centered and filled out by a patient about the healthcare professional (Mercer, 2004). Although studies validate this tool with high reliability and validity, it is impractical for the sample needed for this study (Mercer, 2004).

Unlike other empathy assessment tools, the Jefferson Scale of Physician Empathy measures empathy in patient care (Fields et al., 2011b). This 20-item instrument measures empathy in physicians and practicing health professionals (HP-version), medical students (S-version), and health professions students other than medical students (HPS-version) (Fields et al., 2011b). The JSE has been interpreted into 56 languages, used by researchers and educators worldwide, and has been widely researched (Fields et al., 2011b) It has been proven to have high internal consistency, validity, and acceptable test-retest reliability (Fields et al., 2011a).

Barriers to Empathy

Yu et al. (2022) conducted a qualitative study to assess the barriers to empathy development in healthcare. They found that varying stability factor levels (high, medium, low) affected empathy growth which could explain differences in an individual's empathy expression. High stability components affecting empathy were innate personal characteristics and childhood experiences. Examples of medium factors relating to empathy abilities were one's culture and its development of communication norms, religion, and personal values. Lastly, low stability factors influencing empathy pertain to one's mental state, life stressors, and interpersonal interactions.

The researchers discussed causes of empathy erosion in practice and during training as aligned with other studies' findings. Stating that minimal life experiences, high workload, burnout, work culture, and desensitization affected empathy levels negatively (Wilkinson et al., 2017; Yu et al., 2022). The researchers found healthcare professional well-being, healthy work

culture, and proper rest correlated to higher empathy levels (Neumann et al., 2011; Yu et al., 2022).

Common Theories and Methodologies

The theoretical foundation used for this research to explain why empathy positively affects patients is the Social Baseline Theory (Decety & Fotopoulou, 2015). The Social Baseline Theory looks at the effects of empathy from the receiver's perspective rather than the constructs of empathy from the empathizer perspective (Decety & Fotopoulou, 2015). This theory then helps explain why empathy is essential for healthcare professionals and confirms why empathy positively affects patients. Patients would feel their care went beyond medications, vital signs, imaging, and lab results (Decety & Fotopoulou, 2015). They would feel supported and heard.

One of the most significant functions of social relationships is social support. Several studies reveal that it is crucial for maintaining physical and mental well-being, and an absence of support is associated with detrimental outcomes (Beckes & Coan, 2011; Decety & Fotopoulou, 2015). This is the basis of the Social Baseline Theory. It indicates that the perceived accessibility of an intimate partner or friend for support eliminates stress and, therefore, is associated with health and well-being (Beckes & Coan, 2011). On the other hand, a perception of a lack of support and isolation from society are key risk factors for psychological sickness and mortality (Beckes & Coan, 2011; Decety & Fotopoulou, 2015). The Social Baseline Theory has proven with several studies that stress responses, emotional regulation, and neural pathway activation are lower when social support is given or even thought to be available (Beckes & Coan, 2011; Decety & Fotopoulou, 2015). When social support is present, pain thresholds are higher and perceived threat cues are seen as less of a threat, as shown with lower prefrontal cortex activity (Decety & Fotopoulou, 2015).

Isolation with limited mobility with an illness and limited visiting hours add to a patient's seclusion. Interpreting needs, meeting needs, and building trust are critical components of an individual with empathy. Empathetic nursing staff are the social support supply to the secluded patient. This study utilizes the Social Baseline Theory as a foundation for the connection between empathy, perceived support of another, and a positive patient experience and patient outcomes.

Gaps in the Literature

Hospital systems have aimed at implementing interventions to improve hospital ratings explicitly based on the HCAHPS survey domain questions. Strategies have appeared to focus on patient satisfaction, primarily HCAHPS measures focused on improving nursing communication, empathy, compassion, and timely pain management, as seen with programs currently in hospital systems and studies in the literature. One would assume that there is high-quality research to prove these interventions would be successful. Yet, after a thorough literature search, high-quality research is lacking to link current strategies to improving patient satisfaction, as seen with patient satisfaction survey measures. The literature does not strongly support the interventions currently implemented in the healthcare systems.

Research that improves patient satisfaction scores in any HCAHPS domain lack support from high-quality, generalizable studies. Research needs to continue in this area to then be able to establish effective reproducible interventions. After multiple database searches, most studies found a link between empathy and patient satisfaction and outcomes. Yet, research is weak in defining the empathetic behaviors that influence patient satisfaction in a hospital setting and interventions that have proven to positively impact survey ratings for application in everyday healthcare. Future studies must focus on specific strategies to efficiently implement empathy

behaviors into the organization and processes to continue the gains applicable to all acute care settings. The financial stability of all hospitals ranking in the middle box and lower box reimbursement categories depends on quality research for answers and strategy guidance.

Chapter III

Methodology

This study is a quantitative, ecological study with a cross-sectional, correlational research design. It involved a diverse sample of nursing staff from acute rehabilitation hospitals owned by the same healthcare company. The sample included RNs, LPNs, CNAs, and PCTs/RNTs. Using a validated empathy assessment tool, components of empathy, including perspective-taking, compassionate care, and walking in the patient's shoes were measured. These measures were correlated with patient satisfaction scores derived from surveys that parallel the HCAHPS global questions.

The study included the patient satisfaction rating question similar to the two global HCAHPS questions (Appendix A) and the Jefferson Scale of Empathy – Health Professionals (JSE-HP) Version, a 20-item, 7-point Likert scale survey to measure empathy (Appendix B). One questionnaire was included, a demographic questionnaire (Appendix C) administered along with the empathy survey.

First, the researcher provided documents to the Radford University institutional review board (IRB) for approval. Then, the researcher obtained approval from the Clinical Research Review Committee (CRRC) at Encompass Health through an online application process to administer the JSE-HP, and the demographic questionnaire to the randomly selected acute rehabilitation hospitals. The researcher presented to all nursing staff present at randomly selected Encompass Health Inpatient Rehabilitation Facilities huddles and allowed the option to complete the JSE-HP, and the demographic questionnaire.

Hospital administration established the mode of delivery of the currently distributed patient satisfaction survey questions for their location. The mode remained consistent for the month nursing data was collected.

The JSE-HP was administered with an anonymous paper-based survey purchased from Thomas Jefferson University. Thomas Jefferson University supplied a scoring tool for the JSE-HP as part of the purchase. A statistician created a standard report and raw data file for the study's statistical analysis. A demographic questionnaire, using an anonymous paper-based survey, was administered with the JSE-HP paper survey.

All nursing staff on duty at the randomly selected Encompass Health hospitals, during both day and night shifts over three randomly chosen 24-hour periods, had the opportunity to participate. The timing for the staff survey and questionnaire completion coincided with the patient survey responses collected during the same period.

This study examined the associations between the patient satisfaction survey, demographics, and components of empathy of nursing staff employed at each respective hospital. This study took place in four randomly selected Encompass Health Inpatient Rehabilitation Hospitals with 60 or less beds.

Target Population

All nursing staff on shift at the four Encompass Health inpatient rehabilitation hospitals had access to the JSE-HP survey and demographic questionnaire through meetings or huddle times for Encompass Health. Two hospitals were randomly selected from hospitals rating greater than 8/10 on the patient satisfaction survey and two hospitals were randomly selected from hospitals rating less than 5/10 on the patient satisfaction survey.

Participant Inclusion Criteria

The participants of this study included all nursing staff employed at each randomly selected hospital. The study included direct hospital employees, travel, and contract nursing staff employed in full-time, part-time, and per diem positions over the selected weeks. The nursing staff were defined as all RNs, LPNs, and CNAs / PCTs / RCTs. All nursing staff had access to the JSE-HP survey and demographic questionnaires in paper form.

