The Relationship of Hospital CEO Gender and the Patient Experience: The Role of the Mediating Effects of Hospital Characteristics

Lanean M. Lang
laneanlang@gmail.com

Recommended Citation

This dissertation, directed and approved by the candidate's committee, has been accepted by the College of Graduate and Professional Studies of Abilene Christian University in partial fulfillment of the requirements for the degree

Doctor of Education in Organizational Leadership

Nannette W. Glenn, Ph.D.
_____
Dr. Nannette Glenn, Dean of
the College of Graduate and
Professional Studies

Date: 11/26/2021

Dissertation Committee:

_____
Dr. Cecilia Hegamin-Younger, Chair

Jaime Goff
_____
Dr. Jaime Goff
Katherine Yeager
_____
Dr. Katherine Yeager

Abilene Christian University

School of Educational Leadership

The Relationship of Hospital CEO Gender and the

Patient Experience: The Role of the Mediating Effects of Hospital Characteristics

A dissertation submitted in partial satisfaction

of the requirements for the degree of

Doctor of Education in Organizational Leadership

by

Lanean M. Lang

December 2021

Dedication

I dedicate my dissertation to my daughter Kara and grandson Adrian, my parents Mark

and Ann Lang, and best friend Stacie F., for your support and patience. Love you all!

Acknowledgments

I would like to thank the faculty at Abilene Christian University and specifically my committee Dr. Cecilia Hegamin-Younger, Chair; Dr. Jaime Goff; and Dr. Katherine Yeager. Further, the many family members and friends that have inspired and believed in me to reach this point in my academic career.

Abstract

In this quantitative study, I investigated CEO gender and the patient experience in acute care hospitals in Texas for 2019. As the patient-experience has been the metric for quality patient care and hospital reimbursements, hospital CEOs play an important role in promoting positive patient experience as they lead the organization in strategic goals. The study is relevant as a shortage of experienced and qualified healthcare leaders is expected as baby-boomers retire. The lack of women leaders remains a challenging issue. The purpose of the study was to assess the gender differences of the CEO on the impact of patient experience scores in Texas acute care hospitals and examine the role of hospital characteristics on the patient experience in relation to CEO gender. The sample consisted of 211 hospitals that reported HCAHPS patient survey results to the Center of Medicare and Medicaid Services for 2019. Using a series of *t* tests and regression models, eight patient experience scores, CEO gender, and hospital characteristics—hospital ownership, hospital location, teaching status, and size, this study examined the relationship between patient experience scores and CEO gender, the relationship between hospital characteristics and CEO gender, and the effect of hospital characteristics on hospital CEO gender and the patient experience. The framework supports the occupational challenges women face at the executive level, specifically the CEO role. The analysis indicated CEO gender was not directly significantly associated with the patient experience. Hospital characteristics except for hospital size were not significantly associated with patient experience. The hospital size and the interaction term (product of gender and hospital size) was a significant predictor of the patient experience. Based on the results of the interaction term, the study concluded that female CEOs were associated with higher patient experience scores in larger hospitals.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

Hospital leadership drives the patients' perception of quality care. Leadership develops, communicates, and executes goals to improve the quality of care in healthcare organizations (Ayeleke et al., 2018). Ayeleke et al. (2018) recognized effective leadership as crucial in motivating and supporting hospital staff to meet the expectations of increased transparency and accountability in the healthcare industry. When the staff feels supported and valued, patient experiences are affected by the delivery of safe, effective, and high-quality health care (Ayeleke et al., 2018; Owens et al., 2017). When clinicians and employees are highly committed to the organization's goals and values, they are motivated to work towards the organization's success such as improving the patient experience (Kruskal & Sarwar, 2019), and the patient experience is positively associated with quality of care and outcome measures (Siegrist, 2013). Thus, it is crucial the employees have an effective leader in transforming patient care that emphasizes positive patient experiences for improved quality care (Ayeleke et al., 2018).

Transformation of the patient experience requires a vision that involves adapting, leading to changes in leadership, strategy, operations, and culture (Galstian et al., 2018; Kruskal & Sarwar, 2019; Manary et al., 2015). Leadership style drives the changes in strategy, operations, and culture. Galstian et al. (2018) found that leadership styles differ between female and male CEOs. Specifically, the leadership styles of women led to better patient experiences. Therefore, it is expected that an equal number of women and men in hospital leadership roles. However, gender diversity in healthcare has been limited in leadership roles.

While the number of women in leadership roles has increased, the health care industry remains dominated by men (Herrin, Harris, et al., 2018; Lantz, 2008; Sexton et al., 2014). Gender diversity in healthcare continues to lag behind other industries (Galstian et al., 2018;

Herrin, Harris, et al., 2018). Without regard to research that has shown diversity promotes innovation, equity, and effective problem-solving that benefits the organization (Glass & Cook, 2018; Javadi et al., 2016; McDonald et al., 2018). The benefits of gender diversity may contribute to new insights and ideas addressing the current challenges in healthcare, such as improving the quality of care and patient experiences (Galstian et al., 2018), as well as the expected shortage of healthcare professionals (Ayeleke et al., 2018). Additionally, evidence has shown improving the quality of care and the patient experiences extend health equity to include marginalized patients such as those of lower-income, racial and ethnic minorities, and seniors (Sommers et al., 2017). Although the Affordable Care Act (ACA) of 2010 has narrowed the gap between income and racial and ethnic disparities, studies indicated health care equity has yet to be attained (Herrin, Harris, et al., 2018; Sommers et al., 2017). As male domination remains the culture, studies have found that diversity in hospital leadership is valued and important for achieving clinical excellence and health equity (Herrin, Harris, et al., 2018; Sexton et al., 2014; Sommers et al., 2017).

Challenges in healthcare, such as improving health equity for all and controlling hospital care costs, led to reforming health care, which introduced the 2010 ACA. A component of health care reform established the patient experience as one of the main components to quality care (Agency for Healthcare Research and Quality, 2016). The significance of the patient experience has been positively associated with clinical effectiveness, patient safety, and improved clinical and business outcomes, which further supported the case for the patient experience as an integral component of quality care (Siegrist, 2013). Currently, the patient experience is an indicator of quality health care by evaluating hospital performance. Such an indicator can prevent the misuse

and overuse of services and identify disparities in the care of patients (Agency for Healthcare Research and Quality, 2016).

Further, certain hospital characteristics may modify the patient experience negatively, shifting the goal of quality care (Silvera & Clark, 2021). However, the gender of the CEO may explain why and under what circumstance hospitals characteristics may alter the patient experience (Silvera & Clark, 2021). As healthcare changes to meet the current challenges, understanding conditions is of critical importance to building a patient-centered health care system (Silvera & Clark, 2021).

Background of the Problem

Although the number of women in healthcare has been increasing over the last 40 years, women are underrepresented in senior leadership positions compared to men (Galstian et al., 2018). Proportionally, women occupy or consider advancing to a Chief Executive Officer (CEO) position less than men (Galstian et al., 2018). Barriers preventing career advancement are the lack of mentoring and leadership development opportunities (Hauser, 2014; Sexton et al., 2014). Even though there are barriers to advancement, the leadership styles of women positively impact performance outcomes, and organizational change has been seen in Fortune 500 companies as well as the health care industry (Galstian et al., 2018; Glass & Cook, 2018). Glass and Cook (2018) examined CEOs at Fortune 500 companies. They found a positive association with women CEOs and performance outcomes. The study revealed that the differences in leadership styles of women involve practices of community giving and improved equity for vulnerable groups, which promote positive changes in organizations. Although the ACA has narrowed the equity of care gap by providing greater access to healthcare benefits, studies indicated the quality

of care ratings was lower for vulnerable groups such as minorities, the elderly, and veterans (Herrin, Harris, et al., 2018; Sommers et al., 2017).

Literature regarding the gender characteristic related to the patient experience is limited to two studies. Galstian et al.'s (2018) study of 249 in California hospitals revealed that the CEO characteristic of gender was associated with significantly higher overall patient experience scores as measured in the Hospital Consumer Assessment of Healthcare Providers and Systems' (HCAHPS). The authors reiterated that women had been described as transformational leaders that demonstrate behaviors of collaboration, building trust, transparency, and compassion. The authors further suggested such behaviors may help promote more patient-centered cultures that positively influence patient experience scores (Galstian et al., 2018).

Hospital Leadership

Hospital leaders have a significant role in the success of cost, quality, and care initiatives. However, it is the CEO who has the responsibility of overseeing and maintaining the overall health and effectiveness of the hospital. The responsibilities of the CEO include creating the hospital culture that is patient-centered, improving patient experiences, and ensuring the organization performs efficiently. Employees then have the resources needed to deliver the highest quality patient care (Manary et al., 2015). The CEO also serves as one of the executive influencers that promote a culture of quality care. This culture of quality care reflects the CEO's policies and priorities and is evident in the attitudes and behaviors of the employees. Hence, the CEO sets the tone concerning a culture of quality care that rests solely with top leadership (Herrin, Harris, et al., 2018). The commitment to improve patient quality care will likely require substantial changes that transform the patient experience and will require substantial changes in hospital leadership, culture, and strategy to support positive patient experiences (Manary et al.,

2015). Therefore, leadership styles, as seen with gender differences, may influence the change that is needed to transform the patient experience that improves clinical and business outcomes.

Diversity in Leadership

In a review of literature by Fine et al. (2020), gender diversity in leadership is positively associated with firm innovation, occupational well-being (mental health, stress-levels, and safety), and greater social responsibility and equity policies. However, achieving diversity continues to lag, only 16% of the executive teams reflect the gender diversity of the U.S. labor force (Sim, 2015). A similar percentage is seen in healthcare when looking at gender diversity in healthcare leadership. According to Chisholm-Burns et al. (2017), women occupied 18% of CEO positions in hospitals alongside a more recent estimate of 20% (Silvera & Clark, 2021).

Hospital leadership plays a vital role in promoting strategic goals, executing change, and maintaining a culture that promotes positive patient experiences. However, when considering the diversity of leadership, women remain underrepresented in the highest levels of healthcare positions, indicating gender bias remains a challenge (Chisholm-Burns et al., 2017; Hauser, 2014). Diversity in healthcare leadership continues to be of debate as solutions are sought to eliminate healthcare disparities (Bass et al., 2019). Given that women make up about 75% of the workforce in healthcare, few women are considered as a resource for healthcare leadership roles (Silvera & Clark, 2021). Alternately, Livingston (2018) asserted that the hospital's highest-level executives and boards remain predominantly white and male (nine percent of CEOs are minorities). Evidence is seen in Glass and Cook's (2018) study consisted of Fortune 500 companies revealing leadership under the female gender as positively associated with a variety of business and equity practices. Dezso and Ross (2012) argued that female representation in leadership positions brings social diversity, enriches the behaviors of others throughout the

organization, and motivates other women. Additionally, the study conducted by Galstian et al. (2018) revealed that hospitals led by female CEOs were associated with significantly higher patient experience scores.

Over time gendered roles have shown to be flexible; however, women have shown more communal traits than men and with little change in agentic traits (Eagly et al., 2019). Eagly et al. (2019) also suggested that women have gained competence due to educational attainments diminishing men's advantage and prestige. The increase in competence and positive business outcomes challenges the perception of women as a lower status group (Eagly et al., 2019). Increasing diversity in leadership would increase the pool of competent individuals seeking leadership positions.

Statement of the Problem

Although women make up the majority of employees in the hospital, there is insufficient representation in hospital leadership roles (Javadi et al., 2016; McDonald et al., 2018; Sexton et al., 2014). Only 18% of hospital chief executive officers (CEOs) are women (Bureau of Labor Statistics, 2019). Little has changed over the last few decades (Hauser, 2014; Hill et al., 2015; Sexton et al., 2014). As a shortage of experienced and qualified healthcare leaders is expected as baby-boomers retire, the lack of women leaders remains a challenging issue (Hauser, 2014).

Qualified leaders are needed to positively manage change and respond to the shortages in healthcare, while meeting the community's health needs (Public Health Infrastructure, 2014). However, women are often overlooked for leadership positions (Glass & Cook, 2018; Lantz, 2008). Research has also shown that women leaders promote positive changes in their organization and make a significant impact on patient experiences (Glass & Cook, 2018).

In healthcare, CEOs have been associated with influencing improved clinical care, positive clinical outcomes, and lower hospital operational costs (Galstian et al., 2018; Manary et al., 2015; Sarto & Veronesi, 2016). Only a small number of CEOs are women despite women occupying the majority of the health care labor force (Bureau of Labor Statistics, 2019; Silvera & Clark, 2021).

The intent of this study was to examine differences in patient experiences when hospitals are led by women CEOs in Texas, extending the current literature on the influence of women in hospitals in the CEO role. The practical implications of this study are twofold: (1) to promote grooming and promoting women to CEO positions filling the leadership pipeline; and (2) to encourage diversifying leadership that represent the communities they serve and therefore making decisions that improve the quality of care patients receive.

Purpose of the Study

The purpose of this quantitative retrospective study was to examine whether women CEOs impact patient experience scores in acute care hospitals within Texas. Specifically, the aims of this study are:

- To assess the gender differences of the CEO on the impact of patient experience scores in Texas acute care hospitals.
- To examine the role of the mediating variables with gender.
- To explore the contribution of gender and inherent traits on patient experience.

Research Questions

RQ1. What is the relationship between patient experience scores and the gender of the CEO?

RQ2. What is the relationship between hospital characteristics and CEO gender?

RQ3. After controlling for hospital characteristics, is there a difference in the gender of the hospital CEO and the patient experience scores?

Definition of Key Terms

Acute care hospital. Hospital that provides short-term treatment for a severe injury or illness, urgent care, and recovery.

Affordable Care Act (ACA). Sommers et al. (2017) identified the ACA as the United States healthcare system expansion to reduce health disparities.

Centers for Medicare and Medicaid (CMS). CMS is an agency within the Department of Health and Human Services that manages Medicare, Medicaid, Children's Health Insurance Program, Health Insurance Portability and Accountability Act standards, and quality standards of healthcare facilities (Centers for Medicare and Medicaid, 2017).

Gender equity. According to Javadi et al. (2016), gender equity is the act of fairness to women and men by promoting strategies that counter the historical and social disadvantages. Strategies that lead to a more equitable distribution of resources that pushes social development forward and improves the quality of life (Javadi et al., 2016). Further, the 2020 Global Gender Gap Report (2019) measures gender equity as political empowerment, education attainment, health and survival, and economic participation and opportunity.

Hospital characteristics. Hospital characteristics refers to the size, location, ownership, teaching status, and system affiliation of the hospital.

Hospital Consumer Assessment of Healthcare Providers Systems (HCAHPS). HCAHPS is the national standardized survey that publicly reports the patient's perspective of their hospital care (Centers for Medicare and Medicaid, 2017). Higher patient experience scores are associated with higher clinical care, positive clinical outcomes, and lower hospital

operational costs (Betts & Balan-Cohen, 2017). Manary et al. (2015) emphasized that research increasingly views the patient experiences as being fundamental to increasing the value of health care. Measuring the patient experience has three goals: (a) to support consumer choice, (b) to incentivize hospitals to improve care quality, and (c) to enhance transparency, leading to increased accountability (Herrin, Mockaitis, et al., 2018). Thus, hospitals are financially motivated to increase and maintain high patient experience scores.

Summary

Although women have made career gains in the workforce, the number of women in leadership roles has marginally grown over the last few decades (Labor of Statistics, 2019; Sexton et al., 2014; Silvera & Clark, 2021). Women make up a large percentage of employees in healthcare, yet barriers remain that limit the number of women in executive positions. CEOs in the executive position are viewed as the top leader that influence the direction of the organization (Herrin, Harris, et al., 2018). However, women are provided fewer opportunities to make an impact at this level (Hauser, 2014; Herrin, Harris, et al., 2018). Despite knowledge of potential barriers, gender diversity remains a challenge in U.S. hospitals (Hauser, 2014). For this reason, future studies are essential to continue to relay the potential impact of leadership gender in a healthcare setting. As healthcare continues to evolve, strategies to advance health equity is valued to achieve clinical excellence (Herrin, Harris, et al., 2018).

Chapter 2: Literature Review

The purpose of this chapter is to provide an overview of the literature that pertains to this study. This literature review provides a review of the core topics and relevant literature in the areas of gender, gendered roles and traits, gender gap, gender influence, and patient experience scores.

The following section is a critical review of the key bodies of the literature that are important to this research. The components of this review include the following key sections: the social role theory, inherent traits, leadership approach, and the conceptual framework discussion. A summary of the literature will conclude this chapter.

Theoretical Framework

Social Role Theory

The social role theory provides a framework to help understand the complexity of the gender of hospital leadership. The social role theory demonstrates how gendered attitudes and behavior influence expected norms in society. Subsequently, the norms continue and become a part of organizational culture, shaping the gender make-up in hospitals. This section describes the gendered expectations and the emergence of gender differences in organizational leadership and communication.

Eagly and Wood (1999) proposed that the social role theory defines the division of labor by gender leading to shared expected gender roles in society. Consequently, gender stereotypes developed as women and men performed different roles. Roles originated from the biological differences between women's ability to bear children and men's strength. The physical attributes also indicated that certain activities were more efficiently accomplished by one sex (Eagly & Wood, 1999). As women were left to raise children, men networked and utilized resources to

gain power. As a result, women developed communal traits and men agentic traits. Women were expected to be friendly, unselfish, and concerned for others; therefore, occupying roles relating to the care of others, whereas men are expected to be competitive, independent, and dominant, traits considered best suited for leadership roles (Eagly & Wood, 1999). These expectations indirectly developed a gender gap or sex differences in social settings (Eagly & Wood, 1999). Women acquired a subordinate status and considered not as qualified to occupy leadership positions (Eagly & Johnson, 1990). Today, patriarchy remains partially in place, maintaining the status quo (Wood & Eagly, 2002). Male privilege is incorporated into organizational practices hampering the opportunities for women to move into roles of position and influence (Wood & Eagly, 2002). However, women tend to have greater relational traits than men, demonstrating engaged and empathetic interactions with others. The differences in traits between the genders have shown to influence leadership styles (Eagly & Carli, 2003). Women are prone to behave and communicate in a matter that is future-oriented that strengthens organizations by inspiring commitment and innovation (Eagly & Carli, 2003).

Although the division of labor has declined as fewer careers require physical strength and women had advanced in education, social norms continue to categorize careers as communal and agentic. The categorizing of careers continues to perpetuate the push into gendered roles, as seen in education and healthcare. Women occupy roles as teachers and nurses, where a higher number of men occupy positions of administrators and executives. The social role theory explains the phenomenon of systemic bias that maintains the separation between women and men in the labor market.

Gender

Given the importance of gender equity in the organizations, the following section will critically explore the concept of gender. This section begins with a window into the historical origins of gender inequality, the concept of gender differences, and the relevance of gender stereotypes in the workplace. It is relevant to understand the history of gender inequality as the barriers continue to exist for women, especially in leadership roles. Stereotypes are the main culprit slowing progress in closing the gender gap and reinforcing the status quo in organizations. The following section will discuss gender inequality.

Gender Inequality. Gender inequality in leadership is a global issue, as the number of opportunities is limited to the female gender. Although, there has been a shift of women into many male-dominated occupations in the late 20th century, gendered-norms challenge the attitudes developed as children. As children, beliefs are instilled and reinforced at home and in society on what is considered acceptable behavior. As adults, the same beliefs carry into organizations, as seen in Abraham's (2020) research study. Abraham (2020) studied records from 2,310 members within 37 network groups to determine whether gender bias occurs when a decision-maker is concerned about how their selection may be perceived. Since gender is status-related, men have a higher status as being better performers (Abraham, 2020). This study included collecting, coding, and analyzing archived data from 2007 to 2011, and interviews and observations from 2011 to 2013. A negative binomial regression was used to predict total exchanges by exchange type and gender composition of occupation, Abraham found women received fewer exchanges in accessing resources in male-typed (primarily male-dominated) occupations.