Participant Exclusion Criteria

Nursing staff on leave during the 4-week JSE-HP version survey access were excluded. A participant's incomplete data and failure to complete the survey, per survey guidelines of no more than four questions left unanswered, were excluded.

Sampling Strategy

The recommended survey return sample size was calculated using the Raosoft - sample size calculator based on each hospital's total number of full-time to part-time nursing staff employees. The calculated sample size for each population was achieved to reduce the margin of error to less than 5%.

The U.S. Bureau of Labor Statistics (2021) reported that 60% of the 3,300,000 working RNs are employed in a hospital; 14% of 641,240 employed LPNs are working in a hospital. There are 416 acute inpatient rehabilitation hospitals in the US. The total number of RNs, LPNs, and nursing assistants working for Encompass Health acute rehabilitation hospitals is approximately 10,300 across 163 hospitals in the United States.

The estimated sample size was 60 for the two randomly selected hospitals rating less than 5/10 and 70 for the two randomly selected hospitals rating greater than 8/10 on the patient satisfaction survey using the Raosoft sample calculator.

Instruments and Measures

HCAHPS Survey

An acute rehabilitation hospital patient satisfaction survey with questions similar to the two global questions on the HCAHPS survey (Appendix A) was utilized in this study to measure a patient's experience/satisfaction with their hospital stay. According to CMS (2021), the HCAHPS survey is the first national, standardized, publicly reported survey given to patients to report on their perception of their hospital care experience. The 19 core questions divide into seven categories regarding patient experience related to patient satisfaction. These seven categories are composite ratings. The core questions are about vital areas relating to the patient's experience (communication with nurses and doctors, the responsiveness of hospital staff, the hospital environment cleanliness and noise level, communication about medicines and pain management, discharge information, and care transition). Two global categories exist, overall hospital rating and the likelihood of recommending the hospital.

Jefferson Scale of Empathy

The second tool used in this study was the Jefferson Scale of Empathy for Health Professionals Version (Appendix B). Dr. Mohammadreza Hojat developed the JSE to measure empathy in physicians and other health professionals involved with patient care in a medical setting (Hojat, 2016). It has been validated by health professionals and health profession students (Hojat, 2016). The Jefferson Scale of Empathy has been approved in 85 countries and translated into 56 languages (Hojat, 2016; Hojat et al., 2005).

Data Collection

After IRB and CRRC approval were received from each facility, the study proceeded in the following manner. First, the researchers collaborated with the four randomly chosen

hospitals' directors or nursing managers to coordinate a meeting or huddle times to allow all nursing staff to participate in a paper survey, including the informed consent cover letter, the JSE-HP survey, and the demographic questionnaire. Deadline dates were created and met through collaboration. The opening page of the survey had the informed consent statement, a confidentiality statement, and a description of the survey. A survey completion estimated time of fewer than 10 minutes was included. Incentives for completion were two drawings for $50 gift cards at each site.

Third, the patient satisfaction survey questions followed the specific hospitals already established administering protocol for consistency, which varied between 3 to 7 days after discharge. The researcher utilized the Thomas Jefferson University JSE-HP data file results with a standard report and data calculations for the patient satisfaction survey ratings once the data was accessible to the participating hospitals for the study's statistical analysis. All data used will be reported in the data file with the statistician for the JSE-HP. The patient satisfaction surveys for each hospital will be utilized as reported to the corporation.

Data Analysis

Descriptive statistics, Pearson correlation coefficients, ANOVA and T-tests were computed to analyze correlations between each hospital's percentage of empathetic nursing employees, components of empathy percentage breakdown, demographics, and patient survey ratings for a top (greater than 8/10) and bottom (less than 5/10) ranking. A total of 10 points are possible, on a scale of zero to 10, with zero being the lowest rating and 10 being the highest. Statistical significance was set at $p < .05$ for all analyses. Effect size was established. Data analysis was completed using IBM SPSS version 28.0.

Data collected was entered into a basic Excel spreadsheet from the JSE-HP dataset provided from Thomas Jefferson University, the hospital number, and the demographics questionnaire that contains columns for the values reported above and, in the codebook/data analysis table. Using the bivariate procedure, this data was analyzed in SPSS statistics version 28.0. The output from -1 to +1 was used to determine whether to reject the null hypothesis with values nearing one representing a correlation, or to fail to reject the null hypothesis with values approaching zero representing no correlation.

Data Analysis Table

RQ1: Do acute rehabilitation hospitals in the United States rating greater than 8/10 utilizing a patient satisfaction survey similar to the HCAHPS global questions have a significantly higher component of empathy percentage seen with nursing staff (RN, LPN, and CNA / PCT staff) than the comparable acute rehabilitation hospitals in the United States rating less than 5/10 utilizing a patient satisfaction survey similar to the HCAHPS global questions, solely related to the "likelihood of recommending the hospital" category?

	Hypotheses	**IV's**	**IV(s) data**	**DV(s)**	**DV(s) data**	**Statistical Test**
H2.1a	The acute rehabilitation hospitals rating greater than 8/10 will have a significantly higher percentage of a component of empathy seen with nursing staff than the acute rehabilitation hospitals in the US rating less than 5/10 solely related to the 'Likelihood of recommending the hospital' category.	MEAN_JSE_RC Mean scores of JSE-HP total and components of empathy	Continuous	MEAN_RC Mean of patient satisfaction scores > 8/10 and mean of patient satisfaction scores < 5/10	Continuous	Pearson's Correlation
		PRCNT_JSE_RC Percentage of nursing staff JSE_HP total empathy scores and percentage of each component of empathy divided into low, medium, high empathy ranges based on the mean	Categorical	Top- rated hospitals; Bottom rated hospitals	Categorical	Chi-square Test of Independence

RQ2: To what extent do age demographics influence the empathy scores of acute rehabilitation hospital nurses?

	Hypotheses	IV's	IV(s) data	DV(s)	DV(s) data	Statistical Test
H2.1a	Younger nurses (less than 30 years old) have a significantly higher component of empathy score at an acute rehabilitation hospital compared to older nurses (30 years old or greater).	AGE_RC Younger nurses (less than 30 years old) Older nurses (o1 years old or greater)	Categorical	MEAN_JSE_RC Mean of nursing staff total empathy scores and components of empathy mean scores	Continuous	Two-tailed independent *t*-tests ANOVA

RQ3: To what extent do gender demographics influence the empathy scores of acute rehabilitation hospital nurses?

	Hypotheses	IV's	IV(s) data	DV(s)	DV(s) data	Statistical Test
H3.1a	Women have a significantly higher component of empathy score at an acute rehabilitation hospital compared to men.	GENDER_RC Women and Men	Categorical	MEAN_JSE_RC Mean of nursing staff total empathy scores and components of empathy mean scores	Continuous	Two-tailed independent *t*-tests ANOVA

RQ4: To what extent do race demographics influence the empathy scores of acute rehabilitation hospital nurses?

	Hypotheses	IV's	IV(s) data	DV(s)	DV(s) data	Statistical Test
H4.1a	Caucasians have a significantly higher component of empathy score at an acute rehabilitation hospital compared to non-Caucasians.	RACE_RC Caucasians All other races	Categorical	MEAN_JSE_RC Mean of nursing staff total empathy scores and components of empathy mean scores	Continuous	Two-tailed independent *t*-tests ANOVA

RQ5: To what extent do professional demographics influence the empathy scores of acute rehabilitation hospital nurses?