Hence, male traits such as assertive, competitive, analytical, and independent have been considered the norm or appear as a natural fit for business practices and the organization (Abraham, 2020). Alternately, women do not fit the perceived expectations or have violated the role expectations (Abraham, 2020). Men are viewed as more competent and authoritative, whereas women are viewed as less competent when in male-typed roles (Abraham, 2020). The results suggest that women and men are not perceived as equals with men holding the status of being more skilled or qualified. Therefore, women in the same occupation or position as their male counterparts are not perceived as competent or skilled and continue to face barriers of social stereotypes. The commonality of Abraham's (2020) study and the hospital's executive composition results in a male-dominated environment as men are perceived as more competent. As women challenge the social norms of hospital leadership roles, women encounter inequality barriers. The following section will now discuss gender differences and the gender gap.

Gender Differences and the Gender Gap

Social role theory is defined as a process of forming gender roles in which each gender is expected to possess specific characteristics that prepare them for sex-typical tasks (Eagly & Wood, 1999). The concern with these assigned tasks is the barriers that have resulted as women have deviated from what was considered as appropriate tasks suited for the female gender. More women have joined the workforce and have advanced in their careers. However, as seen in the study by Badura et al. (2018), a discrepancy in opportunities exists that reinforces the norm of men in higher-levels of status and positions. Badura et al. (2018) conducted a meta-analysis study that examined whether the gender gap in leadership roles had diminished over time and the mechanisms that explain why men have attained higher status roles over women. Starting from the social role theory, Badura et al. (2018) explained that different roles are expected between

men and women and each gender is best suited for specific tasks. However, perceptions of roles may have changed as a greater number of women have occupied management positions. To address whether the gender gap had diminished, Badura et al. (2018) considered three mechanisms through which the gender gap in leadership persists. The three mechanisms are: (a) traits of agency (e.g., assertiveness and dominance), (b) communal (e.g., kindness and nurturance), and (c) and participatory behavior in group discussions. The findings of the study indicated:

- The gender gap in leadership emergence decreased over time.

- Agentic traits had a positive relationship with participation.

- 3a. Communal traits were not related to participation.

- 3b. Agentic traits had a stronger positive association with participation in group discussions than did communal traits.

- There is a positive association between participatory behavior and leadership emergence. For the moderating analysis:

- The gender gap was stronger in lab settings.

- 6b. The gender gap was weaker in classroom settings.

- Gender egalitarianism did not moderate the gender–leader emergence association.

- The gender gap in leader emergence did not shrink significantly as interaction time increased.

- There was a smaller gap observed when the task had a high level of social complexity (tasks that require a high degree of communal behaviors).

There is a strong relationship between the amount an individual participates in group discussions and emerging as a leader (Badura et al., 2018). The results suggested that men

continue to emerge as leaders more often than women; however, the gender gap in leadership has

diminished over time. The researchers continued to suggest that agentic traits, communal traits,

and participatory behavior depending on the context, explain the gender gap. As such, employers

should be aware of the natural tendency toward agentic traits compared to communal traits

(Badura et al., 2018). Gender differences were also significant for moderating factors relating to

study setting, publication date, and length of interaction time. This study examined the

complexity of how individuals emerge as leaders. Based on the findings, agentic traits remain the

preference or perceived acceptable behavior in leadership roles. Favorably, the gender gap has

shrunk according to this study, but stereotypes persist. While considering the hospital executive

environment in the context of Badura et al.'s (2018) study, agentic traits are favorable toward

leadership emergence. Hiring practices should account for the natural tendency to value agentic

traits over communal traits to continue to reduce the gender gap seen in the CEO selection.

However, communal traits are perceived as less valuable than agentic traits, and women are less

likely to emerge as hospital CEOs than men. Having discussed differences in gender, gender

stereotypes will now follow in the next section.

Gender Stereotypes

Like Badura et al.'s (2018) study on the gender gap, Eagly et al. (2019) conducted a meta-

analysis ($N = 30,093$ adults) on 16 national polls that examined the public opinion relating to the

distribution of traits between the sexes. Over a seven-decade period (1946–2018), the polls

inquired about communal, agentic, and competency traits between women and men. Given the

changes in the demographics of the workforce, gender stereotypes should have changed (Eagly et

al., 2019). More women have left domestic duties for education and have pursued careers in

various fields. Over time the opposing attitudes surrounding the increasing presence of women in

the workforce have adjusted as women sought advanced education. As seen in Eagly et al.'s (2019) study, education, along with presence, has modified the acceptance and perception of women in the workforce. However, with the acceptance of women into the workforce, stereotypes linger, revealing the true attitudes of society. In their study, the poll traits were classified into three categories: (a) 13 communal traits (e.g., ability to handle people well, affectionate, and compassionate); (b) 17 agentic traits (e.g., ability to make decisions, aggressive, and ambitious); and (c) 10 competent traits (e.g., creative, innovative, and intelligent). Following the categorizing of the traits, the primary outcome variable was a percentage calculated using the number of respondents that correlates each trait more to women than men. The mean percentages of communal and competence were more true for women, and agency was more true for men. Using regression analysis to view traits over time, communal showed a significant increase over time. Alternately, agency showed no significant direction. Competence also showed a significant increase. However, the direction of competence over time reversed suggesting female competence increased over time. The study indicated an increase in communal traits and competency, but not in agency possibly indicates the systemic gender biases. Eagly et al.'s (2019) study explained as women are more communal they are perceived as more competent as jobs become increasingly requiring social skills. In the hospital environment, patient experiences have a social element when building a patient-centered system. The communal traits of the CEO is an essential aspect of developing relationships with staff that influence positive patient experiences. The following section discusses the conceptual framework.

Conceptual Framework

Inherent Traits

Male and female organizational leaders, even those who occupy the same positions, may differ in their leadership style, where the emphasis on specific behaviors shape the culture and goals of the organization (Galstian et al., 2018). Women possess characteristics that are typically communal or relational and may use these traits in their leadership roles. Although relational behavior has not been the expected style of leadership, it may be beneficial in industries that rely on establishing connections for effective outcomes. As observed in Galstian et al.'s (2018) study, relational behaviors of the CEO may positively impact the organization's efforts to improve the patient experience. This conceptual framework describes how gender may influence the patient experience.

Occupational Challenges

The limited numbers of female leaders are not due to a lack of interest by women or to women's inability to lead effectively (Carli & Eagly, 2016). Instead, stereotypes continue to act as barriers that challenge the intentions of advancing the female career that men do not encounter, as seen in Carli and Eagly's (2016) research study. Carli and Eagly (2016) conducted a 78 article meta-analysis of global leaders. They explored the common metaphors of women leadership, as well as the strengths and weaknesses of characterizing women's current situation as leaders. The articles used in this study referred to global women leaders in Parliament, the United States, Canada, and U.K. Supreme Courts and politics. The authors collected the status of the leader and sought research on the power of metaphors. As metaphors have the ability to shape perception and alter attitudes and behaviors (Carli & Eagly, 2016). The three metaphors discussed in detail are the following with its description:

Glass Ceiling. The most popular metaphor describing the lack of access to leadership roles is the glass ceiling. The ceiling suggests few women face barriers before reaching the executive level only to discover further advancement is blocked. Seemingly, the barriers are invisible and undetectable, allowing fewer opportunities for women (Carli & Eagly, 2016). Meanwhile, the status of women changes little by limiting the number of women to follow (Carli & Eagly, 2016).

Sticky Floor. The sticky floor metaphor characterizes obstacles that women face earlier in their careers. The metaphor mostly relates to women in lower-paying or entry-level jobs that fail to advance (Carli & Eagly, 2016). The metaphor also relates to discriminatory practices, either slowing advancement or the absence of opportunity (Carli & Eagly, 2016). Unlike the glass ceiling with a barrier that diminishes advancement at a certain point, the sticky floor has the greatest potential to move past barriers (Carli & Eagly, 2016).

Labyrinth. A labyrinth is a metaphor suggesting advancement is difficult but not impossible for women. Some paths lead nowhere where another path is proven successful. The focus is not on the obstacles that deter women late in their career, but the challenges faced throughout their career until they reach their goal. More women receive opportunities to reach high positions, but the walls of the labyrinth challenge future women that follow (Carli & Eagly, 2016). The labyrinth is more challenging to navigate with its hills and valleys, requiring more time to advance their leadership career, in comparison to the road that men travel (Carli & Eagly, 2016). Some women will meet setbacks and dead ends where others will succeed after persevering through setbacks.

The exploration of the articles identified: (a) advancement is difficult but not impossible, (b) as women advance walls persist but have eased the path, and (c) slow improvement to access

leadership positions. The perception is that white male leaders are more effective than women, and stereotypes reinforce men as successful leaders (Carli & Eagly, 2016).

The analysis of the literature included the percentages of female occupancy in leader roles from 2005 to 2015 and considered which metaphor best represented the advancement of women. The results are as follows:

- Women held 22% of seats in national parliaments in 2015, which is 50% more than the previous decade. As of 2019, the percentage increased to 24.3% (UNWomen, 2019).

- Women in government roles in the United States have increased from 19% to 27%. As of 2019, the percentage increased to 30.8% (Inter-Parliamentary Union [IPU], 2019).

- Women in government roles from Europe have increased from 19% to 26%. As of 2019, the percentage increased to 29.4% (IPU, 2019).

- Women in government roles form Africa increased from 17% to 22%. As of 2019, the percentage increased to 24.0% (IPU, 2019).

- Women in government roles form Asia increased from 15% to 19%. As of 2019, the percentage increased to 19.7% (IPU, 2019).

- Canada has the highest representation of women of 46%, holding public sector positions.

- For the European Union, 34% of the justices for the supreme courts are women.

- Women held 21% of directorships on the Financial Times Stock Exchange 100 (FTSE 100).

- Women held 16% of directorships on the Financial Times Stock Exchange 250 (FTSE 250).

- In the U.S., women held 19% of board positions in the Fortune 500 (FTSE 250).

- In the U.S., 26% of CEOs are women, 5% for Fortune 500 companies (FTSE 250).

- In the U.S., 56% of CEOs of philanthropic organizations are occupied by women (FTSE 250).

Based on the three themes and results of the analysis, the authors suggested the labyrinth as the metaphor to describe the current leadership situation. As women continue to have growing access to leadership and the path of the following women have eased, women continue to reach leadership goals less easily than men (Carli & Eagly, 2016). The labyrinth indicates that women continue to advance over time, decreasing the gender gap. The existing stereotypes continue to challenge the movement toward gender equity in leadership roles, but the labyrinth metaphor will continue to reveal the persisting barriers as well. Carli and Eagly's (2016) study shares what is evident in hospital leadership. Although women occupy a smaller percentage of CEO roles, access to leadership roles is improving. The current conditions reveal there are complex barriers that maintain the status quo in the hospital structure. The status quo is reinforced by gender stereotypes that men are better suited for the CEO position as women reach the same level less easily than men. In the next section, women's approach to leadership will be discussed.

Leadership Approach

As mentioned earlier, previous work has expressed leadership styles reflecting agentic norms associated with the male gender role and communal or relational norms associated with the female gender role (Badura et al., 2018; Eagly et al., 2019). As a result, women leaders will likely differ in leadership style. These studies have indicated that employees respond positively with relational styles of leadership more so than agentic styles of leadership. Relational leaders set high standards, innovate, and establish themselves as role models while gaining the trust and confidence of their employees.

Glass and Cook's (2018) study explored whether women promote positive changes within organizations. Rather than focus on short-term goals of financial performance, Glass and Cook (2018) considered the impact women have on nonfinancial performance initiatives such as equity, corporate transparency, and supplier diversity. The study consisted of two datasets. The first data set was composed of all the CEOs and board of directors for Fortune 500 companies between 2001 and 2010. If the CEO also served on the board, the CEO received the count and no count for board members. The second data set was composed of annual data on corporate initiatives pertaining to governance, product strength, community, and diversity issues of the Fortune 500 companies. The sample size consisted of 4,295 CEOs and 4,235 board members.

The authors addressed three questions: (a) whether women CEOs positively impact business and equity practices, (b) whether female CEOs will be associated with positive business and equity practices when multiple or influential women serve on the board, and (c) whether male CEOs will be associate with positive business and equity practices when multiple or influential women serve on the board. Glass and Cook concluded that CEO gender is positively related to diversity strength. The negative binomial regression indicated the interactions between the CEO and the percentage of women on the board were found to be significant for corporate governance, product strengths, diversity strengths, and marginally significant for community strengths. As the number of women on the board increased, both corporate governance and product strengths decreased. For community and diversity strengths, women CEOs scored high, but scores remained relatively constant no matter the percentage of women on the board. However, as the number of influential board members (belonging to the board of another) increased, corporate governance increased for female CEOs.

For the final question, findings indicated as the number of women on the board increased, scores for corporate governance, community, and diversity strengths increased for male CEOs. For product strength, the scores remained relatively constant regardless of the number of women on the board. This study indicated that gender diversity promotes corporate governance, diversity, and community initiatives in organizations. However, the results are conditional, depending on the presence of influential women and the percentage of women on the board. Subsequently, the results of the study presume a similar performance of increased community and diversity strengths with women CEOs in hospitals. Women CEO's inclination toward relationship building and awareness contributes to employees that are committed to providing quality patient care. Sequentially, hospitals would witness positive experience scores from their discharged patients. In the next section, relational leadership will be discussed.

Relational Leadership

A communal or relational approach to leadership motivates employees to develop their full potential when encouraged and inspired to be more engaged, innovative, and collaborative compared to hierarchical and transactional types of leadership. Relational leadership may be a practical approach to leadership roles for patient-centered goals (Galstian et al., 2018; Silvera & Clark, 2021).

Glass and Cook (2018) shared that women bring different perspectives and priorities to leadership roles that contribute to organizational diversity and a commitment to developing and maintaining interpersonal relationships. Thus, organizations accepting of relational behaviors from their leadership promotes a communal culture, equity, collaboration, and a shared vision (Glass & Cook, 2018).

Galstian et al. (2018) emphasized the impact women have on patient experiences in healthcare. Silvera and Clark (2021) also conducted another study that examined why and under what circumstances CEO gender to be influential in the patient experience. For this study, a total of 5,471 patient encounters from 391 U.S. hospitals. HCAHPS data from 2007 to 2011 were studied to address whether hospitals led by female CEOs performed better with respect to the patient's perception of their care. Three questions that were addressed: (a) whether hospitals led by female CEOs will perform better with respect to patient's perspective of their care, (b) whether population density will influence the relationship between female hospital CEOs and patient experience, and (c) whether hospital size will influence the relationship between female hospital CEOs and the patient experience. The independent variables are CEO gender (female = 1, male = 0), population (division = at least 2.5 million people, metro = between 50,000 and 2.5 million, and micro = between 10,000 and 50,000), and beds represent the total number of beds in the hospital. The authors use population and size to capture the potential complexity of the hospital environment. The dependent variables are HCAHPS' percent scores for the "top-box" items: (a) physician communication, (b) nurse communication, (c) provider response, (d) pain management, and (e) communication about medications. To address the questions, the analysis involved ordinary least squares regression on gender and the patient experience while controlling for CEO characteristics (e.g., age, tenure, and education) and hospital characteristics (e.g., teaching intensity, Medicare and Medicaid patient percentage, and teaching ratio). The results provided a negative, not significant score for the relationship between CEO gender and the patient experience.

Yet, the size of the hospital positively influenced the relationship between the CEO gender and the patient experience. For hospitals in an area of least 2.5 million people, female

CEOs were associated with higher scores. Alternately, hospitals in populations between 50,000 and 2.5 million and hospitals in populations between 10,000 and 50,000 indicated a lower performance. Similar results were seen with the hospital size. Female CEOs had higher patient experience scores with larger hospitals than with smaller hospitals. Given the results, there was no statistically meaningful relationship between CEO gender and patient experience. However, the study suggested that female CEOs have higher patient experience scores in the largest cities and larger hospitals. These results may indicate that women's relational leadership approach may be the most influential in the most complex environments where large hospitals are in the densest population areas. Hospital characteristics contribute to the dynamics of performance. Specifically, the contributing factors of size and location have been seen to influence female CEO performance in more complex environments. The following section discusses the rationale for the conceptual framework.

Conceptual Framework Discussion

The framework is based on the limited number of women that occupy the CEO position in hospitals. The framework is grounded in two arguments. The first argument is that female CEOs are more likely to address and improve the patient experience because of their innate relational approach to leadership. A relational approach is needed for patient-centered care. Second, hospital characteristics affect the complexity of the organization as CEOs navigate to create environments that promote positive patient experiences.

Summary

There is significant literature on gender inequality in the workplace, but gaps exist when examining patient experience scores relating to the gender of CEOs in acute care hospitals. The potential impact of gender is relevant as the patient population becomes increasingly more

diverse, with gaps in health equity. Studies by Galstian et al. (2018) and Silvera and Clark (2021) indicated the female gender has a significant relationship with the patient experience. Additional studies have indicated women, on average, possess relational traits, have more education than men, and occupy most of the healthcare positions, yet persisting stereotypes continue to act as barriers to CEO positions and other executive positions in healthcare.

Further, hospital characteristics increase the complexity of the organization, and contribute to the dynamics of performance, impacting the patient experience. Specifically, the contributing factors of size and location have been seen to influence female CEO performance in more complex environments. Given the complex environment, relational leadership may encourage more patient-centered cultures that support positive patient experiences, as seen in the previous studies. The next chapter describes the proposed methods to address the research questions.

Chapter 3 focuses on the quantitative methodology of the study. The study will use a cross-sectional approach to determine the potential relationship between gender and transformational leadership on patient experience scores. A quantitative approach will compare the variables to reveal potential relationships.

Chapter 3: Research Design and Methodology

Purpose

The purpose of the study attempted to examine the effects of CEO gender on the patient experience. This study will help to determine whether female CEOs have a positive impact on the patient's perception of quality care.

Research Design

A quantitative archival research design was used to analyze a secondary data set from the Centers of Medicare and Medicaid HCAHPS' patient experience survey. Quantitative research methods were selected based on the data analysis strengths associated with the ability to use a collection of data to identify potential relationships between and across variables using statistical procedures (Creswell, 2009). The archival research design was selected based on the availability of data in an existing database that is accessible on the government website Hospital Compare.

Population and Sample

The population for this study consisted of 565 acute care hospitals in Texas for the calendar year 2019 (Texas Department of State Health Services, 2017). Of these, 240 (43%) reported patient survey results to the Center of Medicare and Medicaid Services' reporting program were represented in this study. All Texas acute care hospitals reporting for calendar year 2019 were expected to be included in this study.

Data Variables, Measurements, and Instruments

To examine gender differences in patient experiences, a secondary data set was obtained from Medicare's website- Hospital Compare, the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) for 2018 and 2019. Another data set was created based on information from Hospital Compare, hospital websites, the American Hospital Directory, and

local media outlets to extract patient experience information, the gender of the CEOs, and hospital characteristics. The data set consists of information that is available to the public.

Patient Experience

Patient experience is measured using the HCAHPS. The HCAHPS was established in 2006 in response to promoting health equity by means of safe and effective care over quantity health care. The purpose of HCAHPS is to promote quality care and transparency for all healthcare facilities receiving federal funding. The questionnaire is designed to (a) produce data about patients' perspectives of care that allow meaningful comparisons of hospitals on topics that are important to consumers, (b) create new incentives for hospitals to improve quality of care, and (c) accountability in health care by increasing transparency of the quality of hospital care provided in return for the public investment (Centers for Medicare and Medicaid, 2017). The data are derived from a standardized questionnaire and survey methodology. The purpose of the HCAHPS is to measure patients' experiences at U.S. hospitals (Herrin, Mockaitis, et al., 2018). It is composed of 29 questions about a patient's recent visit measuring 10 dimensions of their hospital experience (see Appendix A); (1) communication with nurses, (2) communication with doctors, (3) responsiveness of hospital staff, (4) cleanliness of room and bathroom, (5) quietness of the hospital environment, (6) communication about medicines, (7) understanding of care, (8) discharge information, (9) rating of the hospital, and (10) recommend the hospital. This study used 8 of the 10 domains. The last two domains, "Rating of the hospital" and "Would they recommend the hospital," were not used in this study as it is related to the overall rating of the hospital. The study focused on the individual topics of the patient's care and examined the relationship with gender.