	Hypotheses	IV's	IV(s) data	DV(s)	DV(s) data	Statistical Test
H5.1a	To what extent do professional demographics influence the empathy scores of acute rehabilitation hospital nurses?	WRKSTATUS_RC Full-time All other work status levels	Categorical	MEAN_JSE_RC Mean of nursing staff total empathy scores and components of empathy mean scores	Continuous	Two-tailed independent *t*-tests ANOVA

RQ6: To what extent do work status demographics influence the empathy scores of acute rehabilitation hospital nurses?

	Hypotheses	IV's	IV(s) data	DV(s)	DV(s) data	Statistical Test
H6.1a	A higher percentage of full-time nursing staff at an acute rehabilitation hospital have a significantly higher component of empathy score at an acute rehabilitation hospital compared to non-fulltime nursing staff.	WRKSTATUS_RC Full-time All other work status levels	Categorical	MEAN_JSE_RC Mean of nursing staff total empathy scores and components of empathy mean scores	Continuous	Two-tailed independent *t*-tests ANOVA

Institutional Review Board

The study followed ethical guidelines and received approval from the IRB for Radford University and CRRC for Encompass Health Inpatient Rehabilitation Hospitals. Approval with an expedited application was obtained before the study began. All data were anonymous and voluntary.

Limitations

Several study limitations exist. One limitation may be that the nursing staff were not the only healthcare personnel encountering the patients during their acute care hospitalization. Variations in employees may have skewed results, placing an Encompass Health location in the lower or higher performing category during random selection. Second, employees' frequency of shifts may have altered the percentages of the varying components of empathy and skewed the results. Also, inferences were drawn from group level data, which could limit the ability to establish a causal relationship or control for confounding variables. Lastly, bias could have occurred when data were aggregated, leading to a distortion of variable associations especially if group size varied and limitations may exist due to self-reported data.

Chapter IV

Results

The demographic characteristics of the sample reveal a diverse group of 132 participants. The ranking distribution shows that 72 (54.50%) of the participants were from top-rated hospitals, scoring greater than 8/10, while 60 (45.50%) were in the bottom-rated hospitals, scoring less than 5/10. Regarding age, the sample comprised 11.36% under 30 years old, 26.52% aged 30-39, 30.30% aged 40-49, and 31.06% over 49 years old. In terms of gender, the overwhelming majority were female (91.67%), with males representing 7.58% of the sample, and 0.76% of the gender data was missing. The racial composition included 36.36% White, 43.18% Black or African American, 5.30% Hispanic or Latino, 8.33% Asian, 4.55% Multi-racial, and 2.27% Other. The professions of the participants varied, with 52.27% being Registered Nurses (RN), 12.88% Licensed Practical Nurses (LPN), 21.97% Certified Nursing Assistants (CNA), 4.55% Patient Care Technicians (PCT), 6.06% Rehab Nursing Technicians, and 2.27% reporting none of the above professions. Regarding employment status, 65.91% were full-time hospital employees, 12.88% part-time hospital employees, 16.67% hospital employees working Per Diem, 3.03% full-time contract or travel employees, and 0.76% reported other employment statuses. Additionally, 0.76% of the employment status data was missing (Table 1).

Table 1

Sample Characteristics (N = 132)

Variable	*n*	*%*
Ranking		
Greater than 8/10 rated hospitals	72	54.50
Less than 5/10 rated hospitals	60	45.50
Age		

	<30 years old	15	11.36
	30-39 years old	35	26.52
	40-49 years old	40	30.30
	>49 years old	41	31.06
Gender			
	Male	10	7.58
	Female	121	91.67
	Missing	1	0.76
Race			
	White	48	36.36
	Black or African American	57	43.18
	Hispanic or Latino	7	5.30
	Asian	11	8.33
	Multi-racial	6	4.55
	Other	3	2.27
Profession			
	Registered Nurse (RN)	69	52.27
	Licensed Practical Nurse (LPN)	17	12.88
	Certified Nursing (CNA)	29	21.97
	Patient Care Technician (PCT)	6	4.55
	Rehab Nursing Technician	8	6.06
	None of the above	3	2.27
Employment Status			
	Hospital employee full-time	87	65.91
	Hospital employee part-time	17	12.88
	Hospital employee Per Diem / Pool	22	16.67
	Contract / travel employee full-time	4	3.03
	Other	1	0.76
	Missing	1	0.76

Table 2

Summary Statistics

Variable	*M*	*SD*	*n*	Skewness	Kurtosis
Years in Profession	15.52	10.70	125	0.61	-0.21

Reliability and Descriptive Statistics

In assessing the reliability of empathy and its subscales, Cronbach's alpha coefficients were calculated. The interpretation of these coefficients follows the guidelines suggested by George and Mallery (2018), which classify reliability as excellent for alpha values greater than α = .9, good for values greater than α = .8, acceptable for values over α = .7, questionable for values above α = .6, poor for values above α = .5, and unacceptable for values α = .5 or lower.

The results revealed that the Empathy scale, which serves as the overarching measure, had an alpha of .73, falling into the "acceptable" category. This scale, comprised of 20 items, also exhibited a 95% confidence interval ranging from .67 to .78. The Perspective Taking scale, consisting of 10 items (α = .66), categorized as "questionable," with confidence bounds from .58 to .73. The Compassionate Care scale included eight items (α = .63), questionable, with a confidence interval from .56 to .71. Lastly, the Walking in Patient Shoes scale, with just two items (α = .61), also falling into the "questionable" category, with a confidence interval extending from .51 to .72. These findings indicate varying levels of reliability across the scales, with the overall Empathy scale showing acceptable reliability. Table 3 presents the results of the reliability analysis.

Table 3

Reliability

Scale	No. of Items	α	Lower Bound	Upper Bound
Perspective Taking	10	.66	.58	.73
Compassionate Care	8	.63	.56	.71
Walking in Patient Shoes	2	.61	.51	.72
Empathy	20	.73	.67	.78

Note. The lower and upper bounds of Cronbach's α were calculated using a 95.00% confidence interval.

Descriptive Statistics

The observations for Perspective Taking had an average of 60.32 (SD = 6.42, Skewness = -0.54, Kurtosis = 0.04). The observations for Compassionate Care had an average of 43.53 (SD = 7.50, Skewness = -0.87, Kurtosis = 1.04). The observations for Walk in Shoes had an average of 11.57 (SD = 2.55, Skewness = -1.23, Kurtosis = 0.94). The observations for Empathy had an average of 115.43 (SD = 12.29, Skewness = -0.60, Kurtosis = 0.59). According to Westfall and Henning (2013), when the skewness is greater than 2 in absolute value, the variable is considered to be asymmetrical about its mean. Additionally, when the kurtosis is greater than or equal to 3, the variable's distribution is markedly different from a normal distribution in its tendency to produce outliers. In this case, all the variables demonstrate skewness and kurtosis values that suggest relatively normal distributions. The summary statistics are presented in Table 4.

Table 4

Summary Statistics Table for Key Variables

Variable	*M*	*SD*	*n*	Skewness	Kurtosis
Perspective Taking	60.32	6.42	132	-0.54	0.04
Compassionate Care	43.53	7.50	132	-0.87	1.04
Walk in Shoes	11.57	2.55	132	-1.23	0.94
Empathy	115.43	12.29	132	-0.60	0.59

Pearson Correlation Analysis

A Pearson correlation analysis was conducted to examine the relationships among Empathy, Perspective Taking, Compassionate Care, Walk in Shoes, and Years in Profession. Cohen's standard (1988) was used to interpret the effect sizes, with coefficients between .10 and .29 indicating a small effect, .30 to .49 indicating a moderate effect, and .50 and above indicating a large effect.

Significant positive correlations were found between several variables. Empathy was strongly correlated with Perspective Taking (r = .72, p < .001), Compassionate Care (r = .83, p < .001), and Walk in Shoes (r = .59, p < .001), all indicating large effect sizes. Perspective Taking showed a small positive correlation with both Compassionate Care (r = .26, p = .024) and Walk in Shoes (r = .24, p = .031). Compassionate Care had a moderate positive correlation with Walk in Shoes (r = .43, p < .001). No other significant correlations were observed. The results of these correlations are detailed in Table 5.

Table 5

Pearson Correlation Matrix

Variable	1	2	3	4	5
1. Empathy	-				
2. Perspective Taking	.72*	-			
3. Compassionate Care	.83*	.26*	-		
4. Walk in Shoes	.59*	.24*	.43*	-	
5. Years in Profession	-.03	-.06	.04	-.10	-

Top and Bottom Ranked Hospitals

Two-tailed independent samples *t*-tests were conducted to examine whether the mean of Empathy and its subscales were significantly different between the top and bottom rated hospitals.

The results indicated that there were no significant differences in Empathy scores between the bottom rated hospitals, less than 5/10 (M = 114.04, SD = 11.56) and the top rated hospitals, greater than 8/10 (M = 116.61, SD = 12.83), t(130) = -1.22, p = .226, d = .213. Similarly, Perspective Taking did not show a significant difference between the bottom rated hospitals (M = 59.41, SD = 5.79) and the top rated hospitals (M = 61.07, SD = 6.85), t(130) = -1.45, p = .222, d = .260. For Compassionate Care, no significant difference was found between

the bottom rated hospitals (*M* = 43.01, *SD* = 7.80) and the top rated hospitals (*M* = 43.97, *SD* = 7.28), *t*(130) = -0.73, *p* = .465, d = .128. Lastly, the Walk in Shoes subscale also showed no significant difference between the bottom rated hospital (*M* = 11.58, *SD* = 2.84) and the top-rated hospitals (*M* = 11.57, *SD* = 2.31), *t* (130) = 0.04, *p* = .968, d = .007 (Table 6).

Table 6

Two-Tailed Independent Samples t-Test for Empathy and Subscales by Ranking

Variable	Bottom Rated (n=60)		Top Rated (n=72)				
	M	*SD*	*M*	*SD*	*t*	*p*	d
Empathy	114.04	11.56	116.61	12.83	-1.22	.226	.213
Perspective Taking	59.41	5.79	61.07	6.85	-1.45	.222	.260
Compassionate Care	43.01	7.80	43.97	7.28	-0.73	.465	.128
Walk in Shoes	11.58	2.84	11.57	2.31	0.04	.968	.007

Note. N = 132. Degrees of Freedom for the *t*-statistic = 130. *d* represents Cohen's *d*.

Chi-square test of independence was conducted to examine whether acute rehabilitation hospitals rating greater than 8/10 utilizing a patient satisfaction survey similar to the HCAHPS survey global questions have a significantly higher component of empathy percentage seen with nursing staff (RN, LPN, and CNA/PCT staff) compared to those hospitals rating less than 5/10, solely related to the “likelihood of recommending the hospital” category. The results are presented in Table 7.

Table 7

Chi-Square Test Results Comparing Empathy Components Between Bottom Rated Hospitals, Scoring Less Than 5/10 and Top-rated Hospitals, Scoring Greater Than 8/10 at Acute Rehabilitation Hospitals Based on Patient Satisfaction Ratings

	Bottom rated hospitals, scoring less than 5/10	Top rated hospitals,

		scoring greater than 8/10							
		n	%	*n*	%	X^2	*df*	*p*	*V*
Empathy	Low	7	11.7	9	12.7	2.91	2	.233	0.149
	Medium	48	80.0	49	69.0				
	High	5	8.3	13	18.3				
Perspective Taking	Low	10	16.7	9	12.5	4.09	2	.129	0.176
	Medium	45	75.0	48	66.7				
	High	5	8.3	15	20.8				
Compassionate Care	Low	11	18.3	8	11.1	1.46	2	.482	0.105
	Medium	42	70.0	56	77.8				
	High	7	11.7	8	11.1				
Walk in Shoes	Low	9	15.0	11	15.3	0.002	1	.965	0.004
	Medium	51	85.0	61	84.7				

Empathy

The association between hospital performance (top vs. bottom) and levels of empathy among nursing staff was higher in the top rated hospital yet the difference was not statistically significant, $\chi^2(2) = 2.91$, $p = .233$, V = 0.149. The distribution of empathy levels was similar across the two groups. Specifically, 11.7% of the low-performing hospitals had low empathy, 80.0% had medium empathy, and 8.3% had high empathy. In contrast, 12.7% of the high-performing hospitals had low empathy, 69.0% had medium empathy, and 18.3% had high empathy. Figure 1a demonstrates these findings.

Perspective Taking

The association between hospital performance and levels of perspective-taking among nursing staff was higher in the top rated hospitals yet the difference was not statistically significant, $\chi^2(2) = 4.09$, $p = .129$, V = 0.176. In the bottom rated hospitals, scoring less than 5/10, 16.7% had low perspective-taking, 75.0% had medium perspective-taking, and 8.3% had high perspective-taking. In the top-rated hospitals, scoring greater than 8/10, 12.5% had low

perspective-taking, 66.7% had medium perspective-taking, and 20.8% had high perspective-taking. Figure 1b demonstrates these findings.

Compassionate Care

Similarly, no significant relationship was found between hospital performance and levels of compassionate care among nursing staff, $\chi^2(2, N) = 1.46$, $p = .482$, $V = 0.105$. For the bottom rated hospitals, scoring less than 5/10, 18.3% had low compassionate care, 70.0% had medium compassionate care, and 11.7% had high compassionate care. For the top-rated hospitals, scoring greater than 8/10, 11.1% had low compassionate care, 77.8% had medium compassionate care, and 11.1% had high compassionate care. Figure 1c demonstrates these findings.

Walk in Shoes

The relationship between hospital performance and the "Walk in Shoes" component was not statistically significant, $\chi^2(1) = 0.002$, $p = .965$, $V = 0.004$. Both bottom rated hospitals, scoring less than 5/10 and top-rated hospitals, scoring greater than 8/10 had similar distributions, with 15.0% and 15.3% having low "Walk in Shoes" scores, respectively. There were no participants who scored in the high category (+1 standard deviation from the mean). Figure 1d demonstrates these findings.

Figure 1a

The Distribution of Empathy Levels Seen in Bottom and Top-Rated Hospitals

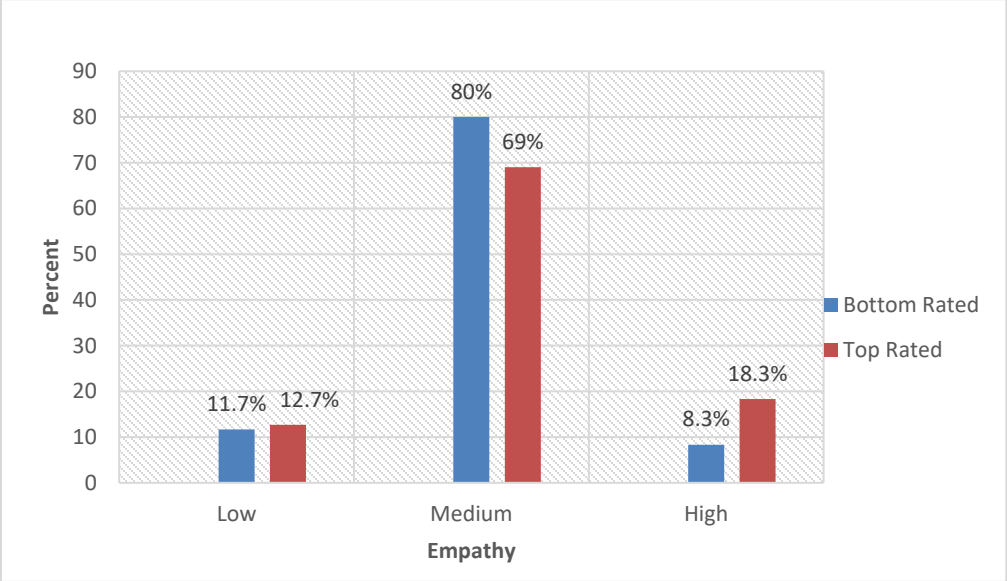


Figure 1b

The Distribution of Perspective Taking Empathy Levels Seen in Bottom and Top-Rated Hospital