The following provides the list of questions grouped into the domain it measures:

Communication With Nurses. Communication with nurses measures how well nurses communicate with the patient using four items, which are listed below. The patient is asked to rate each item on a four-point scale: (1) Always, (2) Usually, (3) Sometimes, and (4) Never. The variable communication with nurses is a total score and is calculated by averaging the percentage of patients responding Always. The total score ranges from 0 to 100%.

During this hospital stay, how often did nurses treat you with courtesy and respect?

During this hospital stay, how often did nurses listen carefully to you?

During this hospital stay, how often did nurses explain things in a way you could understand?

During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted it?

Communication With Physicians. Communication with physicians measures how well physicians communicate with the patient using three items, which are listed below. The patient is asked to rate each item on a four-point scale: (1) Always, (2) Usually, (3) Sometimes, and (4) Never. The variable communication with physicians is a total score and is calculated by averaging the percentage of patients responding Always. The total score ranges from 0 to 100%.

During this hospital stay, how often did doctors treat you with courtesy and respect?

During this hospital stay, how often did doctors listen carefully to you?

During this hospital stay, how often did doctors explain things in a way you could understand?

Responsiveness of Staff. Responsiveness of Staff measures how responsive hospital staff is to the patient's needs using two items. If No was the response for question 8, then the respondent was directed to question 12. Only patients responding Yes were directed to Question

9. For question 9, the patient is asked to rate each item on a four-point scale: (1) Always, (2) Usually, (3) Sometimes, and (4) Never. The variable responsiveness of staff is a total score and is calculated using the percentage of patients responding Always. The total score ranges from 0 to 100%.

During this hospital stay, did you need help from nurses or other hospital staff in getting to the bathroom or in using a bedpan?

How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted?

Cleanliness. Cleanliness measures the cleanliness of the patient's room using one item, which is listed below. The patient is asked to rate each item on a four-point scale: (1) Always, (2) Usually, (3) Sometimes, and (4) Never. The variable cleanliness is a total score and is calculated using the percentage of patients responding Always. The total score ranges from 0 to 100%.

During this hospital stay, how often were your room and bathroom kept clean?

Quietness. Quietness measures the quietness of the patient's room using one item, which is listed below. The patient is asked to rate each item on a four-point scale: (1) Always, (2) Usually, (3) Sometimes, and (4) Never. The variable quietness is a total score and is calculated using the percentage of patients responding Always. The total score ranges from 0 to 100%.

During this hospital stay, how often was the area around your room quiet at night?

Communication About Medicines. Communication about medicines measures how well the staff communicates with the patient about new medication using three items. The response options for question 12 are: (1) Yes or (2) No. If No was the response, then the respondent was directed to question 15. For questions 13 and 14, the patient was asked to rate each item on a four-point scale: (1) Always, (2) Usually, (3) Sometimes, and (4) Never. Only

patients responding Yes were included. The variable communication about medicines is a total score and is calculated by averaging the percentage of patients responding Always. The total score ranges from 0 to 100%.

During this hospital stay, were you given any medicine that you had not taken before?

Before giving you any new medicine, how often did hospital staff tell you what the medicine was for?

Before giving you any new medicine, how often did hospital staff describe possible side effects in a way you could understand?

Discharge Information. Discharge information measures whether key information was provided at discharge using three items. For question 15, the patient is asked to respond from three options: (1) own home, (2) someone else's home, and (3) another health facility. For questions 16 and 17, the patient is asked to rate each item on a four-point scale if they did not go to another facility: (1) Always, (2) Usually, (3) Sometimes, and (4) Never. Only patients responding that did not go to another facility will be included. The variable discharge information is a total score of those that did not go to another facility. The total score is calculated by averaging the percentage of patients responding Always. The total score ranges from 0 to 100%.

After you left the hospital, did you go directly to your own home, to someone else's home, or to another health facility?

During this hospital stay, did doctors, nurses or other hospital staff talk with you about whether you would have the help you needed when you left the hospital?

During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?

Understanding of Care. Understanding of care measures how well patients understand the type of care they need after leaving the hospital using three items, which are listed below. The patient is asked to rate each item on a four-point scale: (1) Strongly Agree, (2) Agree, (3) Disagree, and (4) Strongly Disagree. The variable understanding care is a total score and is calculated by averaging the percentage of patients responding Always. The total score ranges from 0 to 100%.

During this hospital stay, the staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left.

When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.

When I left the hospital, I clearly understood the purpose for taking each of my medications.

Patience experience scores for 8 of the domains (a) communication with nurses, (b) communication with doctors, (c) responsiveness of hospital staff, (d) cleanliness of room and bathroom, (e) Quietness of the hospital environment, (f) communication about medicines, (g) understanding of care, and (h) discharge information, were calculated by calculating percentage of the hospital's patients that answered "Always," "Strongly Agree," and "Yes." Each domain score ranges from zero to 100%.

Extraction of Data From Hospital Websites

Since we looked at whether the gender of hospital CEOs had an impact on patient experience, HCAHPS scores of Texas acute care hospitals and CEO gender were extracted from HospitalCompare.com, hospital websites, and LinkedIn. The CEO gender for this study used the binary definition of sex. If unable to determine gender based on name, picture, or media

coverage, the CEO and related hospital were excluded from the study. Hospitals with fewer than 100 surveys were also excluded from the study.

Independent Variable

CEO gender: 1 = female

0 = male

Mediating Variables: Hospital Characteristics

1. Hospital ownership: 1 = For-profit

0 = Not for-profit

2. Hospital location: 1 = Urban

0 = Rural

3. Teaching status: 1 = Teaching

0 = Nonteaching

4. Size: Number of beds

5. System affiliation - Hospital is a member or not a member of a multihospital system:

1 = Member of multisystem

0 = Independent

Procedures

To examine CEO gender differences, the HCAHPS data from Medicare and Medicaid's Hospital Compare website was merged with CEO gender and hospital characteristics extracted from hospital websites and American Hospital Directory (AHD.com) then recorded in an Excel document.

Data Analysis Plan

Research Question 1: What is the Relationship Between Patient Experience Scores and the

Gender of the CEO?

RQ1a: Physician communication

H0$_1$: $\mu_{md\ communication\ f} = \mu_{md\ communication\ m}$

H1$_1$: $\mu_{md\ communication\ f} \neq \mu_{md\ communication\ m}$

RQ1b: Nurse communication

H0$_1$: $\mu_{rn\ communication\ f} = \mu_{rn\ communication\ m}$

H1$_1$: $\mu_{rn\ communication\ f} \neq \mu_{rn\ communication\ m}$

RQ1c: Responsiveness

H0$_1$: $\mu_{responsiveness\ f} = \mu_{responsiveness\ m}$

H1$_1$: $\mu_{responsiveness\ f} \neq \mu_{responsiveness\ m}$

RQ1d: Cleanliness

H0$_1$: $\mu_{cleanliness\ f} = \mu_{cleanliness\ m}$

H1$_1$: $\mu_{cleanliness\ f} \neq \mu_{cleanliness\ m}$

RQ1e: Quietness

H0$_1$: $\mu_{quietness\ f} = \mu_{quietness\ m}$

H1$_1$: $\mu_{quietness\ f} \neq \mu_{quietness\ m}$

RQ1f: Medication

H0$_1$: $\mu_{medication\ f} = \mu_{medication\ m}$

H1$_1$: $\mu_{medication\ f} \neq \mu_{medication\ m}$

RQ1g: Understanding

H0$_1$: $\mu_{understanding\ f} = \mu_{understanding\ m}$

H1$_1$: $\mu_{understanding\ f} \neq \mu_{understanding\ m}$

RQ1h: Discharge

H0$_1$: $\mu_{discharge\ f} = \mu_{discharge\ m}$

H1$_1$: $\mu_{discharge\ f} \neq \mu_{discharge\ m}$

A *t* test was used to determine a statistical significance (p < .05) between gender and the eight dimensions related to the patient experience.

Research Question 2: What is the Relationship Between Hospital Characteristics and CEO Gender?

RQ2a: Hospital ownership

H0$_a$: $P_{ownership\ f} = P_{ownership\ m}$

H1$_a$: $P_{ownership\ f} \neq P_{ownership\ m}$

RQ2b: Hospital location

H0$_b$: $P_{location\ f} = P_{location\ m}$

H1$_b$: $P_{location\ f} \neq P_{location\ m}$

RQ2c: Teaching status

H0$_c$: $P_{status\ f} = P_{status\ m}$

H1$_c$: $P_{status\ f} \neq P_{status\ m}$

RQ2d: Hospital affiliation

H0$_d$: $P_{affiliation\ f} = P_{affiliation\ m}$

H1$_d$: $P_{affiliation\ f} \neq P_{affiliation\ m}$

RQ2e: Hospital size

H0$_e$: $\mu_{size\ f} = \mu_{size\ m}$

$$H1_e: \mu_{size\ f} \neq \mu_{size\ m}$$

A chi-square was used to determine whether there was a relationship between female CEOs and the hospital characteristics for Hospital ownership, Hospital location, and Teaching status. A *t* test was conducted for hospital characteristic Size.

Research Question 3: After Controlling for Hospital Characteristics is There a Difference in the Gender of the Hospital CEO and the Patient Experience Scores?

The main objective of this study was test whether there was a significant difference between CEO gender and the patient experience scores. Ordinary least squares regressions was used to analyze relationships between CEO gender and patient experience while controlling for the hospital characteristics. The analysis identified whether the CEO gender creates an additional variance beyond the mediating variables. Analysis included measuring the effect of the independent variables (gender and hospital characteristics) on the dependent variable (patient experience).

Ethical Considerations

An application for "Exempt" was submitted to the Institutional Review Board since the proposed study was a nonhuman research. The original identifying data from the surveys were removed prior to the website's access to the public. The Hospital Compare website is federally funded and a public service to benefit all.

Records were analyzed in a manner that maintains survey participants' anonymity. Although the survey is not anonymous, hospitals are responsible for ensuring the confidentiality of patients responding to the survey (HcahpsOnline.org, 2018). The extracted data from the Hospital Compare website did not contain identifying information. In case of any issues with the extracted data, I consulted with the business manager at the facility and the business manager

would assign someone at the institution to investigate the issue. The results of the study maintained the anonymity of the survey participants as name and any identifying information of the client/patient was unknown to me and the findings were reported only in the aggregate.

Assumptions

For the preliminary analysis, assumptions of normality examined the variables to avoid bias in the results. Analyzing the skewness and kurtosis determined whether the distribution is normal. Levene's tests were used to determine if the statistical inferences of *t* tests and regression may be compromised by violation of the assumption of homogeneity of variance.

Limitations

Given that the data were from secondary sources, there could be issues with data quality and accuracy. CMS relies on facilities to notify of discrepancies to maintain the integrity of the data (HCAHPSonline.org, 2018). Second, the data did not capture subjective themes from the hospital CEOs. Subjective experience from hospital CEOs may reveal challenges or constraints to influence hospital performance. Third, the study did not assess other CEO characteristics that may influence patient experience.

Delimitations

The boundaries of this study included data over two years for Texas acute care hospitals. Also, this study was limited to gender diversity, whereas other types of diversity may positively influence hospital outcomes.

Summary

The purpose of the study was to determine whether there is a relationship between hospital CEO gender and the patient experience. Medicare's HCAHPS survey results established the degree of relationship from the data. The extracted data were analyzed using Pearson's

correlation to measure the relationship between gender and the eight patient experiences. Chapter 1 provided the background demonstrating that few women occupy CEO positions in healthcare. Chapter 2 presented a review of the literature related to the social role theory, gender gap, common leadership styles of women, and diversity in leadership. Chapter 3 described the methods and procedures to gather and analyze data from Medicare's website. Chapter 4 provides a detailed account of the results based on the data collected and analyzed.

Chapter 4: Results

This study assessed the differences of the CEO's gender on the patient experience scores. The purpose of the study examined whether female CEOs impact patient experience scores in acute care hospitals within Texas. The results are presented in six sections. The first section describes the screening of the data. The second section summarizes the hospital characteristics. The next three sections present the statistical evidence to address each of the three research questions. The final two sections present a supplemental analysis, a summary of the findings, followed by a discussion of the limitations.

Sample

Data were extracted from Medicare's website, Hospital Compare, the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). There was a total of 212 acute care hospitals in Texas. Prior to the analysis, the database was checked for missing values. The size of one hospital (Medical City Fort Worth) was missing and therefore this hospital was excluded from the analysis. A total of 211 hospitals were included in the analysis.

Hospital Characteristics

Hospital characteristics may influence the patient experience. Table 1 summarizes the hospital characteristics for this study. Few hospitals had female CEOs (18.5%). Approximately half (51.7%) of the hospital ownership was nonprofit. The majority of hospitals (93.8%) were located in urban areas. Nearly all were teaching hospitals (96.7%). The most frequent hospital affiliation was system (92.9%).

Table 1

*Hospital Characteristics (*n = *211)*

Characteristic	*n* (%)
Gender of CEO	
Female	39 (18.5)
Male	172 (81.5)
Hospital ownership	
Nonprofit	109 (51.7)
Profit	102 (48.3)
Hospital location	
Rural	13 (6.2)
Urban	198 (93.8)
Teaching status	
Nonteaching	7 (3.3)
Teaching	204 (96.7)
Hospital affiliation	
Independent	15 (7.1)
System	196 (92.9)

Patient Experiences

This section presents the evidence to examine the CEO gender differences in patient experience scores. Table 2 present the results of the independent sample t tests to compare the average patient experience scores between male and female CEOs. There was no statistically significant difference between male and female CEOs average Nurse Communication score (p = 0.32). On average, female CEOs had a mean score of 79.31 (SD = 5.04) and a male mean CEO score of 80.12 (SD = 4.47). These averages indicated that the difference in CEO gender did not impact the patient experience.

Table 2

Comparison of Patient Experience Scores Between Male and Female CEOs

Patient experiences	Gender of CEO	*n*	*M* (*SD*)	*t*	*p* value
Nurse Communication	Male	172	80.12 (4.47)	0.99	.32
	Female	39	79.31 (5.04)		
Physician Communication	Male	172	80.83 (4.27)	.01	1.00
	Female	39	80.82 (4.88)		
Responsiveness	Male	172	67.87 (7.68)	-1.08	.28
	Female	39	69.36 (8.45)		
Medication	Male	172	65.60 (5.41)	-0.19	.85
	Female	39	65.79 (6.39)		
Discharge	Male	172	86.43 (4.08)	0.21	.83
	Female	39	86.28 (3.41)		
Understanding	Male	172	53.71 (6.28)	0.75	.45
	Female	39	52.85 (7.38)		
Cleanliness	Male	172	75.92 (5.73)	0.15	.88
	Female	39	75.77 (6.17)		
Quietness	Male	172	66.44 (7.71)	-1.01	.31
	Female	39	67.87 (9.09)		
Average patient experience	Male	172	72.11 (4.92)	-0.16	.87
	Female	39	72.26 (5.54)		

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .001 level of significance.

There was no statistically significant difference between male and female CEOs average Physician Communication ($p = 1.00$). On average, female CEOs had a mean score of 80.82 (*SD* = 4.88) and a male mean CEO score of 80.83 (*SD* = 4.27). There was no statistically significant difference between male and female CEOs average Responsiveness ($p = .28$). On average, female CEOs had a mean score of 69.36 (*SD* = 8.45) and a male mean CEO score of 67.87(*SD* = 7.68).

There was no statistically significant difference between male and female CEOs average Medication ($p = .85$). On average, female CEOs had a mean score of 69.36 (*SD* = 8.45) and a male mean CEO score of 67.87(*SD* = 7.68). There was no statistically significant difference between male and female CEOs average Discharge ($p = 0.83$). On average, female CEOs had a mean score of 86.28 (*SD* = 3.41)) and a male mean CEO score of 86.43 (*SD* = 4.08).

There was no statistically significant difference between male and female CEOs average Understanding ($p = .45$). On average, female CEOs had a mean score of 52.85 (*SD* = 7.38) and a male mean CEO score of 53.71 (*SD* = 6.28). There was no statistically significant difference between male and female CEOs average Cleanliness ($p = .88$). On average, female CEOs had a mean score of 75.77 (*SD* = 6.17) and a male mean CEO score of 75.92 (*SD* = 5.73). Finally, there was no statistically significant difference between male and female CEOs average Quietness ($p = .88$). On average, female CEOs had a mean score of 67.87 (*SD* = 9.09) and a male mean CEO score of 66.44 (*SD* = 7.71).

Differences in Hospital Characteristics

The characteristics of the hospitals were examined to assess gender differences. This section examined the relationship between hospital characteristics and CEO gender. Table 3 presents the results of independent sample *t* tests comparing the hospital size between male and

female CEOs. The differences between male and female CEOs for hospital size was statistically significant ($p = .02$). The average hospital sizes were significantly greater among the male CEOs than among the female CEOs. Pertaining to the 39 hospitals occupied by female CEOs, the average hospital size was 138.08 ($SD =130.59$). Alternately, the average hospital size for male CEOs was 211.87 ($SD =218.92$) for 172 hospitals.

Table 3

Comparison of Hospital Size Between Male and Female CEOs

	Gender of CEO	n	Mean *(SD)*	t	p value
Hospital size (6 - 1536 beds)	Male	172	211.87 (218.92)	2.02	.02*
	Female	39	138.08 (130.59)		

Notes. * indicates statistically significant at the .05 level of significance.

      ** indicates statistically significant at the .001 level of significance.

Table 4 presents the comparison between the genders of the CEOs and the hospital characteristics. The statistical comparison indicated one significant difference emerged between hospital ownership and CEO gender ($p = .004$). The majority of female CEOs (69%) work at for-profit hospitals, whereas the majority of male CEOs (54%) work at nonprofit hospitals ($X^2= 8.16, p = .004$). There were no significant differences in hospital location, teaching status, and hospital affiliation. However, the tests indicated the majority of both female (95%) and male (97%) CEOs work in urban hospitals ($X^2 = 0.08, p = .77$). All of the female CEOs (100%) and nearly all male CEOs (99%) work at teaching hospitals ($X^2 = 1.63, p = .20$). Both female (92%) and male (96%) CEOs predominately work at system-affiliated hospitals ($X^2 = 0.03, p = .87$).

Table 4

Comparison of Hospital Characteristics

Hospital characteristic	Female	Male		
	N (%)	N (%)	X^2	*p* value
Hospital Ownership				
Profit	27 (69)	75 (46)	8.16	.004*
Nonprofit	12 (31)	97 (54)		
Hospital Location				
Urban	37 (95)	161 (97)	0.08	.77
Rural	2 (5)	11 (3)		
Teaching Status				
Teaching	39 (100)	165 (99)	1.63	.20
Not Teaching	0 (0)	7 (1)		
Hospital Affiliation				
System	36 (92)	160 (96)	0.03	.87
Independent	3 (8)	12 (4)		

Notes. * indicates statistically significant at the .05 level of significance

** indicates statistically significant at the .01 level of significance.

Controlling for Hospital Characteristics

This section examines the difference in the CEO gender while controlling for hospital characteristics. Table 5 presents the ANOVA results of the average patient experience. Table 6 presents the multiple linear regression analysis for the data collected for the year.

Patient Experience

Patient experience, which is a measure of the eight dimensions, is a combination of Communication of nurses, Communication with Physicians, Responsive of staff, Communication about medicines, Discharge information, Understanding of care, Cleanliness, and Quietness. The assumptions were evaluated, skewness and kurtosis were within the expected normal limits (±

2.0 for skewness and ±3 for kurtosis) indicating that the distributions were approximately normal (skewness = 0.69, kurtosis = -0.17; Table B1). The statistical inferences of the regression model were not compromised by violation of the assumption of homogeneity of variance (F [1, 209 = 1.49], p = 0.22; Table B2). The p value > .01 indicated that the variances were consistently equal between the male and female participants for the dependent variable. Additionally, the graphical representation of the distributed residual from the predicted scores were normally distributed (Figure C1).