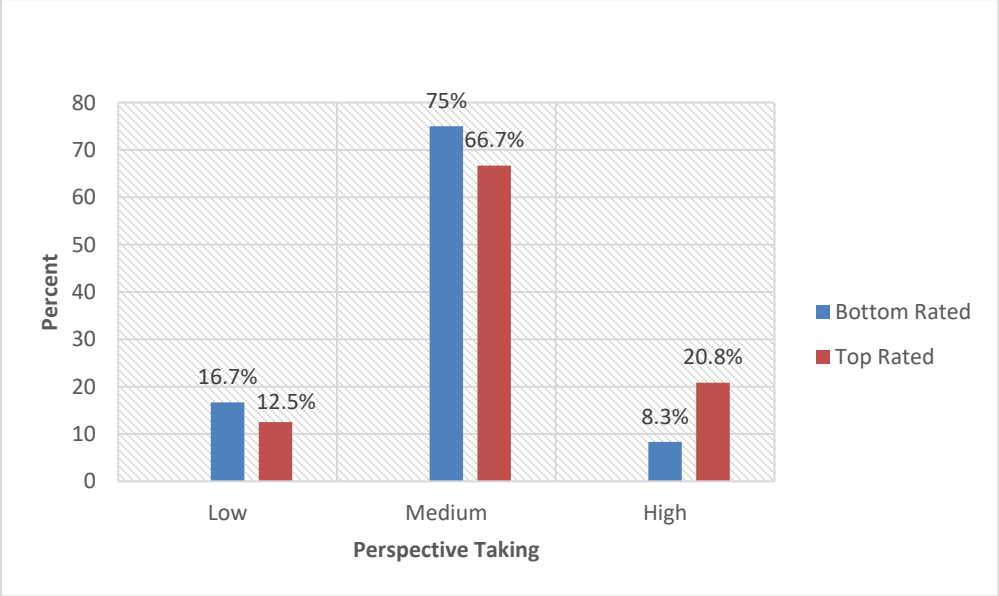


Figure 1c

The Distribution of Compassionate Care Levels Seen in Bottom and Top-Rated Hospital

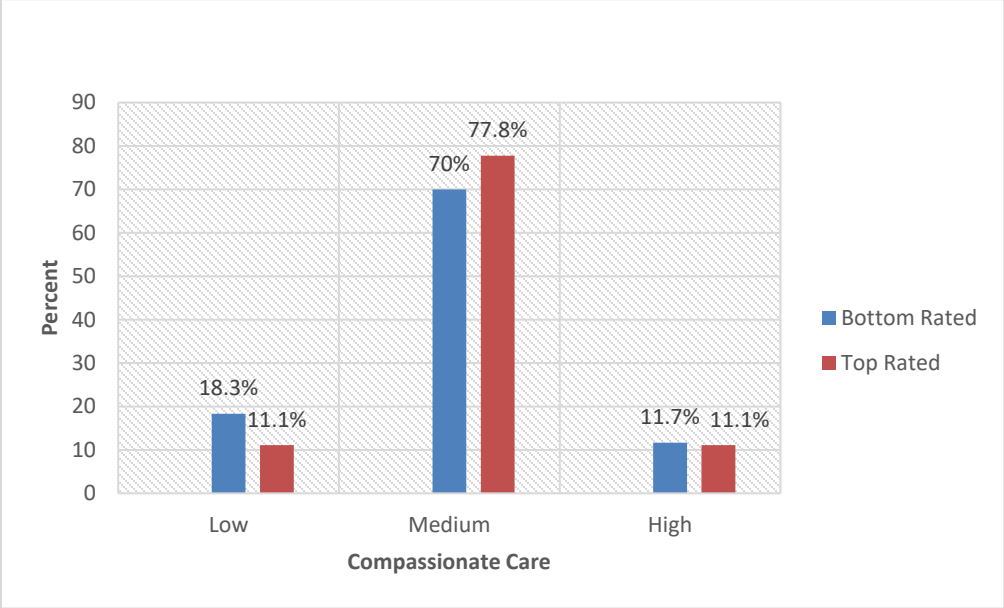
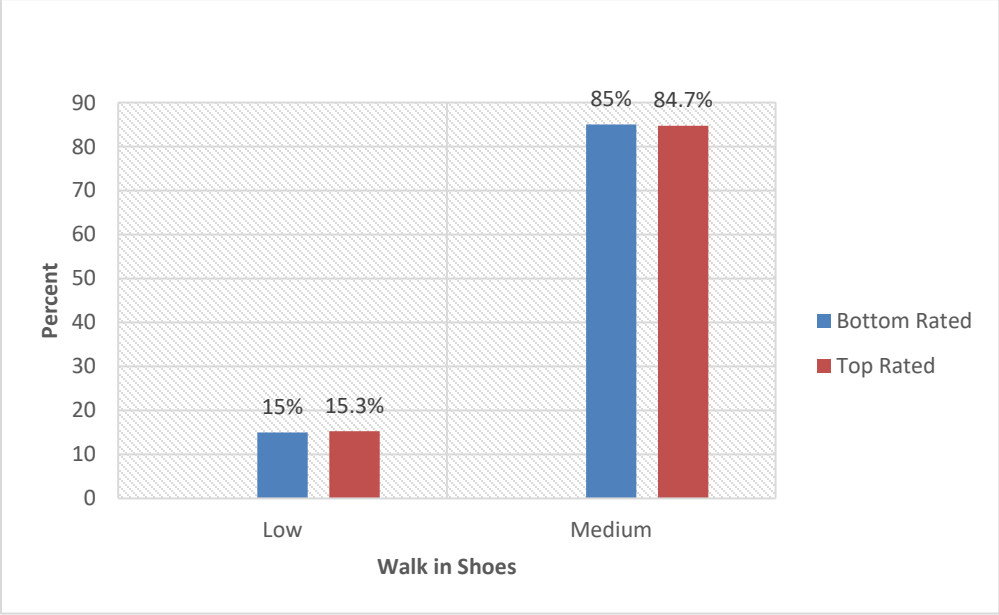


Figure 1d

The Distribution of Walking in Shoes Empathy Levels Seen in Bottom and Top-Rated Hospital



Age

Two-tailed independent samples *t*-tests were conducted to examine whether the mean of Empathy scores and its subscales were significantly different between nurses under 30 years old and those 30 years and older. The results are presented in Table 8.