Table 5 provides the results of the ANOVA Summary of patient experiences while controlling for hospital characteristics. Overall, the model was statistically significant (F [7, 203] = 8.31, p < .05). Controlling for hospital characteristics, CEO gender predicts average patient experience as shown by the ANOVA table. The R^2 for the overall model was 22.3% with SE = 4.51 with an adjusted R^2 of 19.6%. The R^2 is a small standard error for this regression model and suggests that gender has a small effect on the average patient experience. The variance suggests this may not be the best model to account for the predictor variable (Gender of the CEO) and controlling variables (i.e., hospital size, hospital ownership, hospital location, teaching status, and hospital affiliation).

Table 5

Summary of Patient Experience

Average patient experience	df	F	p value	R^2	SE
Regression	7	8.31	< .001	.20	4.51
Residual	203				

Notes. * indicates statistically significant at the .05 level of significance

** indicates statistically significant at the .01 level of significance.

Table 6 presents the multiple linear regression models using the data collected with the average patient experience as the dependent variable. The independent and controlling variables were assumed not to be multicollinear (VIF < 10; Table B3).

Table 6

Multiple Linear Regression Model Using the Data Collected to Predict Average Patient Experience

Independent variables	b	SE	t	p
Gender of CEO	1.52	1.17	1.30	.20
Hospital size	-.01	.002	-5.25	$< .001**$
Gender*Hospital Size	-0.02	0.01	-2.69	.01 *
Hospital ownership	0.60	0.66	0.90	.37
Hospital location	-0.55	1.35	-0.41	.69
Teaching status	-0.08	1.75	-0.05	.96
Hospital affiliation	-2.22	1.24	-1.79	.07

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .01 level of significance.

The model Adjusted R^2 = .171.

The interpretation of the positive coefficient (b = 1.52) is that when the CEO gender was coded by one (female), the average patient experience score was greater if the CEO gender was female compared to when the CEO gender was coded by 0 (male). The analysis implies the average patient experience (i.e., combination of Communication with nurses, Communication with physicians, Responsiveness of staff, Communication about medicines, Discharge information, Understanding of care, Cleanliness, and Quietness) was more positive for female CEOs in larger hospitals than for male CEOS in larger hospitals. The negative correlation is strongest when the CEO gender is female. Meaning the correlation suggests a more positive

patient experience for female CEOs in larger hospitals and a more negative patient experience

for male CEOs in larger hospitals. The impact of this effect is illustrated in Figure 1. The slopes

of the linear regression lines defining the relationship between Hospital size and Average patient

experience are steeper when the CEO is female compared to when the CEO is male.

Figure 1

Effects of CEO Gender on Hospital Size
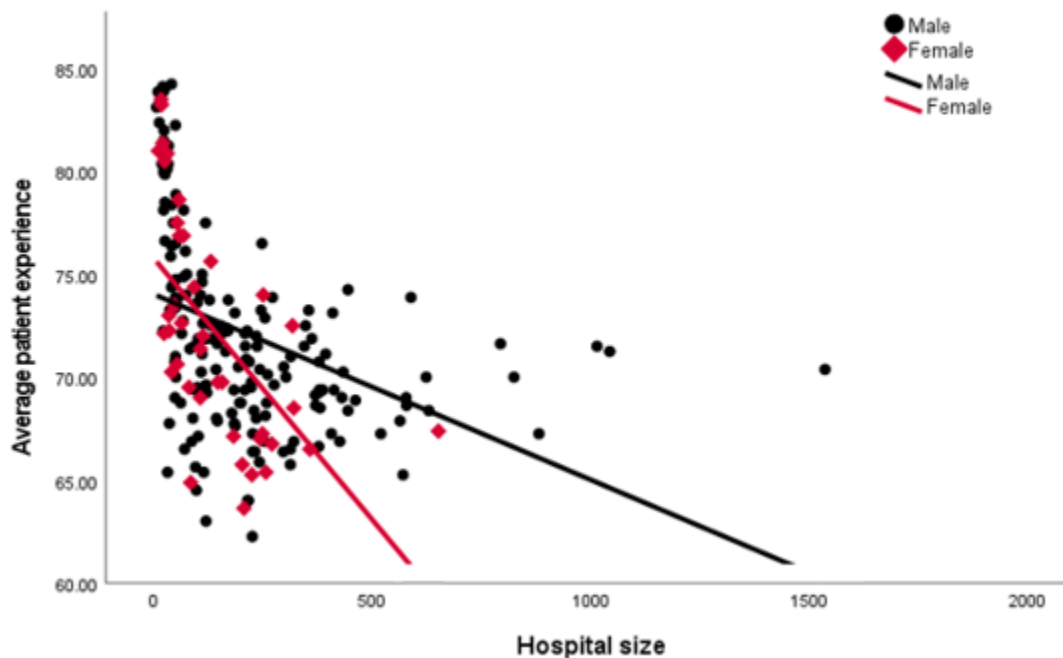
There were no statistically significant predictors of the average patient experience. After

controlling for the hospital characteristics and the average patient experience, there is no

difference in CEO gender, however, the interaction term (CEO gender * Hospital size) implied

that gender has an effect on the relationship between hospital size and average patient

experience.

Communication With Nurses

This section presents the analysis of the patient experience Communication with nurses. The assumptions of the regression model were tested. The skewness and kurtosis statistics were within the expected normal limits ($\pm$ 2.0 for skewness and $\pm$3 for kurtosis) indicating that the distributions were approximately normal (skewness = 0.42, kurtosis = -0.18; Table B1). The statistical inferences of the regression model were not compromised by violation of the assumption of homogeneity of variance ($F_{(1, 209)}$ = 2.36, p = .13; Table B2). The p value > .01 indicated that the variances were consistently equal between the male and female participants for the dependent variable. Additionally, the graphical representation of the distributed residual from the predicted scores were normally distributed (Figure C3).

Table 7 provides the results of the ANOVA of Communication with nurses while controlling for hospital characteristics. Overall, the model was statistically significant ($F_{(6,204)}$ = 6.18, p < .001). Controlling for hospital characteristics, CEO predicts Nurse Communication as shown by the ANOVA table. The R^2 for the overall model was 15.4% (SE = 4.27) with an adjusted R^2 of 12.9%. Both R^2 and standard error are small for this regression model indicating not a good fit. The values for R^2 suggests that gender has a small effect on the communication with nurses. A small size effect is reported by the model, of variation in Communication with nurses is accounted by the predictor variable (Gender of the CEO) and controlling variables (i.e., Hospital size, Hospital ownership, Hospital location, Teaching status, and Hospital affiliation). The standard error indicates little variance in the measure of gender and communication with nurses.

Table 7

ANOVA of Communication With Nurses

Communication with nurses	df	F	p value	R^2	SE
Regression	6	6.18	< .001	0.13	4.27
Residual	204				

Notes. * indicates statistically significant at the .05 level of significance

** indicates statistically significant at the .01 level of significance.

Table 8 presents the multiple linear regression model using the data collected with

Communication with Nurses as the dependent variable. One control variable was statistically

significant ($p < .05$) predictor of Communication with Nurses that is Hospital size ($p < .001$).

The Gender of CEO was not a statistically significant predictor. The independent and controlling

variables were assumed not to be multicollinear (VIF < 10; Table B3).

Table 8

Multiple Linear Regression Model Using the Data Collected to Predict Communication With

Nurses

Independent variables	b	SE	t	p
Gender of CEO	-1.39	0.78	-1.78	.08
Hospital size	-0.01	0.00	-5.35	< .001**
Hospital ownership	0.01	0.63	0.01	.99
Hospital location	-1.27	1.28	-0.99	.32
Teaching status	0.13	1.66	0.08	.94
Hospital affiliation	-1.31	1.17	-1.12	.27

Notes. * indicates statistically significant at the .05 level of significance

** indicates statistically significant at the .01 level of significance

The model adjusted $R^2 = 0.13$.

The quality of Communication with Nurses was predicted to be lower in larger hospitals and better in smaller hospitals. The *p* values greater than .05 indicated that the independent variable (Gender of CEO) and controlling variables (i.e., Hospital ownership, Hospital location, Teaching status, and Hospital affiliation) were not statistically significant predictors of the dependent variable. After controlling for the hospital characteristics and nurse communication, there is no difference in gender.

Communication With Physicians

This section presents the analysis of the patient experience Communication with physicians. The assumptions of the regression model were tested. The skewness and kurtosis statistics were within the expected normal limits (± 2.0 for skewness and ± 3 for kurtosis) indicating that the distributions were approximately normal (skewness = 0.48, kurtosis = -0.45; Table B1). The statistical inferences of the regression model were not compromised by violation of the assumption of homogeneity of variance ($F_{(1, 209)} = 1.91$, $p = .17$; Table B2). The *p* value > .01 indicated that the variances were consistently equal between the male and female participants for the dependent variable. Additionally, the graphical representation of the distributed residual from the predicted scores were normally distributed (Figure C4).

Table 9 provides the results of the ANOVA of Communication with physicians while controlling for hospital characteristics. The model as a whole was statistically significant to predict Communication with physicians ($F_{(6, 204)} = 7.66$, $p < .001$) as shown by the ANOVA table. The R^2 for the overall model was 18.4% (SE = 4.02) with an adjusted R^2 of 16.0%. Both R^2 and standard error are small for this regression model indicating not a good fit. The values for R^2 suggests that gender has a small effect on communication with physicians. A small size effect is reported by the model, of variation in communication with physicians is accounted by the

predictor variable (Gender of the CEO) and controlling variables (i.e., Hospital size, Hospital ownership, Hospital location, Teaching status, and Hospital affiliation). The standard error indicates little variance in the measure of gender and communication with physicians.

Table 9

ANOVA of Communication With Physicians

Communication with physicians	*df*	*F*	*p* value	*R²*	*SE*
Regression	6	7.66	< .001	0.16	4.28
Residual	204				

Notes. * indicates statistically significant at the .05 level of significance

      ** indicates statistically significant at the .01 level of significance.

Table 10 presents the multiple linear regression model using the data collected using Communication with Physicians as the dependent variable. Two controlling variables were statistically significant ($p < .05$) predictors of the dependent variable, specifically hospital size ($p < .001$) and Hospital affiliation ($p = .01$). The Gender of CEO was not a statistically significant predictor. The independent and controlling variables were assumed not to be multicollinear (VIF < 10; Table B3).

One other control variable was a statistically significant ($p < .05$) predictor of the dependent variable, specifically Hospital affiliation. The interpretation of the negative slope ($b = -3.11$) is that the quality of Communication with Physicians was predicted to be lower in system-affiliated hospitals and better in independent hospitals.

Table 10

Multiple Linear Regression Model Using the Data Collected to Predict Communication With

Physicians

Independent variables	*b*	*SE*	*t*	*p*
Gender of CEO	-0.48	0.74	-0.66	.51
Hospital size	-0.01	0.00	-5.43	$< .001$**
Hospital ownership	-0.21	0.59	-0.35	.73
Hospital location	-.087	1.20	-0.72	.47
Teaching status	-0.92	1.56	-0.59	.55
Hospital affiliation	-3.11	1.10	-2.83	.01*

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .01 level of significance.

The model adjusted $R^2 = 0.16$

The *p* values greater than .05 indicated that the controlling variables (i.e., Hospital

ownership, Hospital location, and Teaching status) were not statistically significant predictors of

the dependent variable. After controlling for the hospital characteristics and physician

communication, there is no difference in gender.

Responsiveness of Staff

This section presents the analysis of the patient experience Responsiveness of staff. The

assumptions of the regression model were tested. The skewness and kurtosis statistics were

within the expected normal limits (± 2.0 for skewness and ± 3 for kurtosis) indicating that the

distributions were approximately normal (skewness = 0.63, kurtosis = -0.15; Table B1). The

statistical inferences of the regression model were not compromised by violation of the

assumption of homogeneity of variance ($F_{(1, 209)} = 1.39$, $p = 0.24$; Table B2). The *p* value > .01

indicated that the variances were consistently equal between the male and female participants for

the dependent variable. Additionally, the graphical representations of the distributed residual

from the predicted scores were normally distributed (Figure C5).

Table 11 provides the results of the ANOVA of Responsiveness of staff while controlling

for hospital characteristics The model as a whole was statistically significant to predict

Responsiveness of staff ($F_{(6, 204)} = 9.59$, $p < .001$) as shown by the ANOVA table. The R^2 for the

overall model was 22.0% (SE = 7.01) with an adjusted R^2 of 19.7 %. Both R^2 and standard error

are small for this regression model indicating not the best model to account for the predictor

variable. The values for R^2 suggests that gender has a small effect on the responsiveness of staff.

A small size effect is reported by the model, of variation in Responsiveness with staff is

accounted by the predictor variable (Gender of the CEO) and controlling variables (i.e., Hospital

size, Hospital ownership, Hospital location, Teaching status, Hospital affiliation, and the

interaction Gender-Size). The standard error indicates little variance in the measure of gender

and responsiveness of staff.

Table 11

ANOVA of Responsiveness of Staff

Responsiveness of staff	df	F	p value	R^2	SE
Regression	6	10.44	< .001	.197	7.63
Residual	207				

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .01 level of significance.

Table 12 presents the multiple linear regression model using the data collected with

Responsiveness of staff as the dependent variable. One controlled variable was statistically

significant ($p < .05$) predictor of the dependent variable, specifically hospital size ($p < .001$).

Gender of CEO was not a statistically significant predictor. The independent and controlling

variables were assumed not to be multicollinear (VIF < 10; Table B3). The interpretation of the

negative slope for hospital size (b = -0.02) is that the quality of Responsiveness of staff was

predicted to be lower in larger hospitals and better in smaller hospitals.

Table 12

Multiple Linear Regression Model Using the Data Collected to Predict Responsiveness of Staff

Independent variables	b	SE	t	p
Gender of CEO	-0.13	1.28	-0.11	.92
Hospital size	-0.02	0.00	-6.23	< .001*
Hospital ownership	1.87	1.03	1.82	.07
Hospital location	-0.90	2.10	-0.43	.67
Teaching status	0.46	2.72	0.17	.87
Hospital affiliation	-3.63	1.92	-1.89	.06

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .01 level of significance.

The model adjusted R^2 = 0.197

The *p* values greater than .05 indicated that the independent variable (Gender of CEO)

and controlling variables (i.e., Hospital location, Teaching status, and Hospital affiliation) were

not statistically significant predictors of the dependent variable. After controlling for the hospital

characteristics and responsiveness of staff, there is no difference in gender.

Communication About Medicines

This section presents the analysis of the patient experience Communication about

medicines. The assumptions of the regression model were tested. The skewness and kurtosis

statistics were within the expected normal limits (± 2.0 for skewness and ±3 for kurtosis)

indicating that the distributions were approximately normal (skewness = 0.50, kurtosis = 0.25;

Table B1). The statistical inferences of the regression model were not compromised by violation

of the assumption of homogeneity of variance ($F_{(1, 209)} = 3.66$, $p = 0.06$; Table B2). The p value

> .01 indicated that the variances were consistently equal between the male and female

participants for the dependent variable. Additionally, the graphical representations of the

distributed residual from the predicted scores were normally distributed (Figure C6).

Table 13 provides the results of the ANOVA of Communication of medicines while

controlling for hospital characteristics The model as a whole was statistically significant to

predict Communication about medications ($F_{(6,204)} = 4.16$, $p = .001$) as shown by the ANOVA

table. The R^2 for the overall model was 10.9% (SE = 5.36) with an adjusted R^2 of 8.3%. Both R^2

and standard error are small for this regression model indicating not a good fit. The values for R^2

suggests that gender has a small effect on the communication of medications. A small size effect

is reported by the model, of variation in Communication about medication is accounted by the

predictor variable (Gender of the CEO) and controlling variables (i.e., Hospital size, Hospital

ownership, Hospital location, Teaching status, Hospital affiliation, and the interaction Gender-

Size). The standard error indicates little variance in the measure of gender and communication

about medications.

Table 13

ANOVA of Communication About Medications

Communication about medications	*df*	*F*	*p* value	*R²*	*SE*
Regression	6	4.16	.001	0.083	5.60
Residual	204				

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .01 level of significance.

Table 14 presents the multiple linear regression model using the data collected with

Communication about medicines as the dependent variable. One control variable was statistically

significant ($p < .05$) predictor of the dependent variable, specifically hospital size ($p < .001$). The

Gender of CEO was not a statistically significant predictor. The independent and controlling

variables were assumed not to be multicollinear (VIF < 10; Table B3). The interpretation of the

negative slopes for hospital size ($b = -0.01$) is that the quality of Communication about

medications was predicted to be lower in larger hospitals and better in smaller hospitals.

Table 14

Multiple Linear Regression Model Using the Data Collected to Predict Communication About

Medication

Independent variables	b	SE	t	p
Gender of CEO	-0.45	0.98	-0.46	.65
Hospital size	-0.01	0.00	-4.53	$< .001$**
Hospital ownership	0.10	0.79	0.13	.90
Hospital location	0.02	1.60	0.01	.99
Teaching status	-0.41	2.08	-0.20	.84
Hospital affiliation	-1.72	1.47	-1.17	.24

Notes. * indicates statistically significant at the .05 level of significance.

　　　** indicates statistically significant at the .01 level of significance.

　　　The model adjusted $R^2 = .083$

　　　The *p* values greater than .05 indicated that the independent variable (Gender of CEO)

and controlling variables (i.e., Hospital ownership, Hospital location, Teaching status, and

Hospital affiliation) were not statistically significant predictors of the dependent variable. After

controlling for the hospital characteristics and communication about medication, there is no

difference in gender.

Discharge Information

This section presents the analysis of the patient experience Discharge information. The assumptions of the regression model were tested. The skewness and kurtosis statistics were not within the expected normal limits ($\pm$ 2.0 for skewness and $\pm$3 for kurtosis) indicating that the distributions were nonnormal (skewness = -2.94, kurtosis = 21.69; Table B1). Given, the sample size is sufficiently large (N >200), the violations of the normality assumption do not impact the results of regression so long as the number of observations per variable is greater than 10 (Schmidt & Finan, 2018). Therefore, no adjustments were made to the model. The statistical inferences of the regression model were not compromised by violation of the assumption of homogeneity of variance (F $_{(1, 209)}$ = 0.04, p = 0.06; Table B2). The p value > .01 indicated that the variances were consistently equal between the male and female participants for the dependent variable. Additionally, the graphical representations of the distributed residual from the predicted scores were normally distributed (Figure C7).

Table 15 provides the results of the ANOVA of Discharge information while controlling for hospital characteristics. The model as a whole was statistically significant to predict Discharge information (F $_{(6, 204)}$ = 2.99, p = 0.008) as shown by the ANOVA table. The R^2 for the overall model was 8.1% (SE = 3.85), with an adjusted R^2 of 5.4%. Both R^2 and standard error are small for this regression model indicating not a good fit. The values for R^2 suggests that gender has a small effect on the discharge information. A small size effect is reported by the model, of variation in Discharge information is accounted by the predictor variable (Gender of the CEO) and controlling variables (i.e., Hospital size, Hospital ownership, Hospital location, Teaching status, Hospital affiliation, and the interaction Gender-Size). The standard error indicates little variance in the measure of gender and discharge information.

Table 15

ANOVA of Discharge Information

Discharge information	*df*	*F*	*p* value	R^2	*SE*
Regression	6	2.99	.008	0.054	3.92
Residual	204				

Notes. * indicates statistically significant at the .05 level of significance.

   ** indicates statistically significant at the .01 level of significance.

Table 16 presents the multiple linear regression model using the data collected with Discharge information as the dependent variable. Two control variables were statistically significant ($p < .05$) predictors of Discharge information, specifically Hospital size ($p < .05$) and Teaching status ($p < .05$). The Gender of CEO was not a statistically significant predictor. The independent and controlling variables were assumed not to be multicollinear (VIF < 10; Table B3).

The interpretation of the negative slopes for hospital size ($b = -0.01$) is the quality of Discharge information was predicted to be lower in larger hospitals and better in smaller hospitals. The interpretation of the positive slope for Teaching status ($b = 4.74$) is that the quality of Discharge information was predicted to be higher in teaching hospitals.