Table 8

Two-Tailed Independent Samples t-Test for Empathy and Subscales by Ranking

Variable	<30 years old (n=15)		30+ years old (n=116)				
	M	*SD*	*M*	*SD*	*t*	*p*	d
Empathy	123.76	5.98	114.28	12.53	2.88	.005	0.791
Perspective Taking	64.88	3.89	59.66	6.44	3.06	.003	0.840
Compassionate Care	46.14	4.83	43.20	7.77	1.43	.156	0.392
Walk in Shoes	12.74	1.22	11.42	2.65	1.90	.060	0.521

The analysis revealed a significant difference in empathy scores with nurses under 30 years old (M = 123.76, SD = 5.98) scoring higher than those 30 years and older (M = 114.28, SD = 12.53), $t(129) = 2.88$, $p = .005$, with a moderate effect size (d = 0.791). For the perspective taking subscale, nurses under 30 years old (M = 64.88, SD = 3.89) scored significantly higher than those 30 years and older (M = 59.66, SD = 6.44), $t(129) = 3.06$, $p = .003$, with a moderate effect size (d = 0.840). However, no significant difference was found for the compassionate care subscale between nurses under 30 years old (M = 46.14, SD = 4.83) and those 30 years and older (M = 43.20, SD = 7.77), $t(129) = 1.43$, $p = .156$, with a small effect size (d = 0.392). Lastly, the walk in shoes subscale showed no significant difference between nurses under 30 years old (M = 12.74, SD = 1.22) and those 30 years and older (M = 11.42, SD = 2.65), $t(129) = 1.90$, p = .060, with a small to moderate effect size (d = 0.521).

Welch's t-test was conducted to compare the mean years in the profession between those under 30 years old and those 30 years or older (Table 9). The results indicated that, on average, those above 30 years old (M = 17.21, SD = 10.27) had statistically significant more years' experience in the profession than those under 30 years old (M = 3.10, SD = 1.84), $t(116.13) = -12.96$, $p < .001$, Cohen's d = 1.456.

Table 9

Two-Tailed Independent Samples t-Test for Years of Experience and Subscales by Age

<30 years old (n=15)		30+ years old (n=110)				
M	*SD*	*M*	*SD*	*t*	*p*	*d*
3.10	1.84	17.21	10.27	-12.96	<.001	1.465

Gender

Two-tailed independent samples *t*-tests were conducted to examine whether the mean of Empathy and its subscales were significantly different between males and females.

The results indicated that there were no significant differences in Empathy scores between males (M = 115.00, SD = 12.17) and females (M = 115.40, SD = 12.39), $t(129) = -0.10$, p = .922, d = 0.03. Similarly, Perspective Taking did not show a significant difference between males (M = 60.00, SD = 7.50) and females (M = 60.28, SD = 6.34), $t(129) = -0.13$, p = .895, d = 0.04. For Compassionate Care, no significant difference was found between males (M = 43.60, SD = 5.78) and females (M = 43.53, SD = 7.68), $t(129) = 0.03$, p = .979, d = 0.01. Lastly, the Walk in Shoes subscale also showed no significant difference between males (M = 11.40, SD = 2.27) and females (M = 11.58, SD = 2.59), $t(129) = -0.22$, p = .828, d = 0.08 (Table 10). These results suggest that gender did not significantly impact the levels of Empathy or its subscales.

Table 10

Two-Tailed Independent Samples t-Test for Empathy and Subscales by Ranking

Variable	Male (n=10)		Female (n=121)				
	M	*SD*	*M*	*SD*	*t*	*p*	d
Empathy	115.00	12.17	115.40	12.39	-0.10	.922	0.03
Perspective Taking	60.00	7.50	60.28	6.34	-0.13	.895	0.04
Compassionate Care	43.60	5.78	43.53	7.68	0.03	.979	0.01
Walk in Shoes	11.40	2.27	11.58	2.59	-0.22	.828	0.08

The analysis of Empathy and its subscales between males and females revealed no significant differences across the variables. However, there were a considerably low number of male participants (n = 10) compared to female participants (n = 121). This discrepancy in sample size can have implications for the statistical power of the t-tests conducted.

The low number of male participants may have limited the ability to detect significant differences between genders, even if such differences exist in the broader population. This lack of power means that the nonsignificant results should be interpreted with caution, as they may be due to the insufficient sample size rather than the absence of true differences.

Race

Table 11 presents the mean, standard deviation, and sample size for Empathy and its subscales (Perspective Taking, Compassionate Care, and Walk in Shoes) across different racial groups. The groups included are White, Black or African American, Hispanic or Latino, Asian, Multi-racial, and Other. Each racial group's scores are detailed for overall Empathy, Perspective Taking, Compassionate Care, and Walk in Shoes, highlighting the differences in means and standard deviations.

Table 11

Mean, Standard Deviation, and Sample Size for Empathy by Race

Combination	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
White	48	118.39	11.39	60.35	7.35	45.91	6.16	12.14	1.65
Black or African American	57	112.26	13.73	59.97	6.17	41.02	8.62	11.26	2.95
Hispanic or Latino	7	122.55	7.18	63.43	1.62	46.26	5.62	12.86	1.21
Asian	11	112.45	8.38	59.64	6.70	43.09	5.19	9.73	2.69
Multi-racial	6	119.33	9.54	62.33	4.32	45.17	6.24	11.83	3.92
Other	3	114.67	8.39	57.67	4.73	45.33	6.11	11.67	2.31

Given the sample sizes, meaningful comparisons were only conducted between White (n = 48) and Black or African American (n = 57) individuals, as the other groups had significantly smaller sample sizes, which would affect the reliability and validity of any statistical comparisons.

Two-tailed independent samples t-tests were conducted to examine whether the means of Empathy and its subscales were significantly different between White and Black or African American individuals. The results indicated a significant difference in Empathy scores between White (M = 118.39, SD = 11.39) and Black or African American (M = 112.26, SD = 13.73) individuals, $t(103) = 2.46$, $p = .015$, $d = 0.483$. For the Perspective Taking subscale, there was no significant difference between White (M = 60.45, SD = 7.35) and Black or African American (M = 60.00, SD = 6.17) individuals, $t(103) = 0.29$, $p = .773$, $d = 0.057$. In terms of Compassionate Care, a significant difference was found between White (M = 45.91, SD = 6.16) and Black or African American (M = 41.02, SD = 8.62) individuals, $t(103) = 3.28$, $p = .001$, $d = 0.643$. Lastly, the Walk in Shoes subscale approached significance, with White (M = 12.14, SD = 1.65) and Black or African American (M = 11.26, SD = 2.95) individuals, $t(103) = 1.83$, $p = .070$, d = 0.359 (Table 12). These results suggest that race significantly impacts certain aspects of

empathy, particularly overall Empathy and Compassionate Care, with White individuals scoring higher in these areas compared to Black or African American individuals.

Table 12

Two-Tailed Independent Samples t-Test for Empathy and Subscales by Ranking

Variable	White (n=48)		Black or African American (n=57)				
	M	*SD*	*M*	*SD*	*t*	*p*	d
Empathy	118.39	11.39	112.26	13.73	2.46	.015	0.483
Perspective Taking	60.45	7.35	60.00	6.17	0.29	.773	0.057
Compassionate Care	45.91	6.16	41.02	8.62	3.28	.001	0.643
Walk in Shoes	12.14	1.65	11.26	2.95	1.83	.070	0.359

An independent samples t-test was conducted to compare the mean years in the profession between White and Black or African American participants (Table 13). The results indicated no statistically significant difference in the mean years in the profession between White (M = 16.33, SD = 10.32) and Black or African American (M = 17.57, SD = 11.69) participants, $t(98) = -0.56$, $p = .580$, $d = 0.11$.

Table 13

Two-Tailed Independent Samples t-Test for Years of Experience by Race

White (n=55)		Black or African American (n=55)				
M	*SD*	*M*	*SD*	*t*	*p*	d
16.33	10.32	17.57	11.69	-0.56	98	0.580

Profession

A series of one-way ANOVAs were conducted to determine whether there were significant differences in Empathy and its subscales by Profession. The professions compared were Registered Nurse (RN), Licensed Practical Nurse (LPN), and Certified Nursing Assistant

(CNA). Table 14 presents the mean, standard deviation, and sample size for Empathy by profession.

Table 14

Mean, Standard Deviation, and Sample Size for Empathy by Profession

Combination	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Registered Nurse (RN)	69	116.81	10.26	59.60	6.11	45.42	6.24	11.78	2.28
Licensed Practical Nurse (LPN)	17	112.47	16.51	60.88	6.73	40.29	9.26	11.29	3.53
Certified Nursing (CNA)	29	112.99	13.08	60.18	6.50	41.70	7.52	11.11	2.71

The means and standard deviations are as follows: Registered Nurse (RN) (M = 116.81, SD = 10.26, n = 69), Licensed Practical Nurse (LPN) (M = 112.47, SD = 16.51, n = 17), and Certified Nursing Assistant (CNA) (M = 112.99, SD = 13.08, n = 29). The ANOVA results, based on an alpha value of .05, indicated no significant differences in Empathy among the different professions, $F(2, 112) = 1.53$, $p = .221$. The main effect of Profession was not significant, suggesting that the levels of Empathy were similar across the different professions.

An ANOVA was also conducted to examine whether there were significant differences in Perspective Taking by profession. The results showed no significant differences, $F(2, 112) = 0.31$, $p = .734$, indicating that Perspective Taking scores were similar among the different professions.

For the Compassionate Care subscale, the ANOVA results were significant, $F(2, 112) = 5.18$, $p = .007$, indicating that there were significant differences in Compassionate Care among the different professions. The eta squared was 0.08, indicating that Profession explains approximately 8% of the variance in Compassionate Care. The means and standard deviations are as follows: Registered Nurse (RN) (M = 45.42, SD = 6.24, n = 69), Licensed Practical Nurse (LPN) (M = 40.29, SD = 9.26, n = 17), and Certified Nursing Assistant (CNA) (M = 41.70, SD =

7.52, $n = 29$). Post-hoc analyses using the Tukey HSD p-value adjustment were conducted to further examine the differences among the professions. The results indicated that Registered Nurses (RNs) had significantly higher Compassionate Care scores compared to Licensed Practical Nurses (LPNs) ($p = .023$) and Certified Nursing Assistants (CNAs) ($p = .050$).

Finally, an ANOVA was conducted to determine whether there were significant differences in the Walk in Shoes subscale by profession. The results indicated no significant differences, $F(2, 112) = 0.76$, $p = .469$, suggesting that the Walk in Shoes scores were similar across the different professions.

In summary, the analyses revealed that while there were no significant differences in overall Empathy, Perspective Taking, and Walk in Shoes scores among the different professions, there were significant differences in Compassionate Care. Registered Nurses demonstrated higher levels of Compassionate Care compared to both Licensed Practical Nurses and Certified Nursing Assistants.

Hospital Comparisons

An analysis of variance (ANOVA) was conducted to determine whether there were significant differences in Empathy by Hospital. The ANOVA was examined based on an alpha value of .05. The results of the ANOVA were not significant, $F(3, 128) = 0.80$, $p = .496$, indicating the differences in Empathy among the levels of Hospitals were all similar. The main effect, Hospital was not significant, $F(3, 128) = 0.80$, $p = .496$, indicating there were no significant differences of Empathy by Hospital. The means and standard deviations are presented in Table 15.

Table 15

Mean, Standard Deviation, and Sample Size for Empathy by Hospital

Combination	*M*	*SD*	*n*
1	114.90	12.40	33
2	112.91	10.58	27
3	115.71	13.30	42
4	117.88	12.25	30

Employment Status

As, shown in Table 16, Full-time employees (M = 115.38, SD = 12.41) and part-time employees (M = 115.01, SD = 12.94) showed no significant difference in empathy scores, $t(124) = 0.152$, $p = .880$, $d = 0.029$.

Table 16

Two-Tailed Independent Samples t-Test for Empathy and Subscales by Employment Status

Variable	Full time (n=87)		Part time (n=39)				
	M	*SD*	*M*	*SD*	*t*	*p*	d
Empathy	115.38	12.41	115.01	12.94	0.152	.880	0.029
Perspective Taking	60.90	6.28	58.92	6.80	1.592	.114	0.307
Compassionate Care	42.93	7.76	44.63	7.07	-1.165	.246	0.225
Walk in Shoes	11.55	2.52	11.46	2.79	0.173	.863	0.033

Full-time employees (M = 60.90, SD = 6.28) had higher perspective-taking scores compared to part-time employees (M = 58.92, SD = 6.80). However, this difference was not statistically significant, $t(124) = 1.592$, $p = .114$, $d = 0.307$.

Full-time employees (M = 42.93, SD = 7.76) reported lower compassionate care scores than part-time employees (M = 44.63, SD = 7.07), though this difference was not significant, $t(124) = -1.165$, $p = .246$, $d = 0.225$.

The scores for the "walk in shoes" measure were similar for full-time (M = 11.55, SD = 2.52) and part-time employees (M = 11.46, SD = 2.79), with no significant difference found, $t(124) = 0.173$, $p = .863$, $d = 0.033$.

Research Questions

RQ1

Do acute rehabilitation hospitals in the United States rating greater than 8/10 utilizing a patient satisfaction survey similar to the HCAHPS global questions have a significantly higher component of empathy percentage seen with nursing staff (RN, LPN, and CNA / PCT staff) than the comparable acute rehabilitation hospitals in the United States rating less than 5/10 utilizing a patient satisfaction survey similar to the HCAHPS global questions, solely related to the "likelihood of recommending the hospital" category?

No statistical difference was found when comparing the percentage of a component of empathy seen with nursing staff between the lowest and highest rated hospitals explicitly relating to the "likelihood of recommending the hospital" category.

RQ2

To what extent do age demographics influence the components of empathy scores of acute rehabilitation hospital nurses?

Younger nurses (less than 30 years old) were found to have a significantly higher total empathy and component of empathy score (Perspective Taking) at an acute rehabilitation hospital compared to older nurses (30 years old or greater).

RQ3

To what extent do gender demographics influence the components of empathy scores of acute rehabilitation hospital nurses?

Nurses that are female were not found to score significantly higher in empathy than nurses that are male.

RQ4

To what extent do race demographics influence the empathy scores of acute rehabilitation hospital nurses?

Caucasians or Whites were found to have a significantly higher total empathy and Compassionate Care component of Empathy score at an acute rehabilitation hospital compared to Blacks or African Americans.

RQ5

To what extent do professional demographics influence the empathy scores of acute rehabilitation hospital nurses?

RN nursing staff at an acute rehabilitation hospital were found to have a significantly higher component of empathy (Compassionate Care) score at an acute rehabilitation hospital compared to non-RN nursing staff.

RQ6

To what extent do work status demographics influence the empathy scores of acute rehabilitation hospital nurses?

A higher percentage of full-time nursing staff at an acute rehabilitation hospital were not found to have a significantly higher component of empathy score at an acute rehabilitation hospital compared to non-fulltime nursing staff.

Chapter V

Discussion

This study explored empathy and its components within the nursing profession and examined how these qualities varied across demographics such as age, race, profession, employment status, and gender. Empathy was examined through its components: Perspective Taking, Compassionate Care, and Walking in Patient Shoes. The findings are compared to current research providing a broader insight into how demographic factors influence empathy levels within nursing staff.

As a healthcare provider, understanding this relationship is crucial for developing training programs that increase empathetic interactions in the clinical setting. The study found that although empathy and its components did not show significant differences between top patient satisfaction rated hospitals and bottom-ranked hospitals, demographic factors like age, profession, and race do. Younger nurses scored higher in empathy and perspective taking, while White participants scored higher in empathy and compassionate care. These findings suggest possible generational and cultural influences. These results emphasize the need for customized educational approaches that take these demographic differences into consideration, ensuring that all healthcare professionals can deliver empathetic care to a variety of patient populations. Furthermore, significant differences in Compassionate Care were observed among professions, with registered nurses exhibiting higher levels of Compassionate Care compared to licensed practical nurses and certified nursing assistants, suggesting a relationship between empathy and educational level.

The current findings propose that empathy, compassionate care, and perspective taking are influenced by demographic factors. The higher empathy scores among younger nurses may

demonstrate generational differences or relate to cognitive changes with aging. The study's results align with Sommerlad et al. (2021) and Beadle and De la Vega (2019), who also found age-related decline with cognitive empathy relating to perspective taking in older adults. Future empathy training programs should focus on age-specific interventions and cognitive skill improvement to address the challenges faced by different age groups, especially in maintaining perspective-taking abilities among older healthcare providers given these unified results.

Racial differences in empathy scores suggest potential cultural influences on empathic abilities. This study reveals statistically significant differences in empathy scores among racial groups, but the findings contradict some previous research. While limited in number, three earlier studies reported higher empathy scores among Black or African American medical students (Berg et al., 2015; Berg et al., 2011; Hojat et al., 2020). In contrast, the current study found higher empathy scores among White nursing staff. This discrepancy may be due to varying geographic locations of the studies. For example, Hojat et al. (2020) focused on students in the northeastern United States, while this study collected data from the southeastern region. The potential impact of geographic location on empathy scores warrants further investigation in future research to better understand these differences and their implications for healthcare practice and education.

Findings related to higher empathy scores in RNs coincide with Hojat et al. (2020) results finding higher empathy scores among students with varying academic backgrounds. This highlights the positive impact that educational level may have on specific aspects of empathy, particularly around Compassionate Care. This supports the need for further research to develop effective empathy training programs at both academic and post-didactic levels to positively

impact patient satisfaction. The current study enforces the importance of empathy training for CNAs and LPNs.

In relation to gender and employment status there were no statistically significant differences. Although, the small number of male participants (n = 10) compared to female participants affected the power to accurately examine the relationship. However, it is reasonable to assume that female participants in the study had higher empathy scores as research consistently and extensively shows that women seem to have higher empathy scores compared to men across various demographic groups, geographical locations, and among different healthcare professionals (Alcorta-Garza et al., 2005; Fjortoft et al., 2011; Hojat et al.,2020; Hojat & Gonnella, 2015; Hojat, 2016; Hojat et al., 2002; Hojat et al., 2001; Park et al., 2015).

There could be alternative explanations for the findings. The age-related empathy differences could be due to increased exposure to empathy training amongst younger nurses, burnout or variations in clinical experience. The racial differences may be due to differing racial discrimination exposure and cultural differences based on geographical location. Gender differences are prevalent in the literature and the lack of gender differences in this study may be due to the small sample size of male participants, limiting the ability to detect a difference.

The results of this study have significant clinical implications, suggesting that empathy training programs should be structured to address demographic differences. Customizing empathy training programs can provide equitable opportunities for all healthcare professionals to enhance their empathy skills, ultimately maximizing patient satisfaction and improving outcomes.

No research is without limitations and this study includes a predominantly female population and geographical range that may not be generalizable to all nursing populations. The

study's dependence on self-reported empathy may allow for bias. Another important finding to consider is that nurses over 30 had significantly more years of experience than those under 30 and the potential impact of nursing staff burnout cannot be ruled out. Further analysis of the relationship between years of experience, age and empathy scores is recommended before drawing conclusions.

Conclusion

The findings suggest that age and race significantly influence total empathy scores in nursing staff, as well as perspective taking and compassionate care, respectively. Professional status, gender, and employment status did not appear to have an impact on empathy scores in general, yet professional level did demonstrate statistically significant findings in relation to Compassionate Care. While demographic factors such as race, professional degree, and age may influence certain components of empathy, the overall relationship between empathy components and patient satisfaction ratings is complex.

Future research should explore the relationship between patient satisfaction ratings and specific nursing staff providing care across diverse nursing demographics, aligning patient responses closer with the individual giving the care. Advancing age and its influence on empathy should be explored further in nursing staff while at the same time excluding years in the profession and burnout as an influencing factor. Additionally, future research should focus on developing strategies to significantly improve cognitive empathy in healthcare providers and examining the outcome of these strategies on patient satisfaction ratings. Lastly, investigating the role of cultural competence and its relationship with empathy could provide insight into racial disparities. Inpatient rehabilitation hospitals under the same corporate leadership will continue to provide an optimal setting for conducting and evaluating these research recommendations.

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Appendix A

Patient Satisfaction Surveys

Encompass Health Inpatient Rehabilitation Hospital

Using any number from 0-10, **where 0 is the worst and 10 is the best**, what number would you use to rate this hospital during your stay with the following questions?

1. Overall rating of care you received during your stay?

Using any number from 0-10, **where 0 is the least likely and 10 is most likely**, what number would you use to rate this hospital during your stay with the following questions?

2. Likelihood of your recommending our facility to others?

HCAHPS Global Survey Questions

OVERALL RATING OF HOSPITAL

Please answer the following questions about your stay at the hospital named on the cover letter. Do not include any other hospital stays in your answers.

18. Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital during your stay?

- 0 ☐ 0 Worst hospital possible
- 1 ☐ 1
- 2 ☐ 2
- 3 ☐ 3
- 4 ☐ 4
- 5 ☐ 5
- 6 ☐ 6
- 7 ☐ 7
- 8 ☐ 8
- 9 ☐ 9
- 10 ☐ 10 Best hospital possible

19.

Would you recommend this hospital to your friends and family?

- 1 ☐ Definitely no
- 2 ☐ Probably no
- 3 ☐ Probably yes
- 4 ☐ Definitely yes

Appendix B

JEFFERSON SCALE OF EMPATHY HEALTH PROFESSION VERSION (JSE-HP)

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.....	○	○	○	○	○	○	○
2. My patients feel better when I understand their feelings.	○	○	○	○	○	○	○
3. It is difficult for me to view things from my patients' perspectives.....	○	○	○	○	○	○	○

*Allowed Sample parameters with *Copyright**

Appendix C

Demographic Questionnaire

Demographic Questionnaire

Demographics

1. What is your age in years? _____
2. What is your gender?
   - Male
   - __Female
   - __Other: _____
   - Prefer not to answer
3. Which one of these groups would you say best represents your race?
   - __White
   - Black or African American
   - __Hispanic or Latino
   - __American Indian or Alaska Native
   - Asian
   - __Pacific Islander
   - __Multi-racial
   - Other:
4. Are you currently employed as a licensed practical nurse LPN, registered nurse RN, certified nursing assistant CNA or patient care technician PCT?
   - Yes (if yes, please skip to question 6)
   - __ No (if no, please answer question 5)
5. What is your profession? _____
6. Years practicing in your profession? _____
7. Please mark your employment status.
   - Hospital employee full-time
   - __ Hospital employee part-time
   - __ Hospital employee PRN / Per Diem / Pool
   - Contract / travel employee full-time
   - __ Contract / travel employee part-time
   - __ Other _____
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