Table 16

Multiple Linear Regression Model Using the Data Collected to Predict Discharge Information

Independent variables	*b*	*SE*	*t*	*p*
Gender of CEO	-0.60	0.71	-0.85	.40
Hospital size	-0.01	0.00	-2.87	.004*
Hospital ownership	-0.12	0.57	-0.22	.83
Hospital location	0.32	1.15	0.28	.78
Teaching status	4.74	1.49	3.17	.002*
Hospital affiliation	-0.42	1.06	-0.40	.69

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .01 level of significance.

The model adjusted $R^2 = .054$

The *p* values greater than .05 indicated that the independent variable (Gender of CEO) and controlling variables (i.e., Hospital ownership, Hospital location, and Hospital affiliation) were not statistically significant predictors of the dependent variable. After controlling for the hospital characteristics and the discharge information, there is no difference in gender.

Understanding of Care

This section presents the analysis of the patient experience Understanding of care. The assumptions of the regression model were tested. The skewness and kurtosis statistics were within the expected normal limits ($\pm$ 2.0 for skewness and ± 3 for kurtosis) indicating that the distributions were approximately normal (skewness = 0.45, kurtosis = 0.05; Table B1). The statistical inferences of the regression model were not compromised by violation of the assumption of homogeneity of variance ($F_{(1, 209)} = 2.64$, $p = 0.11$; Table B2). The *p* value > .01 indicated that the variances were consistently equal between the male and female participants for

the dependent variable. Additionally, the graphical representations of the distributed residual from the predicted scores were normally distributed (Figure C8).

Table 17 provides the results of the ANOVA of Understanding of care while controlling for hospital characteristics. The model as a whole was statistically significant to *predict* Understanding of care ($F_{(6, 204)} = 3.45$, $p = .003$) as shown by the ANOVA table. The R^2 for the overall model was 9.2% (SE = 6.27) with an adjusted R^2 of 6.5%. Both R^2 and standard error are small for this regression model indicating not a good fit. The values for R^2 suggests that gender has a small effect on the understanding of care. A small size effect is reported by the model, of variation in Understanding of care is accounted by the linear combination of the predictor variable (Gender of the CEO) and controlling variables (i.e., Hospital size, Hospital ownership, Hospital location, Teaching status, and Hospital affiliation). The standard error indicates little variance in the measure of gender and understanding of care.

Table 17

ANOVA of Understanding Care

Understanding of care	*df*	*F*	*p* value	R^2	*SE*
Regression	6	3.44	.003	0.065	6.47
Residual	204				

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .01 level of significance.

Table 18 presents the multiple linear regression model using the data collected with respect to Understanding of care as the dependent variable. One control variable was statistically significant ($p < .05$) predictor of the dependent variable, specifically hospital size ($p < .001$). The Gender of CEO was not a statistically significant predictor. The independent and controlling variables were assumed not to be multicollinear (VIF < 10; Table B3). The interpretation of the

negative slopes for hospital size ($b = -0.01$) is that the quality of Understanding of care was predicted to be lower in larger hospitals and better in smaller hospitals.

Table 18

Multiple Linear Regression Model Using the Data Collected to Predict Understanding of Care

Independent variables	*b*	*SE*	*t*	*p*
Gender of CEO	-1.50	1.15	-1.31	.19
Hospital size	-0.01	0.00	-3.78	< .001**
Hospital ownership	0.26	0.92	0.28	.78
Hospital location	0.24	1.88	0.13	.90
Teaching status	-1.42	2.43	-0.59	.56
Hospital affiliation	-2.58	1.72	-1.50	.14

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .01 level of significance.

The model adjusted $R^2 = 0.065$

The *p* values greater than .05 indicated that the independent variable (Gender of CEO) and controlling variables (i.e., Hospital ownership, Hospital location, Teaching status, and Hospital affiliation) were not statistically significant predictors of the dependent variable. After controlling for the hospital characteristics and understanding of care, there is no difference in gender.

Cleanliness

This section presents the analysis of the patient experience Cleanliness. The assumptions of the regression model were tested. The skewness and kurtosis statistics were within the expected normal limits (± 2.0 for skewness and ± 3 for kurtosis) indicating that the distributions were approximately normal (skewness = 0.05, kurtosis = -0.20; Table B1). The statistical inferences of the regression model were not compromised by violation of the assumption of

homogeneity of variance (F [1, 209] = 0.31, p = .58; Table B2). The p value > .01 indicated that the variances were consistently equal between the male and female participants for the dependent variable. Additionally, the graphical representations of the distributed residual from the predicted scores were normally distributed (Figure C9).

Table 19 provides the results of the ANOVA Cleanliness while controlling for hospital characteristics. The model as a whole was statistically significant to predict Cleanliness (F [6, 204] = 8.46, p < .001) as shown by the ANOVA table. The $R2$ for the overall model was 19.9% (SE = 5.26) with an adjusted $R2$ of 17.6%. Both $R2$ and standard error are small for this regression model indicating not the best model to account for the predictor variable. The values for $R2$ suggests that gender has a small effect on cleanliness. A small size effect is reported by the model, of variation in Cleanliness is accounted by the predictor variable (Gender of the CEO) and controlling variables (i.e., Hospital size, Hospital ownership, Hospital location, Teaching status, Hospital affiliation, and the interaction Gender-Size). The standard error indicates little variance in the measure of gender and cleanliness.

Table 19

ANOVA of Cleanliness

Cleanliness	df	F	p value	R^2	SE
Regression	6	8.46	< .001	0.176	5.74
Residual	204				

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .01 level of significance.

Table 20 presents the multiple linear regression model using the data collected with respect to Cleanliness as the dependent variable. One control variable was a statistically significant (p < .05) predictor of the dependent variable, specifically hospital size (p < .001). The

Gender of CEO was not a statistically significant predictor. The independent and controlling variables were assumed not to be multicollinear (VIF < 10; Table B3). The interpretation of the negative slope for hospital size (b = -0.01) is that the quality of Cleanliness was lower in larger hospitals and better in smaller hospitals.

Table 20

Multiple Linear Regression Model Using the Data Collected to Predict Cleanliness

Independent variables	b	SE	t	p
Gender of CEO	-0.02	0.97	-0.02	.25
Hospital size	-0.01	0.00	-6.55	< .001**
Hospital ownership	0.21	0.80	0.75	.79
Hospital location	-1.92	1.47	-0.81	.23
Teaching status	1.76	2.16	-0.87	.39
Hospital affiliation	-1.75	1.31	-0.22	.23

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .01 level of significance.

The model adjusted R^2 = .176.

The *p* values greater than .05 indicated that the independent variable (Gender of CEO) and controlling variables (i.e., Hospital ownership, Hospital location, Teaching status, and Hospital affiliation) were not statistically significant predictors of the dependent variable. After controlling for the hospital characteristics and cleanliness, there is no difference in gender.

Quietness

This section presents the analysis of the patient experience Quietness. The assumptions of the regression model were tested. The skewness and kurtosis statistics were within the expected normal limits (± 2.0 for skewness and ±3 for kurtosis) indicating that the distributions were approximately normal (skewness = 0.88, kurtosis = 0.18; Table B1). The statistical inferences of

the regression model were not compromised by violation of the assumption of homogeneity of variance (F $_{(1, 209)}$ = 3.72, p = .06; Table B2). The p value > .01 indicated that the variances were consistently equal between the male and female participants for the dependent variable. Additionally, the graphical representations of the distributed residual from the predicted scores were normally distributed (Figure C10).

Table 21 provides the results of the ANOVA Quietness while controlling for hospital characteristics. The model as a whole was statistically significant to predict Quietness (F $_{(6, 204)}$ = 10.51, p < .001) as shown by the ANOVA table. The R^2 for the overall model was 23.6% (SE = 7.08) with an adjusted R^2 of 21.4%. Both R^2 and standard error are small for this regression model indicating not the best model to account for the predictor variable. The values for R^2 suggests that gender has a small effect on quietness. A small size effect is reported by the model, of variation Quietness is accounted by the predictor variable (i.e., Gender of the CEO) and controlling variables (i.e., Hospital size, Hospital ownership, Hospital location, Teaching status, Hospital affiliation, and the interaction Gender-Size). The standard error indicates little variance in the measure of gender and quietness.

Table 21

ANOVA of Quietness

Quietness	*df*	*F*	*p* value	R^2	*SE*
Regression	6	10.51	< .001	0.214	7.61
Residual	204				

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .01 level of significance.

Table 22 presents the multiple linear regression model using the data collected with respect to Quietness as the dependent variable. Three control variables were statistically

significant ($p < .05$) predictors of the dependent variable, specifically Hospital size ($p < .001$),

Hospital ownership ($p = .02$), and Hospital affiliation ($p = .01$). The Gender of CEO was not a

statistically significant predictor. The independent and controlling variables were assumed not to

be multicollinear (VIF < 10; Table B3).

The interpretation of the negative slopes for hospital size ($b = -0.01$) is that the quality of

Quietness was lower in larger hospitals and better in smaller hospitals. The interpretation of the

positive slope ($b = 2.50$) is that the quality of Quietness was predicted to be lower in nonprofit

than for-profit hospitals. The interpretation of the negative slope for Hospital affiliation ($b = -4.97$) is that the quality of Quietness was predicted to be less in system-affiliated hospitals than

independent-affiliated hospitals.

Table 22

Multiple Linear Regression Model Using the Data Collected to Predict Quietness

Independent variables	*b*	*SE*	*t*	*p*
Gender of CEO	0.02	1.28	0.01	.94
Hospital size	-0.01	0.00	-6.34	< .001**
Hospital ownership	2.50	1.06	0.23	.02*
Hospital location	-0.58	1.93	1.28	.79
Teaching status	-4.40	2.85	-2.25	.11
Hospital affiliation	-4.97	1.72	-2.98	.01*

Notes. * indicates statistically significant at the .05 level of significance.

** indicates statistically significant at the .01 level of significance.

The model adjusted $R^2 = .214$.

The *p* values greater than .05 indicated the independent variable (Gender of CEO) and

controlling variables (i.e., Hospital location, Teaching status, and Hospital affiliation) were not

statistically significant predictors of the dependent variable. After controlling for the hospital characteristics and the average patient experience, there is no difference in gender.

Summary

The purpose of the study was to examine the effects of CEO gender on the characteristics of acute care hospitals/medical centers in Texas and the patient experiences during the calendar year 2019. Two sets of results were presented to address the three research questions, one set of results using the data collected ($n = 211$).

The most frequent gender of the CEO was male. About half of the hospital ownership was nonprofit. The hospitals were mainly located in urban areas. Nearly all were teaching hospitals. The most frequent hospital affiliation was system.

Insufficient statistical evidence was provided to address the question: What is the CEO gender difference in patient experience scores? The analyses showed that there was no statistically significant difference between CEO gender and the eight patient experience domains (Table 2). The p values $> .05$ for the independent sample t tests indicated no significant differences in the eight dimensions of patient experiences (i.e., Communication with nurses, Communication with physicians, Responsiveness of staff, Communication about medicines, Discharge information, Understanding of care, Cleanliness, and Quietness) between hospitals with male and female CEOs.

Sufficient statistical evidence was obtained to address the question: What is the relationship between hospital characteristics and CEO gender? After adjusting for hospital characteristics, there were statistically significant relationships between all patient domains for hospital size. Independent sample t tests indicated that the average hospital sizes were significantly ($p < .05$) greater among the male CEOs than among the female CEOs. Pearson's

Chi Square tests found one statistically significant ($p < .05$) association, between CEO gender and hospital ownership. No statistically significant associations were found between CEO gender vs. Hospital location, Teaching status, and Hospital affiliation.

Sufficient statistical evidence was obtained to address the question: After controlling for hospital characteristics is there a difference in the gender of the hospital CEO and the patient experience scores? Multiple linear regression analysis indicated that the gender of the CEO was not a consistent statistically significant predictor of the eight individual dimensions of patient experience (i.e., Communication with nurses, Communication with physicians, Responsiveness of staff, Communication about medicines, Discharge information, Understanding of care, Cleanliness, and Quietness) after controlling for hospital characteristics (i.e., Hospital size, Hospital ownership, Hospital location, Teaching status, and Hospital affiliation).

This is an exploratory study that consisted of a small sample of female CEOs (18.5%). The variables did not predict well whether the female CEO gender impact patient experience scores in acute care hospitals within Texas. Thus, the quality of care was not a factor of the CEOs gender based on the results of this study. However, there were statistically significant relationships between all patient domains for hospital size but was not a consistent statistically significant predictor of the eight patient experience domains within this study.

Chapter 5: Discussion

The purpose of the study was to examine the effects of CEO gender on the characteristics of acute care hospitals in Texas and the patient experiences during the 2019 calendar. The research questions were answered by interpreting the results of a quantitative surveys and implied statistically significance. Sufficient evidence (based on statistically significant relationships) was obtained to answer Question 2: What is the relationship between hospital characteristics and CEO gender, and Question 3: After controlling for hospital characteristics, is there a difference in the gender of the hospital CEO and the patient experience scores? However, insufficient evidence was provided to address Question 1: What is the relationship between patient experience scores and the gender of the CEO? Hence, this chapter presents an interpretation of the answers to the research questions in the context of the literature, together with a consideration of the practical implications of the findings, a discussion of the limitations of the study, followed by recommendations for future research using quantitative and qualitative methodologies.

Interpretation of the Results

An important finding of this study is that female CEOs were found to be the minority in acute care hospitals in Texas (18.5%). This finding is consistent with previous studies which reported that women occupied about 18% of CEO positions in hospitals in the United States as a whole (Bureau of Labor Statistics, 2019; Chisholm-Burns et al., 2017) whilst a more recent estimate indicated that about 20% of hospitals in the United States had a female CEO (Silvera & Clark, 2021). Little appears to have changed regarding the proportions of women in leadership positions in hospitals over the last few decades (Hauser, 2014; Hill et al., 2015; Sexton et al., 2014). The overall conclusion is that that gender diversity in healthcare continues to be limited in

leadership roles, and that women are still significantly underrepresented in CEO positions compared to men (Galstian et al., 2018).

Gender and Social Roles

The study confirmed an important finding that is the relationship between hospital characteristics and CEO gender. The mean hospital sizes were significantly greater among the male CEOs than among the female CEOs. Previous studies have also indicated that very few women reach the highest leadership positions in the largest organizations. For example, 26% of CEOs of large companies in the United States are women, and only 5% of the Fortune 500 companies have a female CEO (FTSE 250).

Given that this study did not directly examine social role theory on specific gendered attitudes and behavior in hospitals, it may be worth considering what and how gendered attitudes and behavior shape hospital leadership. Although previous studies have examined the perception of competence by gender (Abraham, 2020; Carli & Eagly, 2016; Eagly et al., 2019), additional research should be performed to identify specific attitudes in behaviors in hospital leaders and other decision-makers. As perception may continue to perpetuate inequality barriers as women challenge social roles in the hospitals (Abraham, 2020).

CEO Gender and the Patient Experience

The analysis of this study for Texas acute care hospitals confirmed no consistently significant differences between the male and female CEOs at $N = 211$ hospitals with respect to the mean scores for the eight dimensions of patient experience measured with HCAHPS. This finding was not consistent with Galstian et al. (2018) who conducted a survey using the HCAHPS in 249 hospitals in California revealing that female CEO gender was associated with significantly higher overall patient experience scores. The higher scores were attributed to the

communal or relational characteristics women typically possess that influence their leadership style. Consequently, the relational style had a more positive effect on the patient experience. The findings of the current study were more consistent with Silvera and Clark (2021) who conducted a previous survey using the HCAHPS between 2007 and 2011 to examine the circumstances under which CEO gender may have an impact on patient experience. Three questions were evaluated for this study: (a) whether hospitals led by female CEOs indicated higher experience scores with respect to the patient's perspective, (b)whether population density influenced the relationship between female hospital CEOs and patient experience, and (c) whether hospital size influenced the relationship between female hospital CEOs and the patient experience The conclusion, based on a sample of 5,471 patient in 391 U.S. hospitals, was that no simple direct relationship could be found between CEO gender and patient experience. However, there was an indirect relationship because the size of the hospital was a mediating factor. Female CEOs were associated with higher patient experience scores in larger hospitals in the largest cities. In contrast, female CEOs were associated with lower patient experience scores in smaller hospitals in the smallest cities.

Complexity of Hospital Size and Gender

The results of the current study also confirmed a statistically significant interaction (CEO gender x Hospital size) indicating that gender was a factor of the relationship between Hospital size and Average patient experience. The mediating effect observed in this study was consistent with the effect observed by Silvera and Clark (2021). That is the findings by Silvera and Clark (2021) concluded that female CEOs were associated with higher patient experience scores in larger hospitals in the United States as a whole. The current study concluded that female CEOs

were associated with higher average patient experience scores in larger hospitals in Texas than male CEOs in larger hospitals.

The results of this study support the conceptual framework's two arguments. The first argument that female CEOs approach to leadership has a more positive effect on the patient experience. However, the effect is limited to larger hospitals with more complex dynamics. Second, hospital characteristics affect the patient experience. Specifically, for this study and like Silvera and Clark's (2021) study, hospital size has an inverse relationship on the patient experience. That is the experience scores declined as the hospital size increased. However, given the complexity of larger hospitals, female CEOs performed better in larger hospitals compared to smaller hospitals.

Practical Implications

An important practical implication of this and previous studies is that women still remain underrepresented in the highest levels of healthcare positions. Consequently, gender bias in hospital leadership remains a challenge (Chisholm-Burns et al., 2017). A shortage of experienced and qualified healthcare leaders is expected as the baby-boomer generation retire, and a lack of new women leaders to replace retired leaders remains a challenging issue (Hauser, 2014). Gender diversity in healthcare leadership continues to be a problem in the 21st century to which solutions must be sought in order to eliminate gender disparities (Bass et al., 2019).

Because for many years women have been overlooked for leadership positions (Glass & Cook, 2018; Lantz, 2008) it is necessary to institute strategies that will promote the grooming and promoting of women to CEO positions to fill the leadership pipeline in hospitals. Moreover, it is essential to encourage the diversification of hospital leadership in order to represent the diversity of the communities that they serve and to make decisions that improve the quality of

care that their patients need to receive. Also, there were no statistically significant comparisons between CEO gender and hospital characteristics except the 69% of female CEOs in Texas tend to occupy their role at For-profit hospitals. This may further support claims that one the nonprofit sector seemingly favors men over equally qualified women for leadership positions, and two women are often paid less than male leaders.

The relationship between the size of the hospital, the gender of the CEO, and the quality of patient experience has practical implications with respect to the development of more positive patient experiences. Diversity in hospital leadership across both small and large hospitals is valued and important for achieving clinical excellence and health equity (Herrin, Mockaitis, et al., 2018; Sexton et al., 2014; Sommers et al., 2017). The results of this study suggest a direction to improved patient-centered cultures leading to more positive patient experiences that begin with an increase in female representation in executive roles.

Limitations of the Results

Although this study contributes to our understanding of hospital leaders CEO gender and performance, it has its limitations. First, gender was interpreted based on the pronouns used in the hospital web pages and or media. Some websites have eliminated the use of pronouns and for this study gender was limited to the binary classification. Second, the self-reported responses of patients in questionnaires devised to measure the quality of healthcare are usually biased and need to be interpreted with caution. Burroughs et al. (2005) suggested that self-report questionnaires provide healthcare providers with inflated impressions of their patients' levels of satisfaction. Berkowitz (2016) claimed that researchers and policy makers have a lot to learn about the dynamics of patient satisfaction and its measurement in healthcare settings. Dunsch et al. (2018) concluded that patient questionnaires tend to overestimate the quality of health

services. Consequently, bias in the self-reported measures of the dimensions of experience collected from the patients in this study (i.e., communication with physicians, responsiveness of staff, communication about medicines, discharge information, understanding of care, cleanliness, and quietness) may be a source of misleading results. Lastly, this study did not directly test relational factors (i.e., trust, commitment, and collaboration), as the experiences were not addressed in the survey. However, this analysis is consistent with previous studies (Galstian et al., 2018; Silvera & Clark, 2021).

Delimitations

The original study was to include year 2018, but little change from one year to the next so the decision was made to exclusively study 2019 to avoid duplicate analysis from one year to the next.

Recommendations for Future Research

It is recommended that the research questions and methodological approach might be changed for future research. The research questions that guided this quantitative study began with "What is" and "Is there" that lacks the participants' voice. A qualitative research methodology is recommended in the future to answer more difficult and penetrating research questions beginning with "Why" that may potentially offer causal explanations to explain the relationships between CEO gender, hospital characteristics, and patient experience, for example: Why does CEO gender have an influence on patient experience? and Why do hospital characteristics have an influence on patient experience? Further, there may be value furthering the research identifying specific attitudes and behaviors that influence hospital practices that support or hamper opportunities for women to move into positions of leadership. Additionally, a

qualitative study may help recognize themes that suggest a pathway that utilizes and develops a more diverse talent pool.

The disadvantage of a qualitative study is that it requires considerable time and effort to collect and analyze data based on a large amount of interview transcripts compared to the relatively lesser time and energy required to collect and analyze quantitative data using a survey instrument (Merriam, 2014). Nevertheless, a qualitative study may in the future provide more conclusive information about the effects of CEO gender and hospital characteristics and the impact on patient outcomes. The conclusions based on the analysis of qualitative data may increase knowledge and understanding in creating a more patient-centered organization. Last, this study was also limited to gender, future research should also expand on other types of diversity such as race, age, and sexual orientation.

References

Abraham, M. (2020). Gender-role incongruity and audience-based gender bias: An examination of networking among entrepreneurs. *Administrative Science Quarterly*, *65*(1), 151–180. https://doi.org/10.1177/0001839219832813

Agency for Healthcare Research and Quality. (2016). *What is patient experience?* https://www.ahrq.gov/cahps/about-cahps/patient-experience/index.html

Ayeleke, R. O., Dunham, A., North, N., & Wallis, K. (2018). *The concept of leadership in the health care sector.* https://www.intechopen.com/books/leadership/the-concept-of-leadership-in-the-health-care-sector

Badura, K. L., Grijalva, E., Newman, D. A., Yan, T. T., & Jeon, G. (2018). Gender and leadership emergence: A meta-analysis and explanatory model. *Personnel Psychology*, *70*(3), 335–367. https://doi.org/10.1111/peps.12266

Bass, A. E., Combs, G. M., Milosevic, I., & Bilimoria, D. (2019). Top management team diversity, equality, and innovation: A multilevel investigation of the health care industry. *Journal of Leadership & Organizational Studies*, *23*(3), 339–351. https://doi.org/10.1177/1548051819849008

Berkowitz, B. (2016). The patient experience and patient satisfaction: measurement of a complex dynamic. *Online Journal of Issues in Nursing*, *21*(1). https://doi.org/10.3912/OJIN.Vol21No01Man01

Betts, D., & Balan-Cohen, A. (2017, May 30). *Value of patient experience: Impact of patient experience scores on clinical quality.* Deloitte. https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-value-patient-experience-050517.pdf

Bureau of Labor Statistics. (2019, January 18). *Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity*. https://www.bls.gov/cps/cpsaat11.htm

Burroughs, T. E., Waterman, B. M., Gilin, D., Adams, D., McCollagen, J., & Cira, J. (2015). Do on-site patient satisfaction surveys bias results? *Joint Commission Journal on Quality of Patient Safety*, *31*(3), 158–166. https://doi.org/10.1016/S1553-7250(05)31021-X

Carli, L. L., & Eagly, A. H. (2016). Women face a labyrinth: An examination of metaphors for women leaders. *Gender in Management: An International Journal*, *31*(8), 514–527. https://doi.org/10.1108/GM-02-2015-0007

Centers for Medicare and Medicaid. (2017). *Inpatient measures.* https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/InpatientMeasures.html

Chisholm-Burns, M. A., Spivey, C. A., Hagemann, T., & Josephson, M. A. (2017). Women in leadership and the bewildering glass ceiling. *American Journal of Health-System Pharmacy*, *74*(5), 312–324. https://doi.org/10.2146/ajhp160930

Creswell, J. W. (2009). *Mapping the field of mixed methods research.* Sage.

Dezsö, C. L., & Ross, D. G. (2012). Does female representation in top management improve firm performance? A panel data investigation. *Strategic Management Journal*, *33*(9), 1072–1089. https://doi.org/10.1002/smj.1955

Dunsch, F., Evans, D. K., Macis, M., & Qio, W. (2018). Bias in patient satisfaction surveys: on-site patient satisfaction surveys bias results: A threat to measuring healthcare quality. *BMJ Global Health*, *3*(2), 1–5. https://doi.org/10.1136/bmjgh-2017-000694

Eagly, A. H., & Carli, L. L. (2003). The female leadership advantage: An evaluation of the

    evidence. *The Leadership Quarterly*, *14*(6), 807–834.

    https://doi.org/10.1016/j.leaqua.2003.09.004

Eagly, A. H., & Johnson, B. T. (1990). Gender and leadership style: A meta-analysis.

    Psychological Bulletin, *108*(2), 233.

    http://opencommons.uconn.edu/cgi/viewcontent.cgi?article=1010&context=chip_docs

Eagly, A. H., Nater, C., Miller, D. I., Kaufmann, M., & Sczesny, S. (2019). Gender stereotypes

    have changed: A cross-temporal meta-analysis of U.S. public opinion polls from 1946 to

    2018. *American Psychologist*, *75*(3), 301–315. https://doi.org/10.1037/amp0000494.supp

Eagly, A. H., & Wood, W. (1999). The origins of sex differences in human behavior: Evolved

    dispositions versus social roles. *American Psychologist*, *54*(6), 408–423.

    https://doi.org/10.1037/0003-066X.54.6.408

Fine, C., Sojo, V., & Lawford, S. H. (2020). Why does workplace gender diversity matter?

    Justice, organizational benefits, and policy. *Social Issues and Policy Review*, *14*(1), 36–

    72. https://doi.org/10.1111/sipr.12064

Galstian, C., Hearld, L., O'Connor, S. J., & Borkowski, N. (2018). The relationship of hospital

    CEO characteristics to patient experience scores. *Journal of Healthcare Management /*

    American College of Healthcare Executives, *63*(1), 50–61. https://doi.org/10.1097/JHM-

    D-16-00020

Glass, C., & Cook, A. (2018). Do women leaders promote positive change? Analyzing the effect

    of gender on business practices and diversity initiatives. *Human Resource Management*,

    57(4), 823–837. https://doi.org/10.1002/hrm.21838

Hauser, M. C. (2014). Leveraging women's leadership talent in healthcare. *Journal of Healthcare Management*, *59*(5), 318–322. https://doi.org/10.1097/00115514-201409000-00004

Hcahpsonline.org. (2018). Introduction to HCAHPS survey training. https://hcahpsonline.org/globalassets/hcahps/training-materials/2018_training-materials_slides_introduction.pdf

Herrin, J., Harris, K. G., Spatz, E., Cobbs-Lomax, D., Allen, S., & León, T. (2018). Hospital leadership diversity and strategies to advance health equity. *The Joint Commission Journal on Quality and Patient Safety*, *44*(9), 545–551. https://doi.org/10.1016/j.jcjq.2018.03.008

Herrin, J., Mockaitis, K. G., & Hines, S. (2018). HCAHPS scores and community factors. *American Journal of Medical Quality: The Official Journal of the American College of Medical Quality*, *33*(5), 461–471. https://doi.org/10.1177/1062860618765977

Hill, A. D., Upadhyay, A. D., & Beekun, R. I. (2015). Do female and ethnically diverse executives endure inequity in the CEO position or do they benefit from their minority status? An empirical examination. *Strategic Management Journal (John Wiley & Sons, Inc.)*, *36*(8), 1115. http://www.jstor.org/stable/43897829

Hospital Consumer Assessment of Healthcare Providers and Assessments. (2019). HCAHPS survey. https://www.hcahpsonline.org/globalassets/hcahps/survey-instruments/mail/effective-december-1-2021-and-forward-discharges/2021_survey-instruments_english_mail_updateda.pdf

Inter-Parliamentary Union. (2019). *Women in national parliaments.* http://archive.ipu.org/wmn-e/world.htm

Javadi, D., Vega, J., Etienne, C., Wandira, S., Doyle, Y., & Nishtar, S. (2016). Women who lead: successes and challenges of five health leaders. *Health Systems & Reform*, *2*(3), 229–240. https://doi.org/10.1080/23288604.2016.1225471

Kruskal, J. B., & Sarwar, A. (2019). Improving the patient experience: A little effort goes a long way. *Radiology*, *291*. https://doi.org/10.1148/radiol.2019182902

Lantz, P. M. (2008). Gender and leadership in healthcare administration: 21st century progress and challenges. *Journal of Healthcare Management*, *53*(5), 291–301. https://doi.org/10.1097/00115514-200809000-00004

Livingston, S. (2018). Racism is still a problem in healthcare's C-Suite: Efforts aimed at boosting diversity in healthcare leadership fail to make progress. *Journal of Best Practices in Health Professions Diversity*, *11*(1), 60–65. https://www.jstor.org/stable/26554292

Manary, M., Staelin, R., Kosel, K., Schulman, K. A., & Glickman, S. W. (2015). Organizational characteristics and patient experiences with hospital care. *American Journal of Medical Quality*, *30*(5), 432. https://doi.org/10.1177/1062860614539994

McDonald, M. L., Keeves, G. D., & Westphal, J. D. (2018). One step forward, one step back: White male top manager organizational identification and helping behavior toward other executives following the appointment of a female or racial minority CEO. *Academy of Management Journal*, *61*(2), 405–439. https://doi.org/10.5465/amj.2016.0358

Merriam, S. B. (2014). *Qualitative research: A guide to design and implementation.* John Wiley & Sons.

Owens, K., Eggers, J., Keller, S., & McDonald, A. (2017). The imperative of culture: a quantitative analysis of the impact of culture on workforce engagement, patient

experience, physician engagement, value-based purchasing, and turnover. *Journal of Healthcare Leadership*, *9*, 25–31. https://doi.org/10.2147/JHL.S126381

Public Health Infrastructure: Healthy People 2020. (2014). https://www.healthypeople.gov/2020/topics-objectives/topic/public-health-infrastructure.

Sarto, F., & Veronesi, G. (2016). Clinical leadership and hospital performance: Assessing the evidence base. *BMC Health Services Research*, *16*(2), 85–97. https://doi.org/10.1186/s12913-016-1395-5

Schmidt, A. F., & Finan, C. (2018). Linear regression and the normality assumption. *Journal of Clinical Epidemiology*, *98*, 146–151. https://doi.org/10.1016/j.jclinepi.2017.12.006

Sexton, D. W., Lemak, C. H., & Wainio, J. A. (2014). Career inflection points of women who successfully achieved the hospital CEO position. *Journal of Healthcare Management / American College of Healthcare Executives*, *59*(5), 367–383. https://journals.lww.com/jhmonline/Abstract/2014/09000/Career_Inflection_Points_of_Women_Who_Successfully.11.aspx

Siegrist, R. (2013). Patient satisfaction: history, myths, and misperceptions. *The Virtual Mentor*, *15*(11), 982–987. https://doi.org/10.1001/virtualmentor.2013.15.11.mhst1-1311

Silvera, G. A., & Clark, J. R. (2021). Women at the helm: Chief executive officer gender and patient experience in the hospital industry. *Health Care Management Review*, *46*(3), 206–216. https://doi.org/10.1097/HMR.0000000000000252

Sim, A. (2015). The great recession of 2007-2009, the lagging jobs recovery, and the missing 5-6 million national labor force participants in 2011: Why we should care. *EPRN*. http://www.lerachapters.org/OJS/ojs-2.4.4-1/index.php/EPRN/article/download/1987/1983

Sommers, B. D., McMurtry, C. L., Blendon, R. J., Benson, J. M., & Sayde, J. M. (2017). Beyond

    health insurance: Remaining disparities in U.S. health care in the post-ACA era. *Milbank*

    Quarterly, *95*(1), 43–69. https://doi.org/10.1111/1468-0009.12245

Texas Department of State Health Services. (2017). *DFWHC Foundation*.

    https://dfwhcfoundation.org/tag/texas-department-of-state-health-services/

UNWomen. (2019). *Facts and figures: Leadership and political participation*.

    https://www.unwomen.org/en/what-we-do/leadership-and-political-participation/facts-

    and-figures

Wood, W., & Eagly, A. H. (2002). A cross-cultural analysis of the behavior of women and men:

    Implications for the origins of sex differences. *Psychological Bulletin*, *128*(5), 699–727.

    https://doi.org/10.1037/0033-2909.128.5.699

Appendix A: HCAHPS Patient Survey

HCAHPS Survey

SURVEY INSTRUCTIONS

♦ You should only fill out this survey if you were the patient during the hospital stay named in the cover letter. Do not fill out this survey if you were not the patient.

♦ Answer all the questions by checking the box to the left of your answer.

♦ You are sometimes told to skip over some questions in this survey. When this happens you will see an arrow with a note that tells you what question to answer next, like this:

☐ Yes
☑ No → *If No, Go to Question 1*

You may notice a number on the survey. This number is used to let us know if you returned your survey so we don't have to send you reminders.
Please note: Questions 1-22 in this survey are part of a national initiative to measure the quality of care in hospitals. OMB #0938-0981 (Expires November 30, 2021)

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

YOUR CARE FROM NURSES

1. During this hospital stay, how often did nurses treat you with courtesy and respect?
   - ¹☐ Never
   - ²☐ Sometimes
   - ³☐ Usually
   - ⁴☐ Always

2. During this hospital stay, how often did nurses listen carefully to you?
   - ¹☐ Never
   - ²☐ Sometimes
   - ³☐ Usually
   - ⁴☐ Always

3. During this hospital stay, how often did nurses explain things in a way you could understand?
   - ¹☐ Never
   - ²☐ Sometimes
   - ³☐ Usually
   - ⁴☐ Always

4. During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted it?
   - ¹☐ Never
   - ²☐ Sometimes
   - ³☐ Usually
   - ⁴☐ Always
   - ⁹☐ I never pressed the call button

YOUR CARE FROM DOCTORS

5. During this hospital stay, how often did doctors treat you with <u>courtesy and respect</u>?

   ¹☐ Never
   ²☐ Sometimes
   ³☐ Usually
   ⁴☐ Always

6. During this hospital stay, how often did doctors <u>listen carefully to you</u>?

   ¹☐ Never
   ²☐ Sometimes
   ³☐ Usually
   ⁴☐ Always

7. During this hospital stay, how often did doctors <u>explain things</u> in a way you could understand?

   ¹☐ Never
   ²☐ Sometimes
   ³☐ Usually
   ⁴☐ Always

THE HOSPITAL ENVIRONMENT

8. During this hospital stay, how often were your room and bathroom kept clean?

   ¹☐ Never
   ²☐ Sometimes
   ³☐ Usually
   ⁴☐ Always

9. During this hospital stay, how often was the area around your room quiet at night?

   ¹☐ Never
   ²☐ Sometimes
   ³☐ Usually
   ⁴☐ Always

YOUR EXPERIENCES IN THIS HOSPITAL

10. During this hospital stay, did you need help from nurses or other hospital staff in getting to the bathroom or in using a bedpan?

    ¹☐ Yes
    ²☐ No ➜ If No, Go to Question 12

11. How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted?

    ¹☐ Never
    ²☐ Sometimes
    ³☐ Usually
    ⁴☐ Always

12. During this hospital stay, were you given any medicine that you had not taken before?

    ¹☐ Yes
    ²☐ No ➜ If No, Go to Question 15

13. Before giving you any new medicine, how often did hospital staff tell you what the medicine was for?

    ¹☐ Never
    ²☐ Sometimes
    ³☐ Usually
    ⁴☐ Always

14. Before giving you any new medicine, how often did hospital staff describe possible side effects in a way you could understand?

    ¹☐ Never
    ²☐ Sometimes
    ³☐ Usually
    ⁴☐ Always

WHEN YOU LEFT THE HOSPITAL

15. After you left the hospital, did you go directly to your own home, to someone else's home, or to another health facility?

   1 ☐ Own home
   2 ☐ Someone else's home
   3 ☐ Another health
      facility → **If Another, Go to Question 18**

16. During this hospital stay, did doctors, nurses or other hospital staff talk with you about whether you would have the help you needed when you left the hospital?

   1 ☐ Yes
   2 ☐ No

17. During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?

   1 ☐ Yes
   2 ☐ No

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

UNDERSTANDING YOUR CARE WHEN YOU LEFT THE HOSPITAL

20. During this hospital stay, staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left.

   1 ☐ Strongly disagree
   2 ☐ Disagree
   3 ☐ Agree
   4 ☐ Strongly agree

21. When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.
    1☐ Strongly disagree
    2☐ Disagree
    3☐ Agree
    4☐ Strongly agree

22. When I left the hospital, I clearly understood the purpose for taking each of my medications.
    1☐ Strongly disagree
    2☐ Disagree
    3☐ Agree
    4☐ Strongly agree
    5☐ I was not given any medication when I left the hospital

ABOUT YOU

There are only a few remaining items left.

23. During this hospital stay, were you admitted to this hospital through the Emergency Room?
    1☐ Yes
    2☐ No

24. In general, how would you rate your overall health?
    1☐ Excellent
    2☐ Very good
    3☐ Good
    4☐ Fair
    5☐ Poor

25. In general, how would you rate your overall mental or emotional health?
    1☐ Excellent
    2☐ Very good
    3☐ Good
    4☐ Fair
    5☐ Poor

26. What is the highest grade or level of school that you have completed?
    1☐ 8th grade or less
    2☐ Some high school, but did not graduate
    3☐ High school graduate or GED
    4☐ Some college or 2-year degree
    5☐ 4-year college graduate
    6☐ More than 4-year college degree

27. Are you of Spanish, Hispanic or Latino origin or descent?
    1☐ No, not Spanish/Hispanic/Latino
    2☐ Yes, Puerto Rican
    3☐ Yes, Mexican, Mexican American, Chicano
    4☐ Yes, Cuban
    5☐ Yes, other Spanish/Hispanic/Latino

28. What is your race? Please choose one or more.
    1☐ White
    2☐ Black or African American
    3☐ Asian
    4☐ Native Hawaiian or other Pacific Islander
    5☐ American Indian or Alaska Native

29. **What language do you <u>mainly</u> speak at home?**

   ¹☐ English
   ²☐ Spanish
   ³☐ Chinese
   ⁴☐ Russian
   ⁵☐ Vietnamese
   ⁶☐ Portuguese
   ⁷☐ German
   ⁹☐ Some other language (please print):
   _____

[This next question is]/[These next questions are] from [NAME OF HOSPITAL] and [is/are] not part of the official survey.

NOTE: IF HOSPITAL-SPECIFIC SUPPLEMENTAL QUESTION(S) ARE ADDED, THE STATEMENT ABOVE MUST BE PLACED IMMEDIATELY BEFORE THE SUPPLEMENTAL QUESTION(S).

THANK YOU

Please return the completed survey in the postage-paid envelope.

[NAME OF SURVEY VENDOR OR SELF-ADMINISTERING HOSPITAL]

[RETURN ADDRESS OF SURVEY VENDOR OR SELF-ADMINISTERING HOSPITAL]

Questions 1-19 and 23-29 are part of the HCAHPS Survey and are works of the U.S. Government. These HCAHPS questions are in the public domain and therefore are NOT subject to U.S. copyright laws. The three Care Transitions Measure® questions (Questions 20-22) are copyright of Eric A. Coleman, MD, MPH, all rights reserved.

From "HCAHPS Survey," by Hospital Consumer Assessment of Healthcare Providers and Assessments, 2019 (https://www.hcahpsonline.org/globalassets/hcahps/survey-instruments/mail/effective-december-1-2021-and-forward-discharges/2021_survey-instruments_english_mail_updateda.pdf). In the public domain.

Appendix B: Test for Normality and Homogeneity

Table B1

Skewness and Kurtosis of Patient Experience

Patient Experience	Skewness (Std. Error 0.17)	Kurtosis (Std. Error 0.33)
Hospital size	2.56	10.15
Communication with nurses	0.42	-0.18
Communication with physicians	0.48	-0.45
Responsiveness of staff	0.63	-0.15
Communication about medicines	0.50	0.25
Discharge information	-2.94	21.69
Understanding of care	0.45	0.05
Cleanliness	0.05	-0.20
Quietness	0.88	0.18
Average patient experience	0.69	-0.17

Table B2

Levene's test for Homogeneity of Variance

Dependent variable	$F_{(1, 209)}$	p value
Hospital size	4.05	.05
Communication with nurses	2.36	.13
Communication with physicians	1.91	.17
Responsiveness of staff	1.39	.24
Communication about medicines	3.66	.07
Discharge information	0.04	.85
Understanding of care	2.64	.11
Cleanliness	0.31	.58
Quietness	3.72	.07
Average patient experience	1.49	.22

Table B3

Multicollinearity in Regression Analyses

Communication with Nurses	Collinearity Statistics	
	Tolerance	VIF
Gender of CEO	0.50	1.05
Hospital ownership	0.89	1.12
Hospital location	0.94	1.06
Teaching status	0.99	1.01
Hospital affiliation	0.96	1.04

Appendix C: Distribution of Residuals and Scatterplots

Figure C1

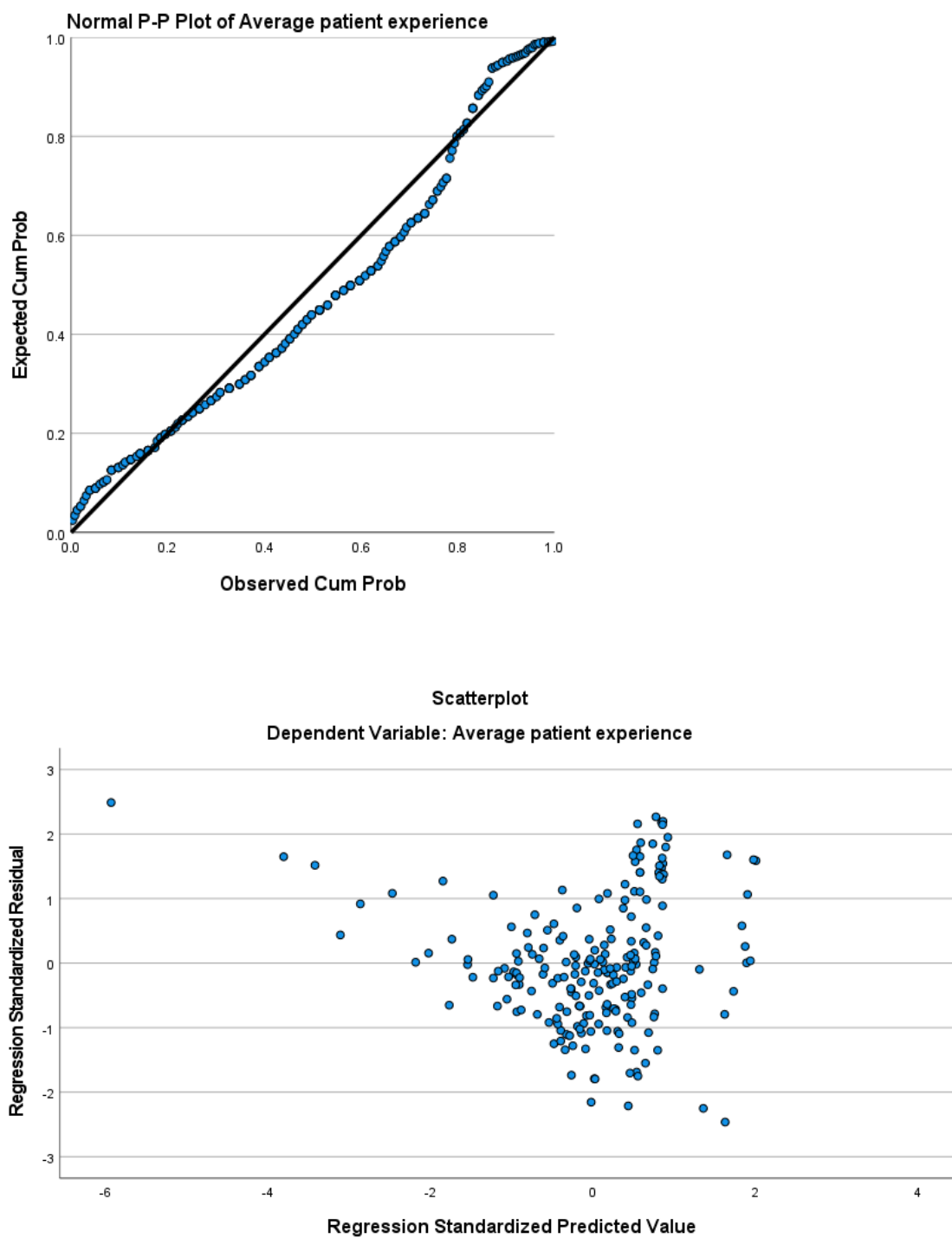*Distribution of Residuals for the Average Patient Experience*

Figure C2

Distribution of Residuals for the Regression Hospital Size
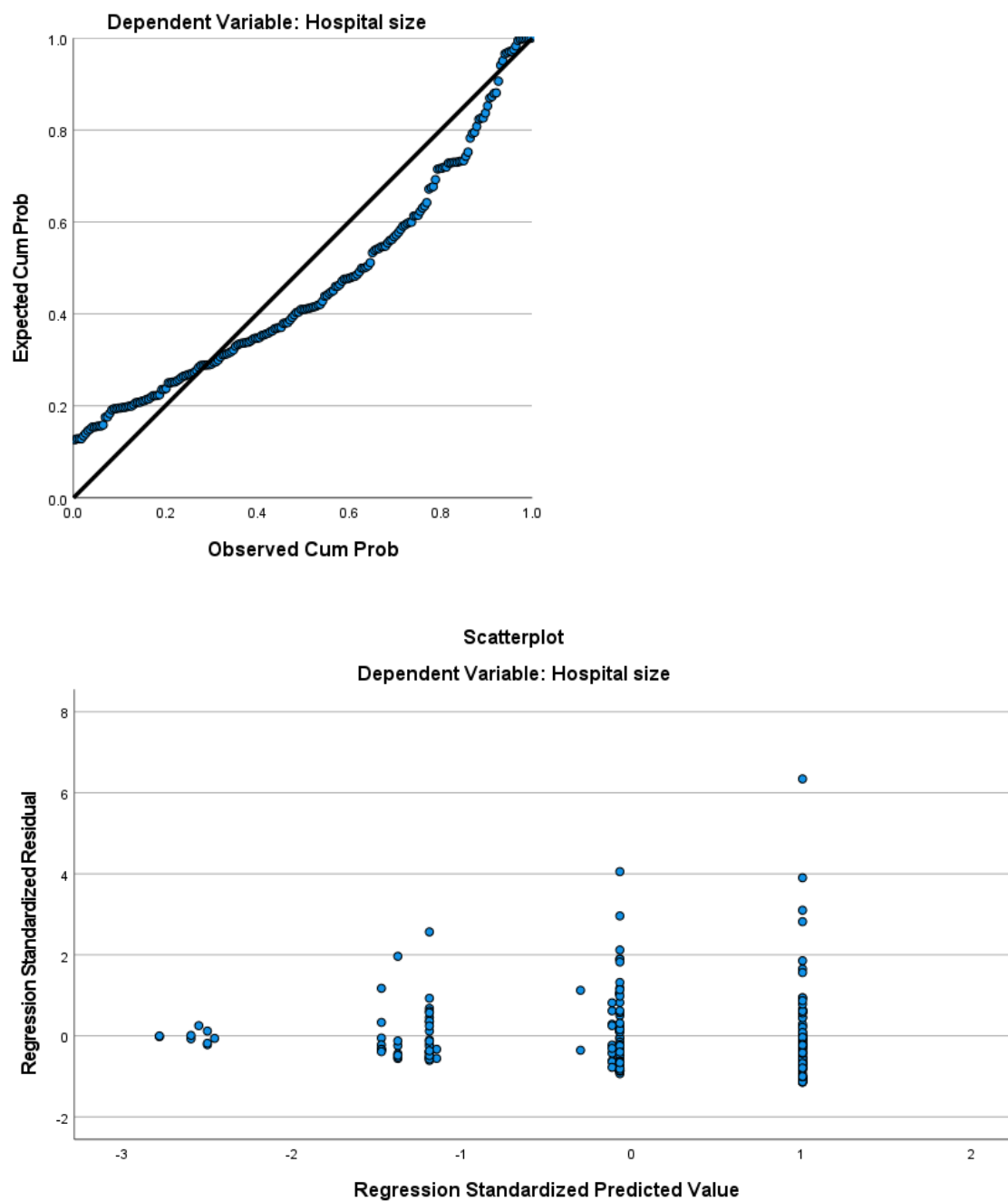
Figure C3

Distribution of Residuals for the Regression Communication with Nurses
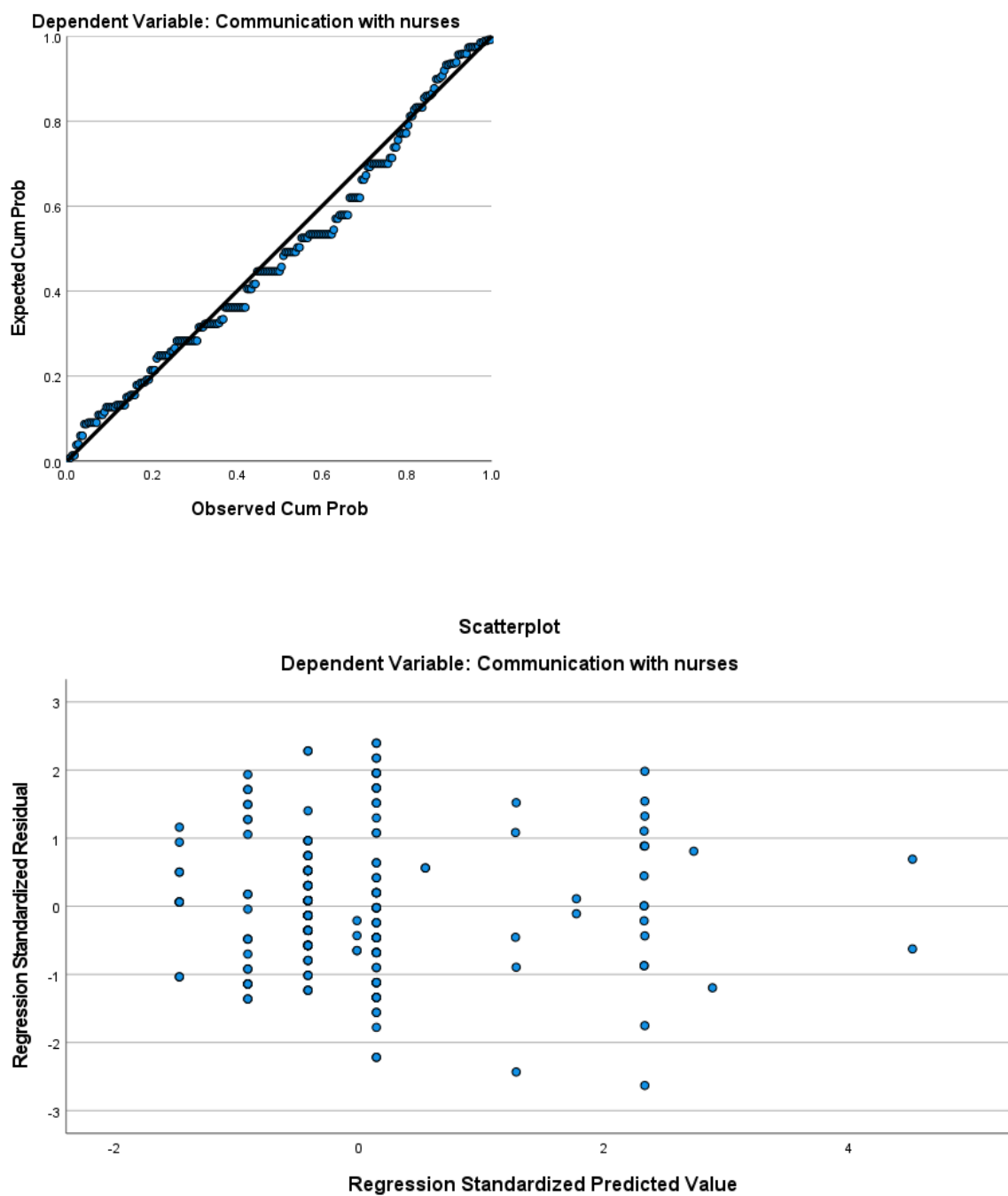
Figure C4

Distribution of Residuals for the Regression Communication with Physicians
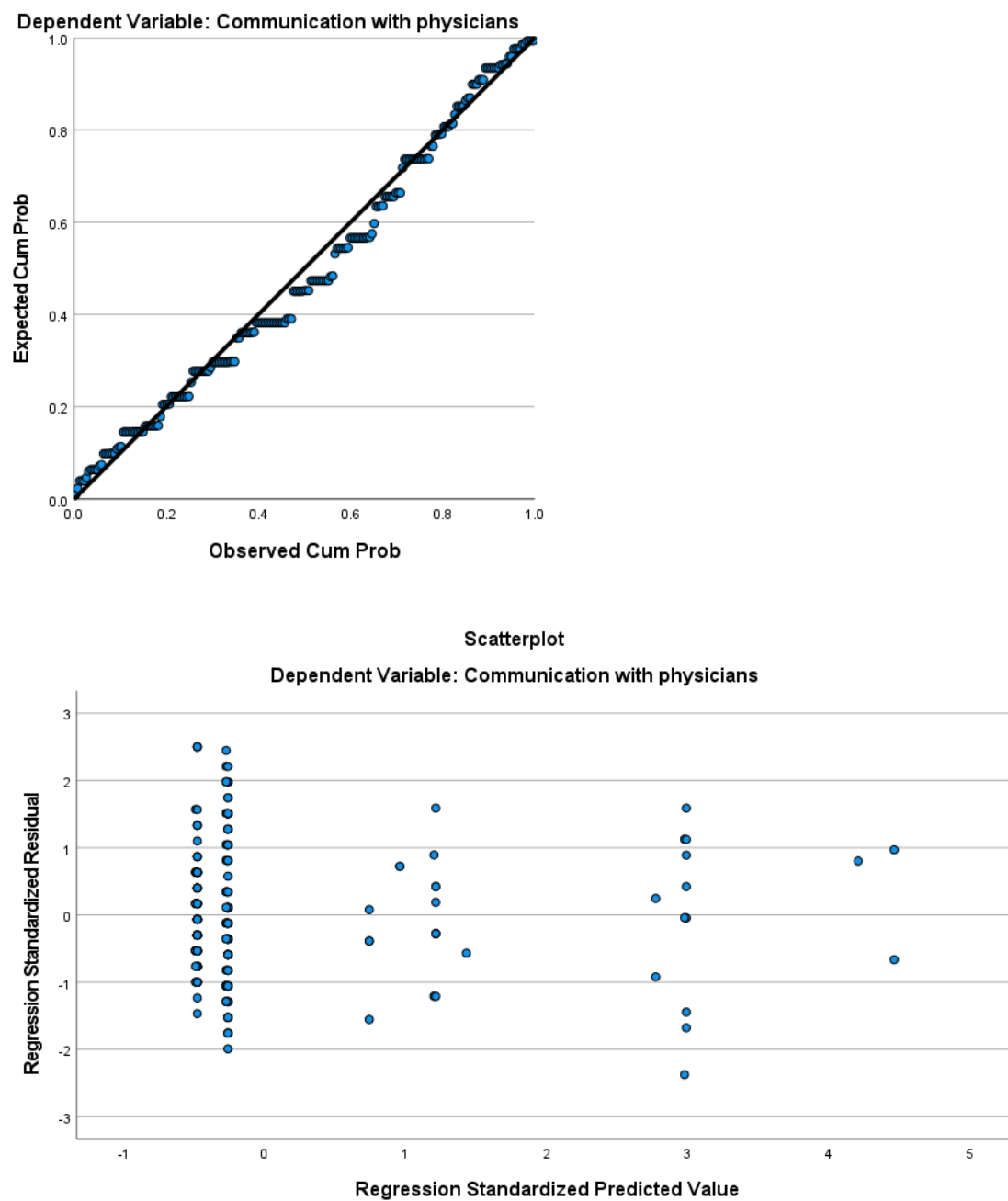
Figure C5

Distribution of Residuals for the Regression Responsiveness of Staff
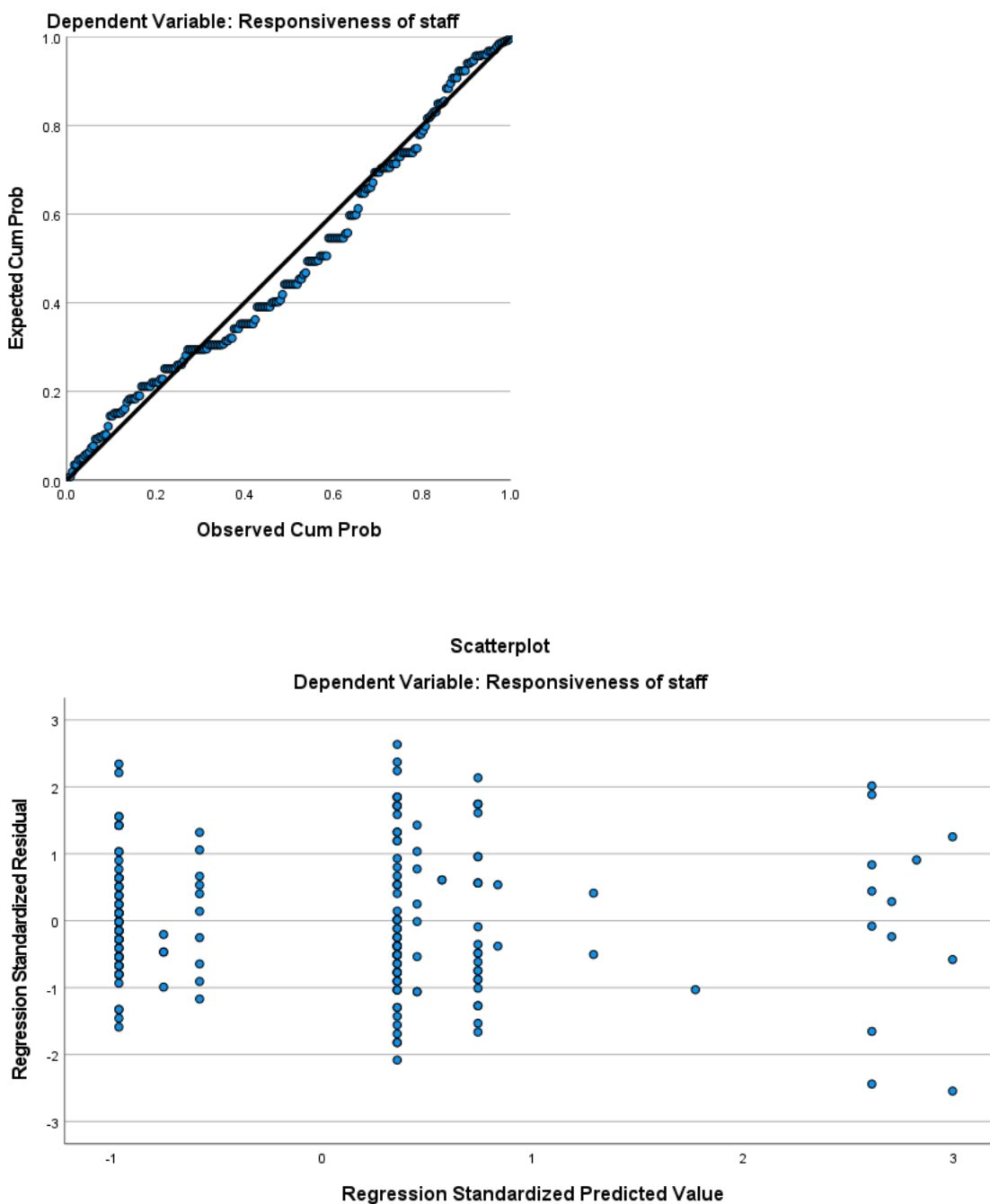
Figure C6

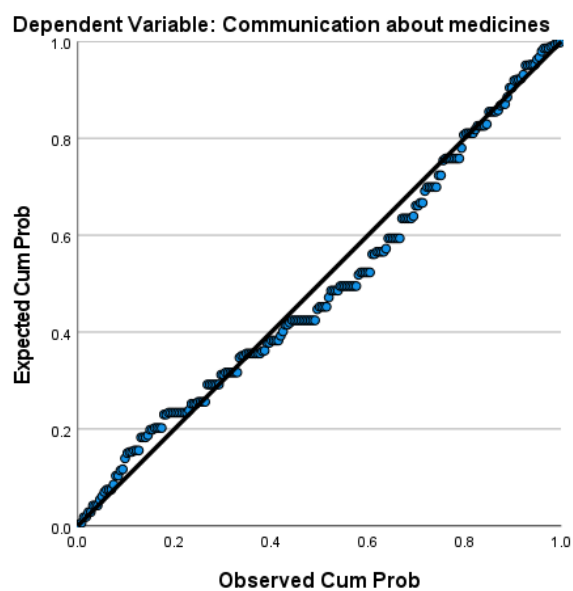*Distribution of Residuals for the Regression Communication About Medication*

Dependent Variable: Communication about medicines

Scatterplot
Dependent Variable: Communication about medicines
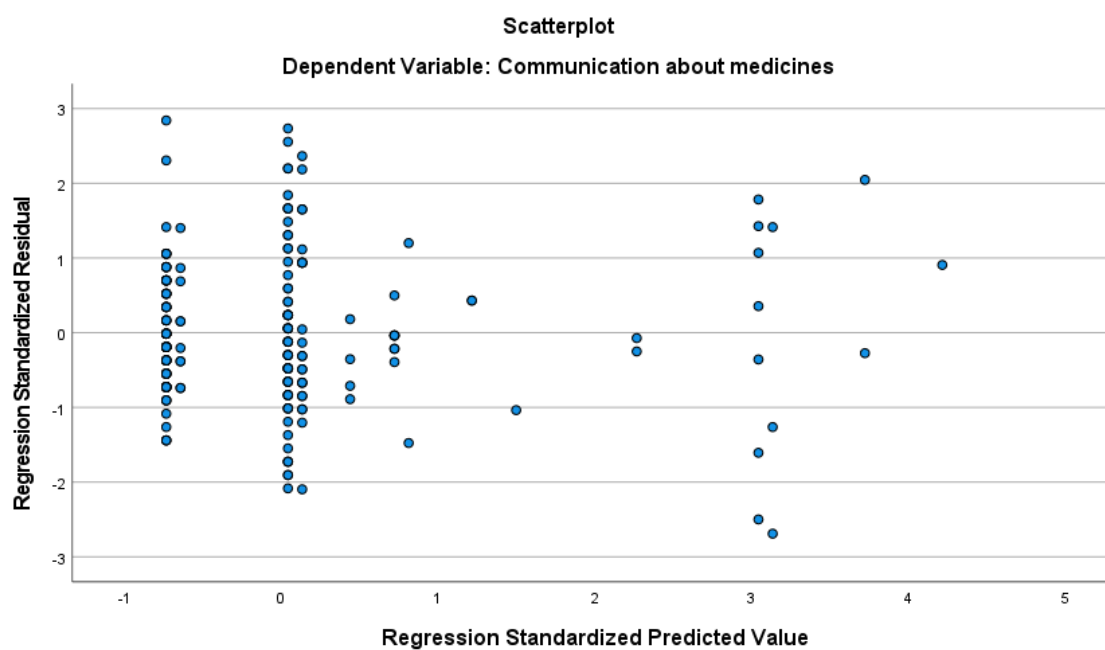
Figure C7

Distribution of Residuals for the Regression Discharge Information
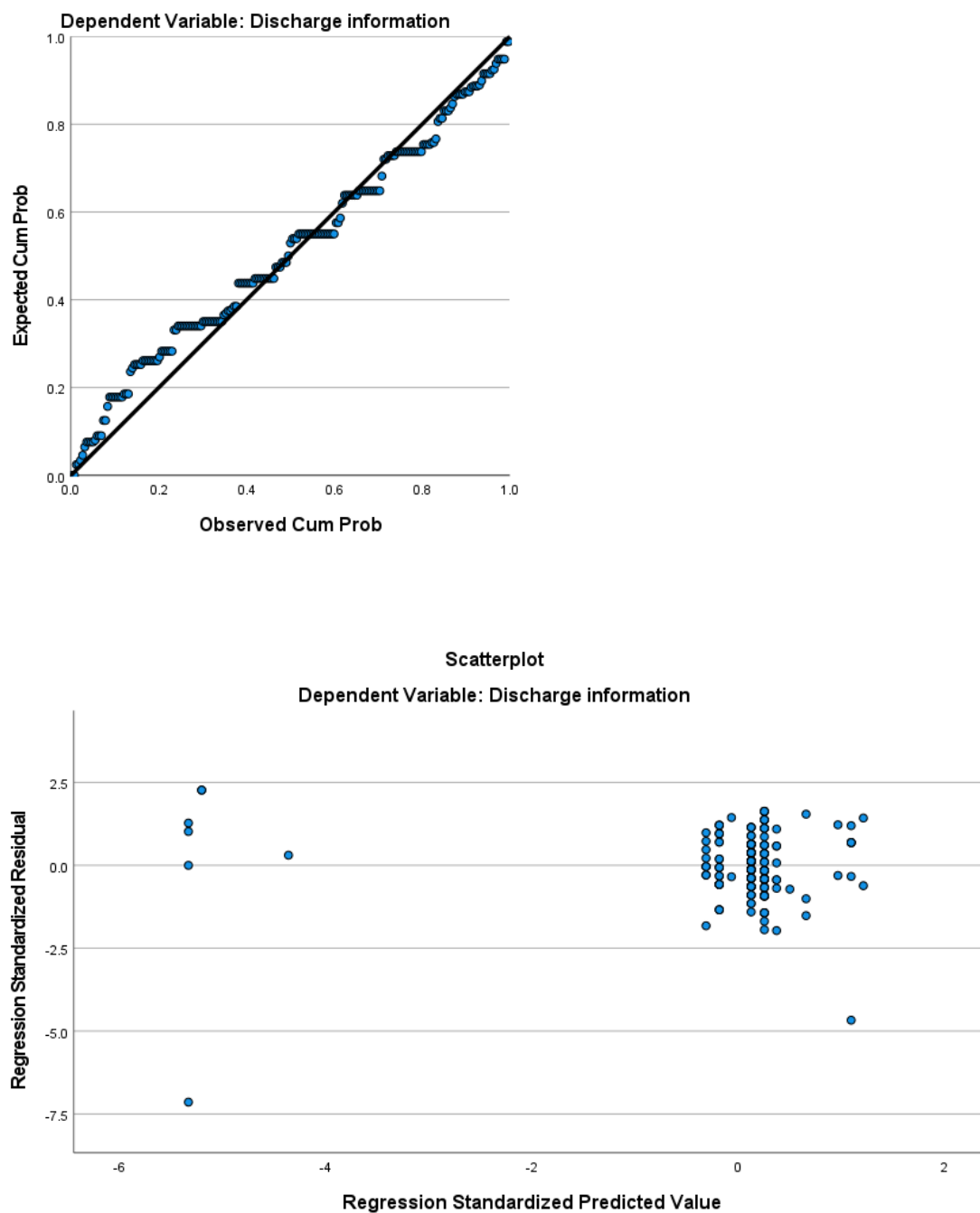
Figure C8

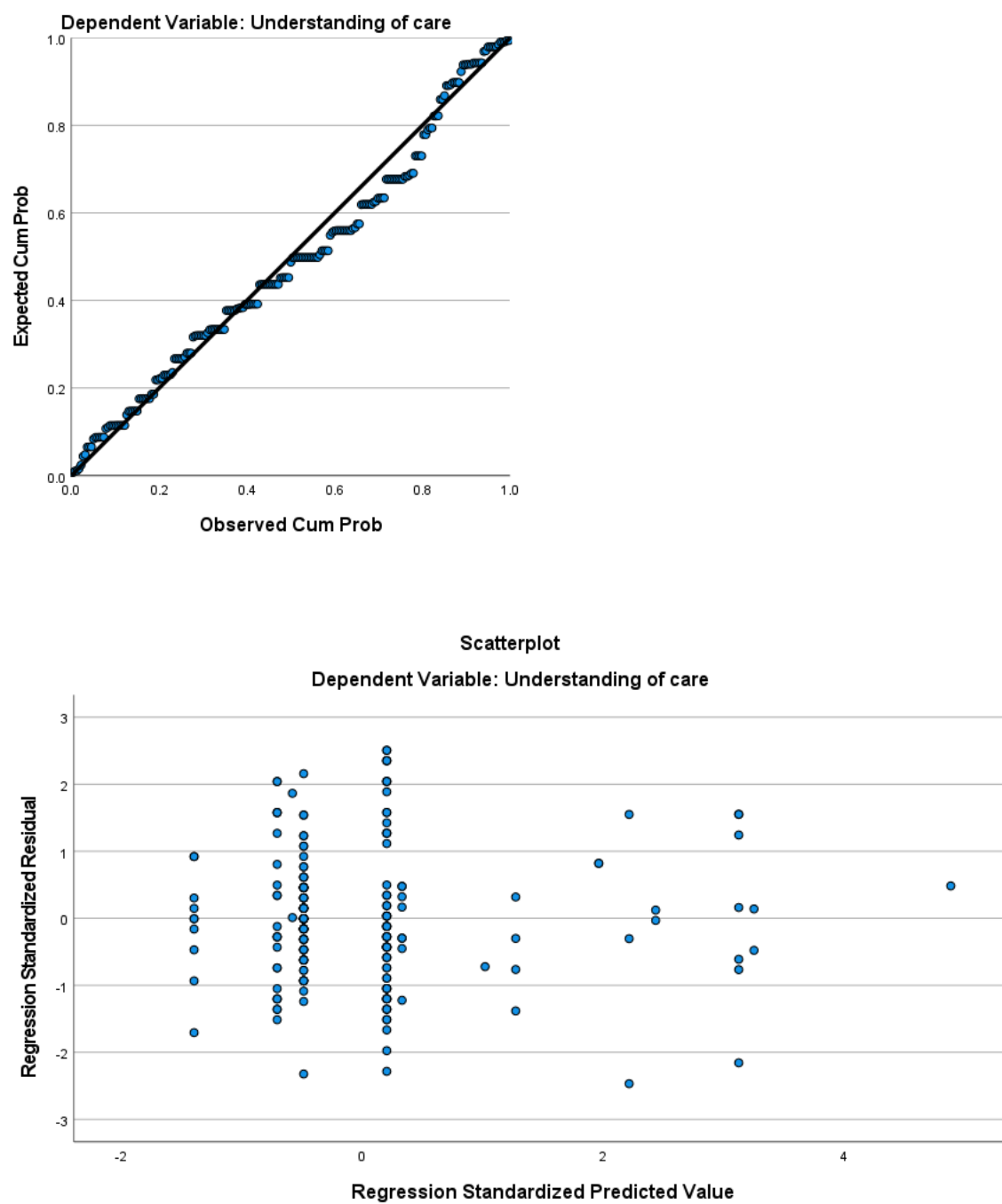*Distribution of Residuals for the Regression Understanding of Care*

Dependent Variable: Understanding of care

Scatterplot
Dependent Variable: Understanding of care

Figure C9

Distribution of Residuals for the Regression Cleanliness
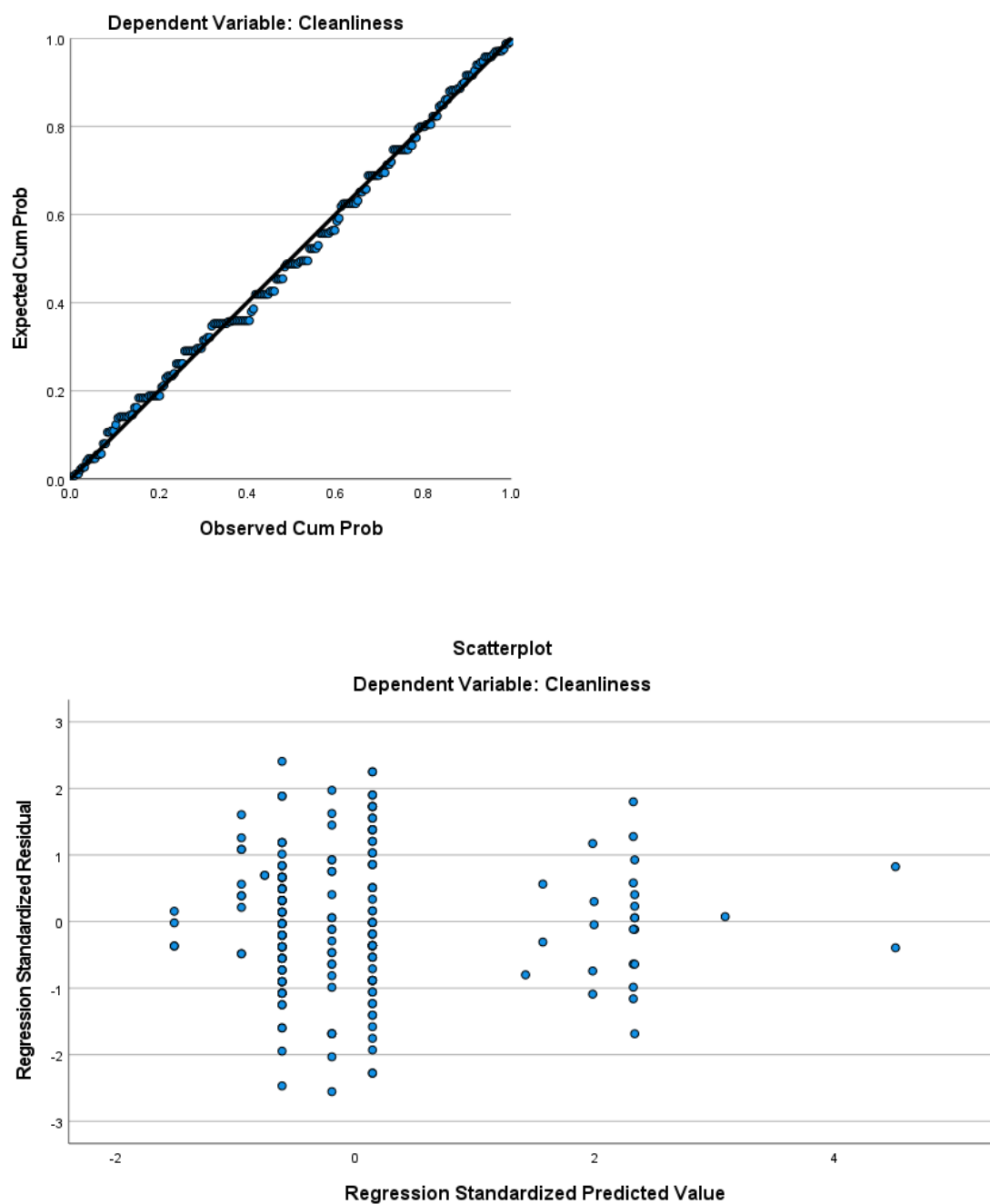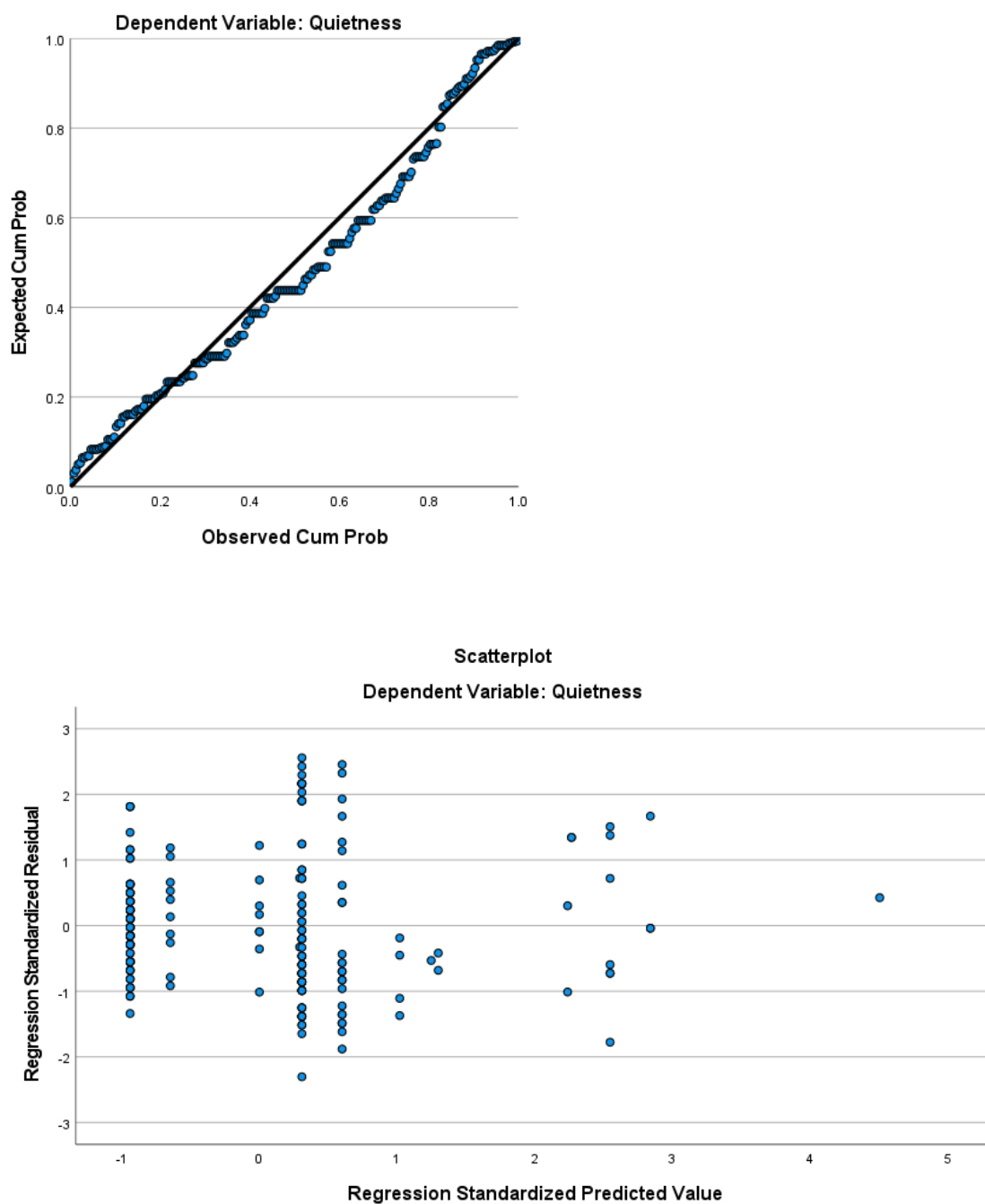
Figure C10

Distribution of Residuals for the Regression Quietness

Appendix D: IRB Approval

ABILENE CHRISTIAN UNIVERSITY
Educating Students for Christian Service and Leadership Throughout the World

Office of Research and Sponsored Programs
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103
325-674-2885

September 17, 2020

Lanean M. Lang
Department of Organizational Leadership
Abilene Christian University

Dear Lanean,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled
"The Relationship of Hospital CEO Gender and the Patient Experience: The Role of
Confounding Effects of Hospital Characteristics",

(IRB# 20-147   )is exempt from review under Federal Policy for the Protection of Human Subjects as:

☐ Non-research, and

☑ Non-human research

Based on:

This research does not involve interaction or intervention with living individuals; the information being collected is individually identifiable, but it is not private (occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, or provided for specific purposes by an individual and which the individual can reasonably expect will not be made public) [45 CFR 46.102(f)(2)]

If at any time the details of this project change, please resubmit to the IRB so the committee can determine whether or not the exempt status is still applicable.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs