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## The Relationship of Servant Leadership and Psychological Safety on Team Performance In Healthcare

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# Walden University

College of Health Sciences and Public Policy

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Amy Palmiero

has been found to be complete and satisfactory in all respects,  
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Walden University  
2022

Abstract

The Relationship of Servant Leadership and Psychological Safety on Team Performance  
in Healthcare

by

Amy Palmiero

MSHS, Cleveland State University, 2016

BA, Baldwin Wallace University, 2013

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Services and Leadership

Walden University

June 2022

## Abstract

Teamwork in healthcare is a dynamic and complex process where interdisciplinary individuals must come together to deliver high-quality patient care. Despite significant overall improvements in healthcare delivery, process failures and communication breakdowns continue to be problematic leading to inefficiencies within the healthcare system resulting in higher costs, and in some instances, preventable patient harm. An examination of the relationship between leadership, psychological safety, and team performance provides valuable insight on the importance of the role leadership plays in shaping psychologically safe environments and enhancing team performance. Using servant leadership theory as the framework for this study, a quantitative correlational approach was conducted to examine the relationship between psychological safety, servant leadership and team performance. A sample of 228 participants were recruited from 13 ambulatory clinics in a large healthcare organization in the northeastern region of the United States. The results show there is a statistically significant relationship between the three variables, with both leadership and psychological safety being predictors of team performance. These results provide a more dynamic view of the importance of leadership in fostering a sense of psychological safety within a team that can then be used to positively affect social change within the field of healthcare leadership practice. By enhancing team performance, both the team members and patients benefit by reducing team turnover as well as lowering healthcare costs and preventing unnecessary patient harm.

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## Dedication

This dissertation is dedicated to a few important people in my life. The first is my mother, Judith Kay Sarrett. My mother, Judith, passed away in a tragic car accident when I was seven years old, and her death came one week prior to her plan for starting her first job as a high school teacher after a long journey in pursuing her teaching degree at Baldwin Wallace College. Her passion for education is the gift and legacy she leaves behind that inspires me to continue my educational journey. On days when I wanted to give up, her legacy and memory along with knowing I would make her proud was enough to keep me inspired as I crossed the finish line. The other individuals I dedicate this dissertation to are my husband and my two children. Without their love, support and help in keeping life and the family unit progressing, my doctoral journey would not have been possible. I am grateful for these individuals and the inspiration they have given me daily on my doctoral journey.

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## Chapter 1: Introduction to the Study

### **Background**

Healthcare is a resource that will likely be used by most if not all citizens at some point within their lifetime (Sandhu, 2019). Healthcare is highly complex and interdisciplinary requiring teamwork to be a key constituent in how patient care is delivered (Neuhaus et al., 2019). The seminal Institute of Medicine report recognized the aspects of human error in its first publication “*To Err is Human*” (Kohn et al., 2000) which highlighted the important need for teams to work together effectively when delivering high-quality, patient care. Not only is teamwork critical for patient safety, but it is also necessary to drive an optimal patient experience within a healthcare system since healthcare organizations are filled with skilled, culturally diverse, and multidisciplinary individuals working together towards one unified, patient-centric goal (Davis, 2017).

Despite significant improvements in the healthcare system, most advances have focused primarily on inpatient versus outpatient settings, revealing an opportunity to examine teamwork in the ambulatory setting which has increasingly become more complex. Safety incidents occur in median of two to three incidents per 100 primary care visits. These incidents are the result of administrative and communication issues, missed or delayed diagnoses, and medication management errors resulting in a variety of significant consequences for patients (Singh & Carayon, 2020). Opportunities remain to examine factors that may improve outcomes within a complex interactive system such as ambulatory healthcare. Addressing these factors requires a broader awareness and

concentrated focus on preventing breakdowns that occur in teamwork communication and processes that often lead to inefficiencies within the healthcare system and in some cases preventable errors. While the overall aim in healthcare is to achieve quality patient outcomes, there are other associated complex elements involved in creating and fostering effective teams in which leadership influence has been known to play a critical role (Sandhu, 2019).

As healthcare faces ongoing challenges in reaching the overarching goals of quality care, healthcare leadership will act as a crucial element in addressing and leading through these challenges. One leadership model that is increasingly discussed in healthcare as a fitting model to address team-related challenges is servant leadership which focuses on serving the highest needs of others to achieve organizational goals (Greenleaf, 1977). Servant leadership aligns within the healthcare context as healthcare workers often put the needs of others first as part of their professional calling. While teamwork and leadership are both popular areas of research study, Braun et al. (2013) suggests there is more to be understood about each to drive effective outcomes in healthcare.

In addition to examining the correlation between leadership and team performance, the topic of psychological safety is also of interest to examine. Past studies performed by Edmondson (1999), Edmondson & Lei (2014), Edmondson et al., (2016), Wanless (2016), Wang et al. (2018) and Kim et al. (2020) have contributed empirical knowledge on the topic of psychological safety and its connection to team performance. The literature specifically describes psychological safety as a concept that embraces the

humanness of error. It promotes the idea that learning occurs more effectively and systematically amongst teams when individual team members feel comfortable discussing problems without the risk of retribution (Edmondson et al., 2016). However, with limited literature that is focused on leadership attributes and their relationship to psychological safety and team performance, future research, including this current study, is warranted.

As healthcare organizations strive to foster environments of open communication, improved team problem solving, and continuous improvement to deliver high quality care, the insight gained from this study aimed to broaden the knowledge base in the literature. Furthermore, this study aimed to address social change by providing a more dynamic view of the relationship that exists between servant leadership management styles, psychologically safe environments, and team performance within the ambulatory healthcare context. This dynamic view may provide healthcare leaders, researchers and educators with enhanced learnings that support the healthcare leadership field.

### **Problem Statement**

Teamwork is a critical concept and necessary in healthcare where multidisciplinary interdependent teams must work together to ensure optimized patient outcomes (Rosen et al., 2018). Teamwork in healthcare is required for positive patient outcomes, yet communication failures and process breakdowns continue to occur leading to poor patient experiences and in some cases poor patient outcomes due to process defects and medical errors. Medical errors make up one of the leading causes of death in the United States, of which many can be prevented (Centers for Disease Control, 2020).

Medical errors can be defined in several ways; however, regardless of nomenclature, approximately 400,000 patients experience some type of preventable event each year occurring from a convergence of contributing factors, many of which are related to breakdowns in teamwork, costing healthcare organizations billions of dollars (Rodziewicz et al., 2020).

As healthcare continues to face unprecedented stressors and complexities in delivering care, teamwork has become even more important and yet more challenging. High quality patient care will require diverse team members to work together, including clerical teams, clinical teams, and additional support teams such as quality, patient experience, and continuous improvement departments (Tannenbaum et al., 2020). The most recent COVID 19 pandemic is an example of how healthcare organizations must work together to ensure patient safety, quality care, and an optimal patient experience to drive the necessary policies and process that govern operations. As healthcare systems continue to focus on delivering high quality, patient-centric care, teamwork will continue to remain a critical element in how this care is delivered. Furthermore, there is an ongoing need to understand a variety of underlying, multidimensional layers that make up the constructs of team effectiveness (Braun et al., 2013). Driving teamwork in healthcare will require leaders who can inspire and empower teams to collaborate and deliver this care together.

### **Purpose of the Study**

The purpose of this study was to apply a quantitative correlational approach that examined the relationship between the servant leadership style of management,



psychological safety, and team performance within a healthcare ambulatory context. While there is some understanding of psychologically safe environments and a variety of studies have focused on leadership and teamwork, there is a gap in knowledge around what is known about the relationships between the three realms of leadership, psychological safety, and team performance. As leadership has been noted as the foundation for fostering environments of psychological safety and improved team performance (Edmondson & Lei, 2014), the need for examination of these triadic elements is further supported. Past research provides evidence of the many common leadership theories that have developed over time. Common theories include great-man, trait, situational, behavior, process leadership, transformational, transactional, and laissez faire (Khan et al., 2015). Further research has validated the complex interactions that occur in healthcare between leaders and their team members (Braun et al., 2013; Edmondson & Lei, 2014; Wang et al., 2018), and I assert that future studies focused on examining the relationship between leadership, psychological safety, and team performance will add useful insight to the literature that may further support healthcare leadership theory and practice.

### **Research Questions and Hypotheses**

The construct of leadership styles and psychological safety can be multifactorial especially as it relates to human interaction and experiences (Wanless, 2016). The first aim of this study was to examine if a relationship exists between psychological safety and team performance with a second aim to examine if relationships exist between each of the eight dimensions of the servant leadership style and team performance and the strength of

the relationships. This study further aimed to better understand the relationship that exists between all three variables including servant leadership, psychological safety, and team performance.

To examine if relationships exist, the main variables studied for correlations were servant leadership scores (independent variable), psychological safety scores (independent variable) and team performance scores (dependent variable). The servant leadership scores were scored individually in eight different dimensions to further examine the correlations that exist between each domain and team performance. Ten research questions and hypotheses were formulated for this quantitative study as follows:

Research Question 1: Is there a statistically significant relationship between psychological safety and team performance?

$H_01$ : There is no statistically significant relationship between psychological safety and team performance.

$H_a1$ : There is a statistically significant relationship between psychological safety and team performance.

Research Question 2: Is there a statistically significant relationship between the servant leadership empowerment dimension and team performance?

$H_02$ : There is no statistically significant relationship between the servant leadership empowerment dimension and team performance.

$H_a2$ : There is a statistically significant relationship between the servant leadership empowerment dimension and team performance.

Research Question 3: Is there a statistically significant relationship between the servant leadership standing back dimension and team performance?

*H<sub>03</sub>*: There is no statistically significant relationship between the servant leadership standing back dimension and team performance.

*H<sub>a3</sub>*: There is a statistically significant relationship between the servant leadership standing back dimension and team performance.

Research Question 4: Is there a statistically significant relationship between the servant leadership accountability dimension and team performance?

*H<sub>04</sub>*: There is no statistically significant relationship between the servant leadership accountability dimension and team performance.

*H<sub>a4</sub>*: There is a statistically significant relationship between the servant leadership accountability dimension and team performance.

Research Question 5: Is there a statistically significant relationship between the servant leadership forgiveness dimension and team performance?

*H<sub>05</sub>*: There is no statistically significant relationship between the servant leadership forgiveness dimension and team performance.

*H<sub>a5</sub>*: There is a statistically significant relationship between the servant leadership forgiveness dimension and team performance.

Research Question 6: Is there a statistically significant relationship between the servant leadership courage dimension and team performance?

*H<sub>06</sub>*: There is no statistically significant relationship between the servant leadership courage dimension and team performance.

*H<sub>a6</sub>*: There is a statistically significant relationship between the servant leadership courage dimension and team performance.

Research Question 7: Is there a statistically significant relationship between the servant leadership authenticity dimension and team performance?

*H<sub>07</sub>*: There is no statistically significant relationship between the servant leadership authenticity dimension and team performance.

*H<sub>a7</sub>*: There is a statistically significant relationship between the servant leadership authenticity dimension and team performance.

Research Question 8: Is there a statistically significant relationship between the servant leadership humility dimension and team performance?

*H<sub>08</sub>*: There is no statistically significant relationship between the servant leadership humility dimension and team performance.

*H<sub>a8</sub>*: There is a statistically significant relationship between the servant leadership humility dimension and team performance.

Research Question 9: Is there a statistically significant relationship between the servant leadership stewardship dimension and team performance?

*H<sub>09</sub>*: There is no statistically significant relationship between the servant leadership stewardship dimension and team performance.

*H<sub>a9</sub>*: There is a statistically significant relationship between the servant leadership stewardship dimension and team performance.

Research Question 10: Is there a statistically significant relationship between psychological safety scores and servant leadership scores on one's perception of high team performance?

$H_0$ 10: There is no statistically significant relationship between psychological safety scores and servant leadership scores on one's perception of high team performance.

$H_a$ 10: There is a statistically significant relationship between psychological safety scores and servant leadership scores on one's perception of high team performance.

### **Theoretical Framework**

The theoretical framework used for this study is based on servant leadership theory (SLT). In an essay entitled *The Servant as Leader*, Greenleaf (1970) shares his philosophy on servant leadership as one which promotes the need for leaders to focus on the needs of others. Greenleaf concluded in his work that true leadership emerges from those whose primary motivation is focused on a deeper desire to help others and emphasizes a holistic approach to work, a deeper sense of commitment to a community, and the ability to make decisions based on the power leveraged from others. The leader in this theoretical model is one who serves but also leads.

To build on Greenleaf's work, Patterson (2003) introduced a theoretical model of servant leadership based on the theory of virtue, explained as a qualitative characteristic that is part of one's character that exemplifies human excellence. Premised on moral

character, SLT seeks to frame attributes and behaviors of a leader in a way that encompasses love, humility, altruism, vision, trust, empowerment, and service.

Given the holistic nature of servant leadership, evidence has linked this style of management with a broad range of positive outcomes that connect to employee engagement, job satisfaction, and psychological well-being (Nathan et al., 2019). By design, servant leadership in practice has been found to unify teams helping members feel a sense of commitment to the organization which in turn drives team growth and collaboration to achieve the mission (Harwika, 2016). Servant leadership has a community building element which Spears and Lawrence (2016) found in their research to be essential in connecting empathy to organizational growth and employee commitment. As the mission of healthcare is to serve its patients through a multidisciplinary lens, SLT combines attributes and behaviors in practice which are aligned with driving positive patient outcomes. A more thorough explanation of this theoretical concept and its application and relevance to the study will be covered in Chapter 2.

### **Nature of the Study**

The nature of this study used a quantitative non-experimental correlational research design for primary data collection and analysis. Descriptive statistics outlining the data as well as demographics of participants are discussed and displayed in Chapter 4. A Kendall's Tau-b analysis was performed to understand correlations, and a multiple logistic regression was performed to understand the relationship between the two predictor independent variables and the outcome dependent variable. A Kendall's Tau-b

analysis was performed to first examine whether a correlation exists between psychological safety and team performance and second to examine whether relationships exist between each of the eight dimensions of servant leadership and team performance. A multiple logistic regression was performed to better understand the relationship that exists between a high perception of psychological safety, a serving leadership style of management and one's perception of high team performance. Understanding the servant leadership style of management and its eight domains as it relates to psychological safety and team performance may reveal new insight that bridges the gap in knowledge for what is not known or well understood about these relationships in ambulatory healthcare.

### **Definition of Terms**

Concise definitions for terms used are provided in this section to provide clarity of meaning and a better understanding of this study.

*Contingent reward:* A leadership style described as one that exhibits behavior and reinforces individuals for accomplishing the task at hand or the specific goal set for the task. The word contingent is used to describe the reinforcement exchange or reward that is given in fulfillment of the leader's expectations (Avolio & Bass, 1997).

*Idealized influence:* A leadership style described as one that generates trust and admiration in followers due to an approach that creates an ideal image whereby followers aspire to be like as they aim to identify with this image (Avolio & Bass, 1997).

*Individualized consideration:* A leadership style described as one that elevates and promotes a follower's realization of their own goals and aspirations as a close

relationship takes place and builds the understanding between leader and follower (Avolio & Bass, 1997).

*Inspirational motivation:* A leadership style described as one that inspires a follower to discover and live out their purpose as they work towards a shared vision and goal for all involved (Avolio & Bass, 1997).

*Intellectual stimulation:* A leadership style described as one where leaders question assumptions and inspire followers to rethink past values and explore new solutions and possibilities as they identify new problems (Avolio & Bass, 1997).

*Leadership:* Defined according to the Merriam-Webster Dictionary (Merriam-Webster Incorporated, 2020) as the office or position of a leader or one who has the capacity to lead or act in the instance of leading.

*Management by exception:* A leadership style described as one that exhibits behaviors that coerce followers and punish them for their errors (Avolio & Bass, 1997).

*Passive/avoidant leadership:* A leadership style described as one where correct behavior is employed through management by exception and outcomes and expectations are not always clarified (Avolio & Bass, 1997). This style has also been closely connected to the laissez faire style.

*Psychological safety:* The definition for this study describes psychological safety as a concept that accepts the humanness of error and is manifested as a state of being in which one feels comfortable sharing information and speaking up without fear of retribution or discredit to their image (Edmondson, 2019).



*Servant leadership:* A concept introduced by Greenleaf (1996) that promotes the philosophy that true leadership emerges from those whose primary focus is on meeting the needs of others.

*Shared governance:* The definition used in this study is adopting the description used in nursing units which is defined as the empowerment of nurses to be involved in making decisions and improving processes that drive achieved outcomes (Francis-Johnson et al., 2018).

*Teamwork:* Described in the literature, and applied accordingly in this study, as a group of individuals who work together to accomplish a shared goal (D'Angelo et al., 2019).

*Transactional leadership:* A leadership style described as one that influences followers based on a set of implied social exchanges or contracts. Contingent reward, management by exception and passive/avoidant all fall into this category (Avolio & Bass, 1997).

*Transformational leadership:* A leadership style described as one that encourages followers to think in newly inspired charismatic ways. Idealized influence, intellectual stimulation and individualized consideration are styles that fall under the transformational approach (Avolio & Bass, 1997).

### **Assumptions**

Information focused on leadership styles and how they foster psychological safety and team performance were examined with underlying assumptions that framed this quantitative study. The following assumptions were made:

1. Based on previous studies, there may be a correlation between a leader's style and environments where psychological safety exists which impacts team performance (Edmondson, 1999; Wang et al., 2018).
2. Participants in this study will feel comfortable answering the questions in the surveys in their current workplace. Upholding full confidentiality and using no personal identifiers for the organization nor for the collected participant's data will mitigate this assumption.
3. All participants will answer the questions in the surveys in an honest manner and to the best of their knowledge and experience.
4. The sample size of recruited participants will act as a broad representation of a general team population in ambulatory healthcare.

### **Scope and Delimitations**

The research problem in the study focuses on the breakdowns in communication and shared knowledge in healthcare organizations that could have otherwise resulted in learnings for improved teamwork and patient-centric care. The study allows for voluntary participation which is being offered to diverse departments and team members that work together towards an organizational shared goal to deliver high-quality, patient-centric care. Allowing for diverse team members to be enrolled in the study enhances the credibility and trustworthiness of the results by providing an unbiased randomized sample size to represent a broader population of study in healthcare.

Although the intricacies of leadership roles have been largely unexplored, past studies grounded by leadership theory have evidenced the influence leaders can have on

followers (Guhr et al., 2018). While the focus of this study is specific to healthcare, other industries may benefit from these results as they may be generalizable for a broader population where leaders and team members are expected to interact closely to deliver high quality outcomes.

### **Limitations**

Surveys were used in this study as the data collection tool. Although it is assumed that participants will be honest and answer the surveys to the best of their knowledge and experience, one limitation to survey research is that they capture only the perception of the participant. An additional limitation in the study related to the variable of psychological safety scores. Although there may be other variables deep rooted in psychology that affect whether one feels psychologically safe in their environment, those variables were not being studied specifically in this study as the definition of psychological safety is being used in accordance with Amy Edmondson's (2019) definition, as noted in the definition section.

### **Significance**

Healthcare services are something every citizen will need throughout his or her lifetime. In the United States alone, it is estimated that approximately 85% of the population has at minimum, one healthcare encounter annually, and many individuals have several (Rosen et al., 2018). Whether it be a single visit or multiple at an ambulatory facility, or a hospitalization encounter requiring more extensive interdisciplinary care, teamwork and the processes that govern within a complex healthcare delivery system are critical to positive patient outcomes. Understanding how the different dimensions of

servant leadership relate to psychological safety and team performance will bridge the gap in knowledge for healthcare workers, leaders, educators, and researchers aiming to better understand the dynamics of leadership attributes applied in an ambulatory healthcare setting. The insight gained may have positive implications for social change within healthcare leadership practice by providing a more dynamic view of the relationship between leadership, psychologically safe environments, and team performance. Additional contributions to social change may include the advancement of future leadership theory and training.

### **Summary**

Chapter 1 of this study provided background information on the important topic of teamwork in healthcare. It also addressed the problem of poor patient outcomes and experiences due to communication failures, breakdown in processes, and the lack of shared knowledge that often occurs from ineffective teamwork (Mayo & Woolley, 2016). Ten research questions and hypotheses were presented that focus on examining the relationship between servant leadership scores (and its eight dimensions), psychological safety scores, and team performance scores. Furthermore, a gap in the literature was established. This gap revealed there are scarce studies evidencing the multidimensional layers and interdependent relationship that exists between leadership and environments of psychological safety, and how they relate to team performance, suggesting my study was warranted (Edmondson & Lei, 2014).

The significance of the topic was presented with implications for future knowledge and social change that may come from the study. Furthermore, I noted that the

knowledge gained from this study may help leaders, educators, and researchers apply this insight to advance the field of leadership theory and practice within healthcare environments. Chapter 2 of this study will provide a more thorough review of the literature associated with the importance of teamwork, the concept of psychological safety, and the important role leadership plays in the healthcare environment. Additionally, a thorough review of the theoretical framework of SLT will be provided in support of this study.

## Chapter 2: Literature Review

The purpose of this study was to apply a quantitative correlational approach that examined the relationship between the servant leadership style of management, psychological safety, and team performance within a healthcare ambulatory context. This literature review discusses the criticality of teamwork in healthcare to deliver quality, patient-centric care, and the importance of creating psychological safety in environments where learning from past failures is vital to the organization's mission. An assessment of leadership theories is shared along with a comparative analysis for common styles, and a framework for servant leadership and its various dimensions are outlined.

Collaborative and cohesive teams are necessary in many organizations to achieve goals and are especially critical in large organizations. Across healthcare, there is an increasing need to enhance team-based approaches, particularly for those in leadership positions, as multidisciplinary team members must work collaboratively to deliver quality care and an optimal patient experience (Mayo & Woolley, 2016). Continued failures in communication, along with breakdowns in process and a lack of shared knowledge, continue to be problematic in the multidisciplinary team environment. Leaders have an opportunity to improve efficiencies that lead to higher performing teams and should make teamwork performance a focus. With an emphasis on ways in which healthcare teams can better communicate and collaborate to drive positive patient outcomes, the topics of psychological safety and leadership emerge.

An area of study related to teamwork is the concept of psychological safety. The literature specifically describes psychological safety as a concept that embraces the

humanness of error. It promotes the idea that learning occurs more effectively and systematically amongst teams when individual team members feel comfortable discussing problems without the risk of retribution (Edmondson et al., 2016).

Psychological safety can also be defined as the comfort level one feels to take interpersonal risks to speak up about concerning issues or situations of uncertainty without fear of how they will be perceived, both socially and intellectually, within a particular context such as their workplace (Edmondson & Lei, 2014).

An additional area of study related to teamwork and psychological safety is leadership. Research by Albritton et al. (2019) and Aranzamendez et al. (2015) evidence the critical role leaders play in promoting psychological safety in teams, especially teams that drive quality outcomes. Tannenbaum et al. (2020) found in their research that leadership plays a critical role in driving team performance through the process of improvement and learning through established environments where psychological safety exists. Although the concept of psychological safety is accepted and to some degree understood at a macro level, it has been more difficult to understand at a micro level which is where the interpersonal interactions and behaviors occur (Rosenbaum, 2019). Given this lack of knowledge, there is a need to examine the variables involved in these interpersonal interactions and behaviors and the leader influences that shape psychologically safe environments to better understand what can drive successful team outcomes (Wang et al., 2018). One mixed method study in the literature identified a direct association to higher risk patient scenarios due to poor collaboration, communication, and a lack of shared mental models amongst team members (O'Connor

et al., 2016). This makes psychologically safe environments and leadership critical to the mission in healthcare to drive positive patient outcomes and an optimal patient experience.

Environments perceived to be psychologically safe support more open and transparent conversations that lead to higher organizational learnings due to people feeling comfortable speaking up (Edmondson, 2019). Speaking up can include asking questions in times of uncertainty or sharing knowledge around experiences that drive the learning process even though this may pose a risk to one's image or reputation. Without the presence of psychologically safe environments, often these learnings cannot be realized collectively which may prevent teams from gaining a broader perspective of ways in which they can improve upon the delivery of care as a team. Therefore, understanding the relationship between leadership styles, psychologically safe environments, and team performance becomes a central focal point relevant to the problem being studied. The following sections in this chapter provide an overview of the literature review strategies used, an overview of the theoretical foundation that supports this research study, as well as a more robust review of the literature as it relates to key concepts and variables presented in this study.

### **Search Strategies**

There is scarce evidence in the literature that supports the relational elements of all three topics being studied collectively including leadership, teamwork, and psychologically safe environments. A search of peer-reviewed articles from several databases including Google Scholar, Thoreau Multidatabase Search, PubMed, EBSCO,



and ProQuest was performed using the aforementioned words individually, which resulted in hundreds of thousands of articles being delivered. In this extensive search, over 65,000 articles were published on leadership, over 10,000 articles were on teamwork and approximately 3,000 articles were published on psychological safety alone between the years of 2014 and 2020. A more narrowed search using word combinations including *leadership styles*, *psychological safety*, and *team performance* delivered over 50,000 articles between 2015 and 2020; however, since the aim of this study was to use articles that focus on the triadic relationship of all three topics in the healthcare industry, the review was narrowed down to only those that were relevant in supporting this study. All peer-reviewed articles were within five years of when this study began in 2019 and were given priority. Although some articles are older than five years, they are used for historical context and in support of historical learnings over the years.

### **Theoretical Foundation: Servant Leadership Theory (SLT)**

The theoretical foundation used for this study was rooted in leadership theory in which the framework of SLT grounded the study. SLT originated with Robert K. Greenleaf (1970) who propounded the philosophy that putting the needs of others before your own advances an organization through the emergence of authenticity. SLT was not meant to be an oxymoron but rather an intentional term to demonstrate that a leader can both serve and lead. SLT was first conceptualized as a modern concept to overcome organizational leader toxicity. This theory further promotes the idea that a leader's power is gained not through an exertion of it but rather through a relationship that is built with followers based on trust and respect for each other (Greenleaf, 1970). The original

conceptualized model yielded five elements that included altruism, emotional healing, wisdom, persuasive mapping, and organizational stewardship.

Russell (2016) further defined servant leadership in his study as a way of life which begins with the natural feeling to put others first. This definition aligns with the philosophy of healthcare organizations whose mission is to advance and promote the health and welfare of others. Both Spears (2016) and Greenleaf (1970) posit that a servant leader aims to strengthen the organization through authenticity and fostering an environment where the largest voluntary actions come from the team in support of the organization's goals. Spears (2016) further posits that servant leadership demonstrates the ethical nature of the leader which in turn fosters teamwork where individual members do the right thing at the right time which enhances the effectiveness of the organization aiming to achieve their mission.

Patterson (2003) further expanded on this conceptual model of servant leadership and developed a theoretical model which focuses on ethics, morality, and virtues. Patterson posits that virtues are qualitative characteristics that can be spiritual in nature and reside internally within oneself with an aim to achieve human excellence for the good of an organization and its followers. The elements congruent with this theory are love, humility, altruism, vision, trust, empowerment, and service. Patterson further posits that servant leaders seek to honor people and are genuine, appreciative, active listeners, good communicators, and act with empathy in a dynamic environment of team interactions.

To expand on the elements of SLT, Patterson (2003) postulates that love is associated with a moral love where a leader does the right thing at the right time and for

the right reason. Patterson further explains humility as a paradoxical concept in that the leader is not viewed as being meek or confidence-lacking but rather the leader does not overestimate their own merits or power and places the focus on other's accomplishments. Altruism is explained as the desire to help others just for the sake of helping them, and vision refers to the servant leader's ability to act in the best interest of the organization's vision of success.

Patterson (2003) emphasizes that trust is a building block of servant leadership and a strong element that nurtures teamwork which goes hand in hand with empowerment and service. Trust is a critical element in creating environments of openness where team members feel comfortable speaking up and having a voice in driving positive outcomes. Additionally, trust is a building block for empowerment. When people feel empowered to drive organizational success and trust that they are safe to speak up for the good of the organization, a deeper level of learning and collaboration occurs which impacts the organization in a positive way. This model of trust and empowerment embody the spirit of a servant leader which drives team members to want to serve which is the foundational element of SLT.

As leadership theories have advanced in the 21<sup>st</sup> century, SLT has evolved as it has gained popularity in research and application. Van Dierendonck and Nuijten (2011) expanded on this theory through their research to build a valid and reliable instrument of measure whereby servant leadership attributes could be quantitatively measured. Recognizing that leadership plays a key factor in organizational success, the research by Dierendonck and Nuijten aimed to advance SLT as one that is ethical and people centric.

SLT is now widely recognized as one with behavioral oriented complexities that focus on the leader-follower relationship.

Van Dierendonck and Nuijten (2011) postulate in their research that eight valid dimensions of servant leadership emerge including empowerment, accountability, standing back, humility, authenticity, courage, forgiveness, and stewardship. The authors describe empowerment as a motivational concept which aims to give followers a sense of personal power where information-sharing and innovation happens due to the involvement and participation of everyone in an open environment of trust. Accountability is focused on ensuring followers know exactly what is expected of them and are held accountable for things they can control. Aligned with Patterson's (2003) argument that servant leaders who are humble should not be viewed as meek, the accountability dimension promotes the element of leading in the servant leader model. Standing back is a dimension that describes the ability of the leader to retreat into the background when the team has performed a task or is performing it without the need for help. The leader only steps in as a coach when needed.

Van Dierendonck and Nuijten (2011) describe humility as the ability for leaders to actively seek the voice of others recognizing their own limitations to knowing and understanding everything. Aligned with Patterson's (2003) model, a humble leader limits the showcasing of their own accomplishments to promote another's. Authenticity relates to the leader being true in their own self-expression, and courage is about taking risks to challenge organizational assumptions and promote innovative strategies to solve old problems using new methods. Demonstrating the ability to be authentic and courageous

allows followers to emulate this in their environment which fuels collective intelligence. Forgiveness is described as the ability to experience what others feel through empathy and let go of grudges. Stewardship is described as the willingness to act in the best interest of the organization. Leaders exhibiting stewardship act in socially responsible ways and are role models for other members of the organization.

To expand on SLT further and relate it to this research study, SLT supports the idea that team members who are in environments where servant leadership is demonstrated begin to emerge as servants of their work in achieving the organization's mission. In healthcare, an environment fostered by a servant leader creates a culture of trust, openness, and empowerment where collective intelligence emerges because of team members feeling comfortable speaking up and empowered to address problems where key learnings are shared. When team members recognize humility and authenticity in their own leader and feel empowered to speak up, these collective traits foster psychological safety. Psychological safety in turn fosters problem solving through knowledge-sharing, and learning occurs over time. Learning from failures in communication and process breakdowns create the opportunity for future improvements aligned with achieving the goal to serve patients and deliver high-quality care (Edmondson et al., 2016).

A person's superior cognitive capacity is an instinctive factor that drives how one behaves based on experiences, and it is these experiences that shape one's future behavior (Bandura, 1971). Since team members are consistently observing their environment and the interactions between leaders and followers, servant leaders have an opportunity to

drive positive team interactions through their own actions, impacting how teams collaborate, learn, and improve upon their service. Given the dynamics of this leader-follower exchange, SLT supports the need to understand the relationship between leadership, psychological safety, and team performance.

### **Teamwork**

As the science of teamwork has progressed significantly over the last century, the learnings associated with team composition, construct and how teams think, feel, and interact has heightened (Salas et al., 2018). Teams are necessary in many industries and are becoming commonplace in most organizations making it vital to understand the underlying complexities that exist in diverse team settings. Salas et al. posit that organizations have long recognized the important synergy gained through the collectiveness of the team versus the tasks of one individual. Since healthcare is an industry where diverse stakeholders and multiple disciplines collaborate, it is an industry that exemplifies how the prominence of the team's synergy is critical to a positive patient experience and overall quality outcomes.

Teamwork in healthcare is widely known for being a highly dynamic process where groups of interdisciplinary professionals must exercise a concerted effort to blend various backgrounds and skillset for the benefit of the patient. With interdisciplinary teams collaborating toward a common goal in healthcare, it is common for conflict to occur amongst team members as part of the dynamic process of humans working together in a stressful and complex environment. Research conducted by Cullati et al. (2019) explored the perceptions and experiences of intra-professional teams and noted that

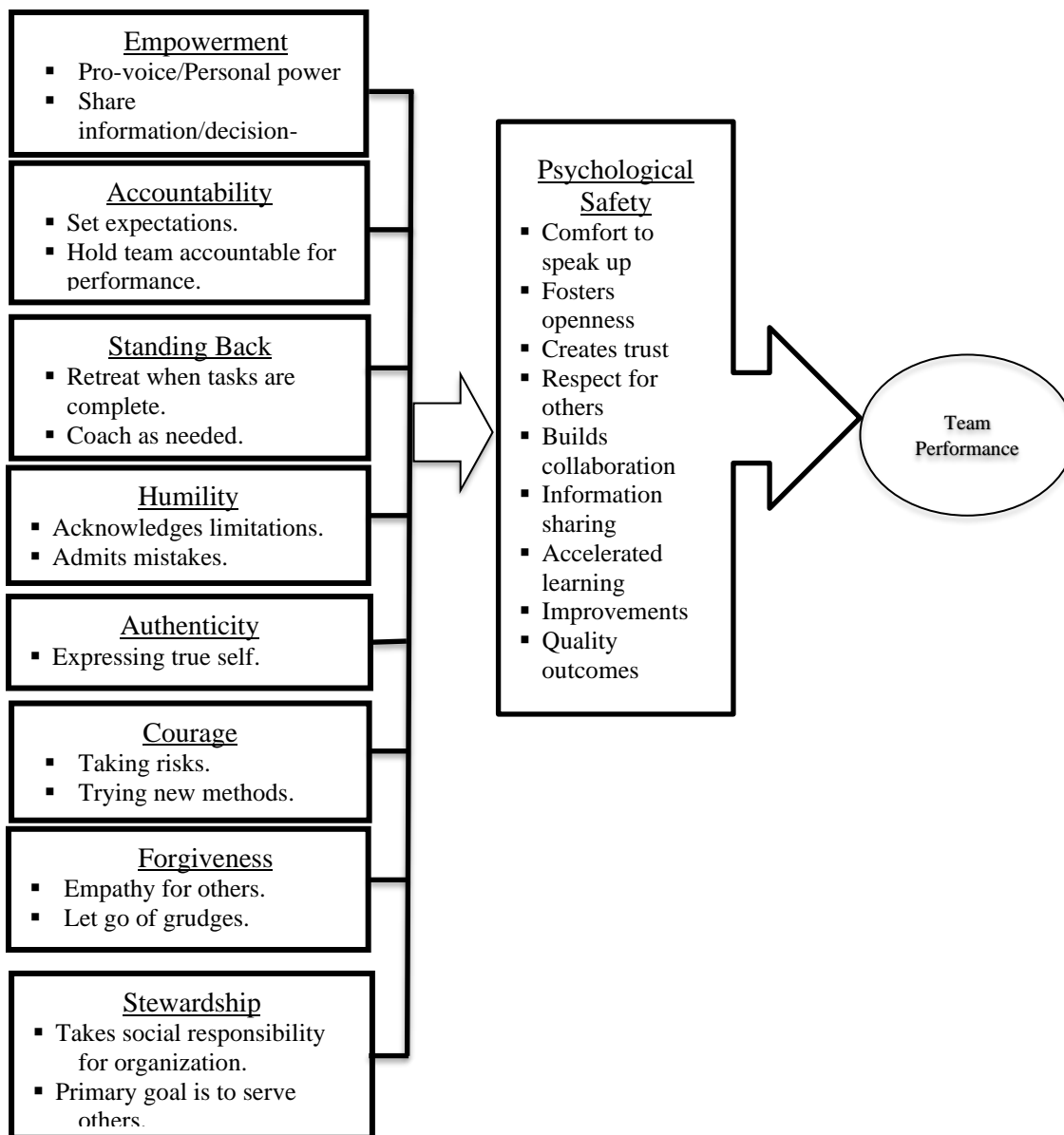
conflict and the inability for teams to work effectively together directly threatened the quality of patient care. Eichbaum (2018) argues in his research that while conflict directly threatens effective teamwork, it has the potential to increase patient quality outcomes if mediated correctly through leadership. This mediation requires leaders to foster psychologically safe environments where key learnings from mistakes are shared. Servant leaders who act out of love and empathy can build trust amongst the team. This trust further empowers team members to speak up which potentially can foster environments of conflict eliciting it into something innovative for the good of the organization and the patients in which they serve.

Dinh et al. (2019) explains teamwork as a composition of multi-level factors made up of team interactions in which mediators are the intervening influences that transmit interactions to outputs, otherwise known as team performance. Schot et al. (2018) posit that interpersonal processes of interaction require relationship management between team members where positive behavior is promoted by leaders employing empowerment amongst the team. This empowerment promotes communication, information sharing and active contributions of inter-professional healthcare workers and becomes a contributing factor to team performance.

Hoogeboom and Wilderom (2019) share in their study that participative team interactions were found to positively correlate to a higher level of information sharing which subsequently led to improved teamwork. These findings evidence the important role information sharing and communication play in the dynamic team building process. The important role of servant leadership is further emphasized as the attributes of this

leadership type may play a role in mediating the relationship between psychologically safe environments and team performance. The model of the relationship between the eight dimensions of servant leadership, psychological safety and team performance is shown in Figure 1.



**Figure 1***Eight Dimensions of Servant Leadership*

## **Psychological Safety**

The topic of psychological safety is not widely understood to date, and a review of the literature reveals there is scarce information that evidences its connection to leadership and team performance. However, the empirical research of Edmondson (1999), Edmondson and Lei (2014) Edmondson et al. (2016), Wanless (2016), Wang et al. (2018) and Kim et al. (2020) has given us a broader foundation of knowledge for psychological safety and its environmental impact in many industries, especially in healthcare. Edmondson (1999) defines psychological safety as a shared belief where teams perceive the environment is safe for taking interpersonal risks. In a psychologically safe environment, teams feel comfortable speaking up to ask questions about uncertainties or discuss problems and mistakes that happen without the fear of retribution or reputation. The benefit historically realized from environments where psychological safety exists is the organizational learning that occurs through information sharing and continuous improvement (Edmondson & Lei, 2014).

## **Organizational Learning**

Organizational learning (OL) is a concept that has been studied throughout the decades with varying definitions. These collective variations can be summarized to interpret OL as a process where organizations establish a knowledge base through past actions and develop new insight based on the effects and outcome of those actions (Patky, 2020). Learning from failures in psychologically safe environments is imperative at the individual and organizational level and has become widely accepted as a critical path to innovative growth (Edmondson & Lei, 2014). Psychologically safe environments

foster openness, trust, and empowerment (Eichbaum, 2018) which further enable team performance because of the learning process that takes place. When collective learning is realized, all levels of the organization benefit (Edmonson & Lei, 2014).

### **Learning in Psychologically Safe Environments**

Psychologically safe environments facilitate learning by providing a structured environment where the focus is on openness, transparency and collective problem solving versus blame, shame, and retribution. Psychologically safe environments are particularly relevant in complex environments such as healthcare, where high reliability is the goal for interdisciplinary teams that carry out knowledge-intensive tasks. Psychologically safe environments can foster organizational learning by transforming culture. This transformation leads to the examination of problems using a systemic approach to understand where breakdowns and communication failures occur (Edmondson & Lei, 2014). Learning from failure is the roadmap to improving process.

In a study conducted to assess the impact of psychological safety, Torralba et al. (2016) revealed findings that show psychological safety is highly correlated to increased team engagement and quality system improvement. An international observational study for a newly formed team in Ghana found that psychological safety acted as a mediator between team leadership and learning behaviors and concluded that both psychological safety and learning behavior are key for newly formed quality improvement teams (Albritton et al., 2019). These studies further evidence the relationship that may exist between leadership, psychological safety, and team performance.

## **Psychological Safety and Employee Empowerment**

As the structure and delivery of healthcare in the 21st century and beyond becomes more complex, the need for psychologically safe environments, where collaboration and teamwork are intentional, will increasingly be needed to provide high reliability within healthcare organizations. Empowering employees to exercise their voice through avenues such as shared governance, for example in nursing units, and the implementation of organizational-wide kaizen systems may promote and sustain psychological safety. These avenues offer a structured process for individuals to share their voice and problem solve in collaborative ways that lead to key learnings and improvements.

The need for psychologically safe environments in healthcare is further supported by the simulation research conducted by Kang and Ling (2019) which evidenced findings of thematic feelings experienced by new nurses. Although these feelings can be experienced by many individuals working in healthcare, the themes in this study exemplify how the participants felt unready for complex patient care. These feelings were described as anxiety and worry around possible mistakes in their field whereby overall teamwork could be compromised. Leaders who exhibit attributes of empathy, courage and empowerment may potentially mitigate these types of feelings experienced in healthcare organizations.

Xue et al. (2020) suggest that leadership is the contributing factor in building pro-voice and subsequently better knowledge sharing and improved teamwork over time. Research by Kim et al. (2020) presents findings on the relationship between

psychological safety and pro-voice and suggests team performance is enhanced when team members feel empowered to exercise their voice in times of uncertainty or when knowledge-sharing is necessary to avoid future systemic breakdowns. Given these findings, leadership styles that promote empowerment may be viewed as leaders who embrace openness, foster trust and respect for others and ultimately enhance team performance.

### **Communication in Psychologically Safe Environments**

Communication in psychologically safe environments can be viewed as the foundational essence of what drives improvement. In fact, communication failures have historically been identified as the root cause of 70% of sentinel events (Joint Commission, 2019). Patient safety experts from a variety of hospitals agree that communication and teamwork are essential for driving quality patient care. When clinical and non-clinical staff collaborate effectively, it leads to less errors, improved efficiency, improved patient outcomes and increased patient satisfaction (Bhatt & Swick, 2017). Although emphasis has been placed on improving communication in healthcare over the decades, there is a continual need to foster communication using a systematic approach. This approach should be one that builds psychological safety into the process so that collaborative organizational learning occurs more efficiently (Carayon et al., 2018).

Since collaborative learning does not always happen naturally in healthcare, improved communication will require structured avenues to collaborate and learn together. Furthermore, creating and fostering psychologically safe environments where this communication can safely and intentionally happen will require effective leadership.

Edmondson et al. (2016) argue that leadership plays a critical role in creating and fostering psychological safety and will be the catalyst to the engagement of teams in quality improvement work. With healthcare being multidisciplinary and increasingly becoming more complex, the need for team-based approaches as well as effective leaders to govern these approaches will be necessary.

### **Leadership**

As the healthcare environment continues to experience unprecedented change and associated underlying complexities, it is vital for health care leaders to continually search for ways to drive an exceptional patient experience and exemplary patient care (Rosen et al., 2018). An area of focus important to address is the connection between leadership styles, psychologically safe environments, and team performance in a healthcare environment (Nembhard & Edmondson, 2016).

Leadership has long been studied through the decades and has been an evolution of discovery in humanness. A recent comprehensive literature review exploring the many faces of leadership (Muhammad & Anwar, 2018) evidences several research studies that present leadership through the lens of historical advancements in human civilization (Sarachek, 1968), the advancement of trait and skills in ordinary people (Clawson, 2003) and overall leadership as a dynamic process of leader-follower interaction (Northouse, 2009). Goethals et al. (2004) share that while the concept of leadership is widely discussed, there is still a lack of mutual understanding around leadership styles and what is most appropriate for any given context.

Sfantou et al., 2017 concluded in their recent literature review that effective leadership is an essential element to promoting patient quality care. There are many common leadership styles that have developed over time. These styles include great-man, trait, situational, behavior, process leadership, transformational, transactional and laissez faire (Khan et al., 2015). Sfantou et al. point out that six common types of leadership emerge in popularity and include transformational, transactional, autocratic, laissez-faire, task-oriented and relationship-oriented. Of these six styles, the three most widely known and tested in the literature are transformational, transaction and laissez-faire (Avolio et al., 2004).

As an expansion to previous leadership styles, an additional style that has emerged and evolved through the decades is servant leadership. Coined initially by Greenleaf (1970) as a theoretical concept, SLT has evolved over the years through the work of Graham (1991), Spears (1995), Sendjaya et al. (2002), Patterson (2003), Barbuto and Wheeler (2006) and most recently van Dierendonck who constructed a valid and reliable instrument of measure to assess eight different dimensions of servant leadership described as empowerment, accountability, standing back, humility, courage, authenticity, forgiveness and stewardship.

Greenleaf (1970) posits in his original work that essential characteristics are exhibited in one who is identified as a serving leader. These characteristics focus on healing, service to others and the ability to lead, influence and persuade through communication in common language. Additional characteristics include foresight, active listening skills, leading with empathy, ethical-based values, and the ability to establish

trust through the authority and power they gain through an altruistic goal to serve others. It is through these characteristics that serving leaders act as role models, establishing relationships with their followers and leading teams to achieve the organization's goals through their ability to grow people and build a sense of community amongst followers.

Serving leaders are often seen as humble and caring individuals (Greenleaf, 1970). Research by Wang et al. (2018) found humble leadership to be highly correlated with psychological empowerment in teams. Since humble leaders more freely exercise humility and mistake admission, they set an example of behavior for their followers which fosters a sense of openness and trust through the empowerment they employ.

In a qualitative study by Ragnarsson et al. (2018), accountability and teamwork were two main themes that emerged that directly correlated to organizational success. The results of this study found that when a servant leadership style was employed, teams better understood expectations. Furthermore, the results of the Ragnarsson et al. study shared the perceptions of team members who explained how the process of learning and development emerged. As a result, their ability to work together, respect each other and collaborate and learn together drove organizational success.

Smith et al. (2018) share results from their literature review on inter-professional healthcare teams that promote important elements for a leader to employ to foster team performance. These elements are described as a leader having the ability to facilitate shared leadership, set expectations through goal alignment and foster creativity and innovation through communication, collaboration, and transformational change. These elements relate closely to the characteristics that make up a serving leader suggesting



servant leadership is a style that drives team performance. A study by Saleem et al. (2017) found that one of the foundational aspects of the servant leadership style is the ability to establish trust in teams through empowerment. This research found that trust played a mediating role in the relationship between servant leadership styles and perceived organizational performance.

The authors in the afore-mentioned studies have given us knowledge that there is a connection between servant leadership and team performance. However, a comparative analysis of leadership styles will help to demonstrate how the servant leadership model overlaps with other styles. Although the servant leadership style is unique according to its own theory, van Dierendonck & Nuijten (2011) share it encompasses several traits and attributes that are grounded in past theoretical styles.

### **A Comparison Analysis of Leadership Styles**

Leadership theories have progressed over the century and are still evolving into the 21<sup>st</sup> century as scholars aim to understand its multi-dynamic components. Ranging from inherent trait and attribute theory to adaptive and situational approaches, leadership continues to evolve through the research development and learning process. In this evolving learning process, the servant leadership model has emerged as one that is grounded in ethics and the inherent desire to serve others (Saleem, 2020).

In comparison to other leadership styles, servant leadership has both similarities and differences. A comparative analysis will be given for three well known and widely referred to leadership styles that have been studied and measured over several decades

(Avolio et al., 2004). These three styles are referred to as transformational, transactional and passive/avoidant which is a laissez faire style of leadership.

Transformational leadership has been described as a style that inspires and motivates individuals to think in different and creative ways. A composite of behavior styles may include exhibiting charisma in which idealized influence, inspirational leadership and intellectual stimulation emerge as attributions (Avolio & Bass, 1997). Central to transformational leadership is the idea that the leader represents a vision and views the future with a consistent positive attitude which in turn motivates followers.

Due to this vision and the motivational attitude, followers feel emotionally connected to the leader, build trust and confidence, and emphasize a collective sense of how their values will be enacted in which the result is the follower's idealized influential behavior (Avolio & Bass, 1997). This idealized influential behavior allows for intellectual stimulation in which the leader can challenge assumptions and past beliefs, promote problem analysis, and foster new and innovative solutions. Servant leadership has similarities to transformational leadership in that it inspires trust, confidence, and a collective set of values, yet is unique in that it specifically focuses on the follower first and not the organization's goal (van Dierendonck & Nuijten, 2011). While the stewardship dimension in the servant leadership model is focused on achieving the organization's mission, it is achieved by developing teams to cultivate their own inherent desire to serve others.

Transactional leadership consists of two sub scale styles including contingent reward and management by exception (Avolio & Bass, 1997). This style relies on a

clearly defined system that promotes contracts and rewards. This system operates on the premise that “you will receive x if you deliver y.” This leadership has been known in some cases to be effective in delivering results; however, Bian et al., (2019) found in their research that it is not an effective way to motivate and inspire teams to exhibit psychological empowerment. In the servant leadership style, the accountability dimension most closely aligns with a transactional style which is important to ensure expectations are met and team members are held accountable to ensure positive outcomes. However, empowerment plays a critical role in driving team performance. Therefore, the empowerment dimension proposes a subset of extraordinary attributes beyond the attributes that exist in a transactional leadership style that make the servant leadership style unique.

The passive/avoidant leadership style is more rooted in non-leadership where there is not a strong presence of any type of leadership. In the absence of leadership, often the needs of the team are avoided or ignored, and they are left to figure things out for themselves (Avolio & Bass, 1997). Fosse et al. (2018) found in their research that this leadership style is seen as more destructive in nature, especially in the military context. Contrarily, the servant leadership model has a dimension referred to as standing back. While this dimension may have similarities to a passive/avoidant style, it is different in that the leader only stands back when the tasks are completed or when only coaching is needed to support the teams who are empowered to carry out the initiative at hand.

With recent research focused on developing valid and reliable instruments to quantitatively measure the servant leadership style (Barbuto & Wheeler, 2006; van

Dierendonck & Nuijten, 2011) it is a model that is gaining more interest in the healthcare field due to its focus on the team (Trastek et al., 2015). The model is further aligned to the mission of healthcare as it is prefaced on cultivating serving leader role models that both serve and lead others to advance the mission of improving the health and welfare of others.

### **Summary and Conclusions**

The purpose of this study was to apply a quantitative correlational approach that examined the relationship between the servant leadership style of management, psychological safety, and team performance within a healthcare ambulatory context. Empirical knowledge has been established through the work of Edmondson (1999), Edmondson and Lei (2014) Edmondson et al. (2016), Wanless (2016) Wang et al. (2018) and Kim et al. (2020) that evidences the connection between psychological safety and team performance; however, the authors further acknowledge that more research is needed in this field of study. Empirical studies have also given us knowledge on leadership theory and its connection to psychological safety and team performance through the work of several research authors (Avolio & Bass, 1997; Greenleaf, 1970; Patterson, 2003; Fosse, 2018; Ragnarsson et al., 2018; Saleem, 2017; Smith et al., 2018 and Wang et al., 2018). However, there is limited knowledge on the theory of servant leadership and its connection to psychological safety and team performance. An examination of these relational elements aimed to impact social change by providing the healthcare services and leadership field a more micro-level dynamic view of the

intersection between leadership attributes and fostering psychologically safe environments where optimal multidisciplinary patient care is a focus.

### Chapter 3: Research Design, Methodology and Recruitment

Chapter 3 provides an overview of the research design and rationale used for this study which includes the variables that were studied. The research design identifies, explains, and justifies the appropriate method of use. I provide a thorough connection of the design to the research questions presented in the study and address the overall objective which was to advance social change through future knowledge in the healthcare services and leadership field. Chapter 3 also provides an overview of the methodology used for this study including the target population, the sampling procedure strategy and how the participants in the study were recruited and enrolled for data collection purposes. A power analysis was conducted to determine sufficient sample size. Furthermore, a thorough explanation is provided for the measures of instruments used in the study along with the process of obtaining permission for their use. Threats to validity in addition to ethical considerations are addressed, and a concluding summary of Chapter 3 provided.

#### **Research Design and Rationale**

The variables explored in the study were servant leadership, comprised of eight dimensions (independent variable), psychological safety (independent variable), and team performance (dependent variable). This study used a non-experimental correlational research design in which surveys were the method for primary data collection. Additional demographic information was collected that includes gender of the participants, age ranges, race, years of service with the organization, and job role category. The Kendall's Tau-b analysis was used to examine whether relationships exist between psychological safety and team performance and whether relationships exist between each of the eight

dimensions of servant leadership and team performance. A multiple logistic regression was performed to better understand the relationship that exists between a high perception of psychological safety, a serving leadership style of management, and perceptions of high team performance.

## **Methodology**

### **Target Population and Sampling Procedure**

The purpose of this study was to apply a quantitative correlational approach that examined the relationship between the servant leadership style of management, psychological safety, and team performance within a healthcare ambulatory context. To conduct this study, ambulatory healthcare workers who were 18 years of age or older, were recruited from 13 ambulatory clinics within the northeastern region of the United States with a total population of approximately 1,100. Participants were targeted using a randomized sampling method based on accessibility and their willingness to participate. Inclusion criteria for participants were listed as: (a) healthcare workers from targeted ambulatory clinics; and (b) 18 years of age or older. Exclusion criteria was listed as anyone who is not 18 years of age or older and is not part of the ambulatory healthcare clinics targeted for this study.

### **Sample and Effect Size**

To calculate sample size for the analysis and achieve a recommended level of confidence and power based on an anticipated effect size, the recommended G\*Power software was utilized (Faul et al.,2014). Cohen's (1992) recommendation was used by setting the power to .80 and alpha to .05 to mitigate risk and balance the instances of a

Type I or II error occurring. According to a recent meta-analysis (Dunst et al., 2018), previous research has shown moderate effect sizes between leadership styles and organizational and team outcomes. Using a moderate effect size which is typically an effect size that is meaningful enough to be seen by the naked eye (Cohen, 1992), the format of a two-tailed correlation model on the G\*Power software indicated a sample size of 84 participants was needed for the analysis. Using a multiple regression model on G\*Power software with two predictors indicated a sample size of 68 participants was needed. The aim of this study was to collect a sample size of 200 or more participants to ensure an adequate representative sample population was used.

### **Recruitment and Participation for Data Collection**

The process for recruitment and participation in the study was performed via an on-site advertisement flyer as well as an email advertisement offering the opportunity to participate in a study. The email communication was used as the information sheet to participants informing them of the details of the study, their rights as a participant and the risks and benefits of participating in the study. Details of the study were included outlining the title of the research, a brief summarization of the background and purpose of the study with an explanation that a demographic sheet and three survey items are being used. Participants were provided a link in the email that allowed them to participate in the survey. The information in the email acted as their information sheet, and the email stated that their choice to proceed with the survey acted as their informed consent. The data collection period lasted for 30 days, and all answers collected in the survey were stored in the organization's secure Redcaps database system. Data collected and stored in



Redcaps includes all answers to the demographic sheet (Appendix A) and all answers to the survey questions (Appendix B, Appendix C and Appendix D). Additionally, the communication stated that the total time to complete all items in the data collection packet would take approximately 15 minutes, and any participant could exit the survey at any time should they wish to do so.

Ethical considerations were addressed, and participants were assured that their participation was completely voluntary. Participants were ensured that none of the information collected would include any personal identifiers for the organization or any participants enrolled in the study. To reduce risk of any breach of confidentiality, all information was stored in the organization's secure database, and only aggregated data was transferred to an encrypted Iron Key flash drive as needed to run the SPSS statistical analysis once the data collection sample was met.

My contact information as the researcher was provided to all participants which included my name, phone number and email address as well as the phone number and study approval number for the organization's Institutional Review Board (Study #22-009) which was the approving IRB for the study. An offering of a brief summarization of the results was made to any participant interested in reviewing the finalized results.

### **Instrumentation and Operationalization of Constructs**

The Servant Leadership Survey (van Dierendonck & Nuijten, 2011) was the instrument used to measure the eight different dimensions of servant leadership which made up the total composite servant leadership score. The instrument is copyrighted by the authors; however, they allow researchers to use the instrument for scientific purposes,

and their permission was granted to use the survey for this study (Appendix E). The surveys created by Dr. Amy Edmondson to assess psychological safety and team performance were the instruments of measure for the psychological safety scores and team performance scores for which permission was granted by Dr. Amy Edmondson, professor at Harvard University (Appendix F). Since these surveys are all free to students performing research, no fee was incurred.

### **Servant Leadership Survey (SLS)**

The SLS was developed as a valid and reliable instrument that measures the complexities of leadership through a multidimensional framework (van Dierendonck & Nuijten, 2011). The content of SLS is based on Greenleaf's original work where he first introduced servant leadership over 30 years ago (Greenleaf, 1977). Using a three-phased approach, the instrument measurement was developed, and its content and criterion-related validity confirmed. The SLS accounts for various complexities of leadership characterized as an ethical and people-centric style, and the resulting eight-dimensional model is used today by scholars to assess attributes of serving leadership.

The SLS consists of 30 questions grouped into eight dimensions described as empowerment, accountability, standing back, humility, authenticity, courage, forgiveness, and stewardship (van Dierendonck & Nuijten, 2011). The 30 questions measure servant leadership characteristics. The answers consist of a 7-scale rating (1 = *strongly disagree*, 2 = *disagree*, 3 = *somewhat disagree*, 4 = *neutral (meaning they did not agree or disagree)*, 5 = *somewhat agree*, 6 = *agree*, and 7 = *strongly agree*). To obtain individual scores for respondents, the Likert items within the eight scales were

totaled, and a mean score for each style used for the correlational Kendall's Tau-b analysis. A total composite score was used for the multiple logistic regression. Higher scores indicate higher serving leadership characteristics are displayed in that dimension. Lower scores indicate lower serving leadership characteristics are displayed in that dimension.

### **Psychological Safety and Effective Team Performance Survey**

The psychological safety and effective team performance surveys used for the study were developed by Amy Edmondson (1999) as part of her original research on psychological safety and teams where she used a three-phase procedural approach for data collection including preliminary qualitative research, quantitative survey research and follow-up qualitative research. This three-phase approach included a combination of interviews, observations and surveys designed to assess features within the theoretical construct being studied. The psychological safety survey was designed as an original scale of measurement, and the team performance survey was based on Hackman's (1978) original team performance scale and used a self-reported measure of team performance.

The current psychological safety survey to date consists of seven questions that measure one's perception of psychological safety as it relates to the team they work with (Edmondson, 2019). The seven questions are: a) if you make a mistake on your team, it is often held against you (reverse scored), b) members of your team are able to bring up tough issues, c) people on your team sometimes reject others for being different (reverse scored), d) it is safe to take a risk on your team; e) it is difficult to ask other members of your team for help (reverse scored); f) no one on your team would deliberately act in a

way that undermines your efforts, and g) working with members of your team, your unique skills and talent are valued and utilized. The answers consist of a 7-scale rating (1 = *strongly disagree*, 2 = *disagree*, 3 = *somewhat disagree*, 4 = *neutral meaning they neither agree or disagree*, 5 = *somewhat agree*, 6 = *agree*, and 7 = *strongly agree*). To obtain individual scores for respondents, the Likert items were totaled, and the mean score for each respondent was used. A higher mean score indicates the respondent's perception of psychological safety is higher. A lower mean score indicates the respondent's perception of psychological safety is lower.

The team performance survey consisted of four questions that measures a team members perception of team performance based on the team they work with (Edmondson, 1999). The four questions are: a) your team meets or exceeds its customers' expectations, b) your team does superb work, c) critical quality errors occur frequently in your team's work (reverse scored), and d) your team keeps getting better and better. The answers consist of a 7-scale rating (1 = *strongly disagree*, 2 = *disagree*, 3 = *somewhat disagree*, 4 = *neutral meaning they neither agree or disagree*, 5 = *somewhat agree*, 6 = *agree*, and 7 = *strongly agree*). To obtain individual scores for respondents, the Likert items were totaled, and the mean score for each respondent was used. A higher mean score indicates the respondent's perception of team performance is higher. A lower mean score indicates the respondent's perception of team performance is lower. To perform the multiple logistic regression, the scores were dummy coded into categories that define the perception of team performance as high or low. For the binary regression, *high* = 1 and *low* = 0. Respondent scores that fell in the range between 5 and 7 were defined as having

a higher perception of team performance whereas, scores that fall in the range between 1 and 4 were defined as having a low perception of team performance.

### **Reliability and Validity**

The SLS instrument is a reliable and valid instrument used for leadership study. After conducting a three-phased study approach, van Dierendonck and Nuijten (2011) concluded that the reliability in terms of internal consistency was good for all scales. The combined sample for all three studies, respectively ( $N = 213$ ,  $N = 263$ ,  $N = 236$ ) showed a Cronbach's alpha of .89 for empowerment (7 items), .81 for accountability (3 items), .76 for standing back (3 items), .91 for humility (5 items), .82 for authenticity (4 items), .69 for courage (2 items), .72 for forgiveness (3 items), and .74 for stewardship (3 items). The results of the Cronbach's alpha show all items within a range of .72 to .91, which is well within the suggested .70 range for acceptability (Nunnally, 1978). The only exception is the courage dimension at .69, just slightly below the acceptable threshold.

The psychological safety and team performance surveys have been reliable scales of measurement used in the literature over the decades (Edmondson, 1999). The original instrument measured several variables including context support, team leader coaching, team psychological safety, team efficacy, team learning behavior, team performance, internal motivation, job involvement, team tenure, average company tenure, team learning (observer rated) and team performance (observer rated). All items fall within the acceptable range of .76 to .87 except for context support at .65, team efficacy at .63 and internal motivation at .64. Job involvement team tenure and average company tenure did not show Cronbach's alphas due to having only one survey item. The scales of

measurement from Edmondson's original work that are used for this study are team psychological safety which shows a Cronbach's alpha of .82 and team performance which shows a Cronbach's alpha of .76.

### **Data Analysis Plan**

I performed the analysis for this study using the IBM SPSS Statistical Software Version 27 (International Business Machines, 2017). The data was reviewed thoroughly for missing values of which there were none. I used the analyze/explore function in SPSS to assess the data and compile descriptive statistics that organize and explain the data as well as the demographics of the population sample. A thorough review of the data was performed to ensure the data is useable, reliable, and valid for analysis. The data analysis aimed to answer the following research questions and hypotheses:

Research Question 1: Is there a statistically significant relationship between psychological safety and team performance?

H<sub>01</sub>: There is no statistically significant relationship between psychological safety and team performance.

H<sub>a1</sub>: There is a statistically significant relationship between psychological safety and team performance.

Research Question 2: Is there a statistically significant relationship between the servant leadership empowerment dimension and team performance?

H<sub>02</sub>: There is no statistically significant relationship between the servant leadership empowerment dimension and team performance.

H<sub>a2</sub>: There is a statistically significant relationship between the servant leadership empowerment dimension and team performance.

Research Question 3: Is there a statistically significant relationship between the servant leadership standing back dimension and team performance?

H<sub>o3</sub>: There is no statistically significant relationship between the servant leadership standing back dimension and team performance.

H<sub>a3</sub>: There is a statistically significant relationship between the servant leadership standing back dimension and team performance.

Research Question 4: Is there a statistically significant relationship between the servant leadership accountability dimension and team performance?

H<sub>o4</sub>: There is no statistically significant relationship between the servant leadership accountability dimension and team performance.

H<sub>a4</sub>: There is a statistically significant relationship between the servant leadership accountability dimension and team performance.

Research Question 5: Is there a statistically significant relationship between the servant leadership forgiveness dimension and team performance?

H<sub>o5</sub>: There is no statistically significant relationship between the servant leadership forgiveness dimension and team performance.

H<sub>a5</sub>: There is a statistically significant relationship between the servant leadership forgiveness dimension and team performance.

Research Question 6: Is there a statistically significant relationship between the servant leadership courage dimension and team performance?

H<sub>06</sub>: There is no statistically significant relationship between the servant leadership courage dimension and team performance.

H<sub>a6</sub>: There is a statistically significant relationship between the servant leadership courage dimension and team performance.

Research Question 7: Is there a statistically significant relationship between the servant leadership authenticity dimension and team performance?

H<sub>07</sub>: There is no statistically significant relationship between the servant leadership authenticity dimension and team performance.

H<sub>a7</sub>: There is a statistically significant relationship between the servant leadership authenticity dimension and team performance.

Research Question 8: Is there a statistically significant relationship between the servant leadership humility dimension and team performance?

H<sub>08</sub>: There is no statistically significant relationship between the servant leadership humility dimension and team performance.

H<sub>a8</sub>: There is a statistically significant relationship between the servant leadership humility dimension and team performance.

Research Question 9: Is there a statistically significant relationship between the servant leadership stewardship dimension and team performance?

H<sub>09</sub>: There is no statistically significant relationship between the servant leadership stewardship dimension and team performance.

H<sub>a9</sub>: There is a statistically significant relationship between the servant leadership stewardship dimension and team performance.



Research Question 10: Is there a statistically significant relationship between psychological safety scores and servant leadership scores on one's perception of high team performance?

H<sub>o10</sub>: There is no statistically significant relationship between psychological safety scores and servant leadership scores on one's perception of high team performance.

H<sub>a10</sub>: There is a statistically significant relationship between psychological safety scores and servant leadership scores on one's perception of high team performance.

### **Detailed Analysis**

To answer the research questions and validate each hypothesis, I first performed a Kendall's Tau-b analysis to examine whether a correlation exists between psychological safety and team performance and then to examine whether relationships exist between each of the eight dimensions of servant leadership and team performance. I performed a multiple logistic regression to better understand the relationship that exists between a high perception of psychological safety, a serving leadership style of management and one's perception of high team performance. Results are interpreted using descriptive statistic matrices and statistical tables provided from the SPSS analysis software.

### **Threats to Validity**

Four main concerns to validity were assessed related to external, internal, statistical conclusion and construct. Validity assessments are necessary in research studies to ensure causal inference is fairly represented (Matthay & Glymour, 2020).

Understanding threats to validity provides a more comprehensive understanding of alternative explanations that may exist for associations besides the causal inferences being examined.

### **External**

Threats to external validity are primarily related to generalizing the outcomes of a study beyond the population sample in which the study was conducted. Healthcare workers in general may share some common fears with respect to how they perceive psychological safety (Edmondson & Lei, 2014). Having a well-defined population for this study as well as a randomized unbiased sample will help minimize threats to external validity making the replication of the study more generalizable to other healthcare organizations. Additionally, the study may be easy to replicate and generalize to other industries where leaders play a critical role in leading teams where it would be important to feel safe speaking up and being transparent in sharing concerns that heighten overall learning and improve process.

### **Internal**

Designing the study for internal validity was important to ensure the evidence in the study represents the relationship fairly between the variables being studied. In this study, the aim was to first examine whether relationships exist between all variables and to what strength and second, to understand the relationship between all three. The word “causation” will be avoided. Instead, the use of the word relationship helps to avoid confusion in general with respect to internal validity. Careful attention was given to

participant selection to avoid bias and reduce internal threats. History, maturation, testing, and mortality are not issues applicable to the internal validity for this study.

### **Statistical Conclusion**

To mitigate threats to statistical conclusion, a full assessment of the statistical methods chosen was performed to ensure all assumptions for the methods were met. To help control for statistical validity, confidence intervals were set at the 95% level, and the significance level was set at a common measure of  $\alpha = .05$ . Sample size is adequate using the G power analysis to ensure viability of the study.

### **Construct**

Construct validity was addressed, and risks mitigated by ensuring survey items were clear, used common language and did not require participants to have a broad understanding of the topics. The questions were simple and easy to follow. While some participants may have had some reservations about answering the questions due to privacy or anonymity reasons, the informed consent to participants ensured that confidentiality would be upheld and in accordance with ethical guidelines and respect for participants. Additionally, there were no collection of identifying characteristics of participants other than general demographics consisting of gender, race, ranges for age and years of service in addition to job role categories.

### **Ethical Procedures**

Ethical considerations were thoroughly considered and maintained throughout the research process. I created an information sheet to use as the informed consent document which was presented to each potential participant in the email advertisement. The

informed consent was thorough and clearly stated that participation is voluntary, and any participant may exit the study at any time should they choose to do so. Details of the study were provided along with risks and benefits. Confidentiality was upheld with respect to data collection, and a summary of the results were offered to any participant who has an interest in receiving the finalized results. My contact information was provided as the researcher for the study in addition to the organization's IRB phone number and approval number for the study (#22-009). In addition to the organization's IRB approval, I also obtained IRB approval from Walden University (#02-09-22-0728892).

I received appropriate approvals from internal leadership at the organization where the data was collected. The informed consent stated there would be minimal risk to both the organization and the participants. Privacy for the company was maintained by avoiding use of the name of the organization in the study, and privacy for each participant was maintained as no personal identifiers were used. The surveys used as the instrument of measure are straightforward, non-deceptive, used common language and are survey instruments known in the literature used for both past and current research study and future learnings. All data collection will be stored in the organization's secure databases with electronic password protection until receipt of notification that the data can be destroyed, which will follow the three-year federal mandatory waiting period (HHS.gov, n.d.).

## Summary

The purpose of this study was to apply a quantitative correlational approach that examined the relationship between the servant leadership style of management, psychological safety, and team performance within a healthcare ambulatory context. I used a non-experimental Kendall's Tau-b to understand correlations between variables, and then a multiple logistic regression analysis was performed to further examine the relationship between the servant leadership style of management, psychological safety, and team performance. A targeted sample of ambulatory healthcare participants was used based on their willingness to participate in the study provided they met all inclusion criteria outlined for the study.

The obtained data from each participant included demographics around, gender, race, ranges for years of service and age as well as job categories. Further data was collected from each participant using the SLT survey (van Dierendonck & Nuijten, 2011), the psychological safety survey and the team performance survey (Edmondson, 1999). Careful attention was given to reduce threats of validity and to protect the confidentiality of the participating organization as well as the enrolled participants in the study. Chapter 4 displays the results of the statistical analysis based on the collected data, and Chapter 5 presents the interpretation of the results and the findings from the study including limitations to the study and future recommendations for additional research.

## Chapter 4: Results

The purpose of this study was to apply a quantitative correlational approach that examined the relationship between the servant leadership style of management, psychological safety, and team performance within a healthcare ambulatory context. The statistical data analysis was designed to answer the following research questions and hypotheses:

Research Question 1: Is there a statistically significant relationship between psychological safety and team performance?

H<sub>01</sub>: There is no statistically significant relationship between psychological safety and team performance.

H<sub>a1</sub>: There is a statistically significant relationship between psychological safety and team performance.

Research Question 2: Is there a statistically significant relationship between the servant leadership empowerment dimension and team performance?

H<sub>02</sub>: There is no statistically significant relationship between the servant leadership empowerment dimension and team performance.

H<sub>a2</sub>: There is a statistically significant relationship between the servant leadership empowerment dimension and team performance.

Research Question 3: Is there a statistically significant relationship between the servant leadership standing back dimension and team performance?

H<sub>03</sub>: There is no statistically significant relationship between the servant leadership standing back dimension and team performance.

H<sub>a3</sub>: There is a statistically significant relationship between the servant leadership standing back dimension and team performance.

Research Question 4: Is there a statistically significant relationship between the servant leadership accountability dimension and team performance?

H<sub>o4</sub>: There is no statistically significant relationship between the servant leadership accountability dimension and team performance.

H<sub>a4</sub>: There is a statistically significant relationship between the servant leadership accountability dimension and team performance.

Research Question 5: Is there a statistically significant relationship between the servant leadership forgiveness dimension and team performance?

H<sub>o5</sub>: There is no statistically significant relationship between the servant leadership forgiveness dimension and team performance.

H<sub>a5</sub>: There is a statistically significant relationship between the servant leadership forgiveness dimension and team performance.

Research Question 6: Is there a statistically significant relationship between the servant leadership courage dimension and team performance?

H<sub>o6</sub>: There is no statistically significant relationship between the servant leadership courage dimension and team performance.

H<sub>a6</sub>: There is a statistically significant relationship between the servant leadership courage dimension and team performance.

Research Question 7: Is there a statistically significant relationship between the servant leadership authenticity dimension and team performance?

H<sub>o7</sub>: There is no statistically significant relationship between the servant leadership authenticity dimension and team performance.

H<sub>a7</sub>: There is a statistically significant relationship between the servant leadership authenticity dimension and team performance.

Research Question 8: Is there a statistically significant relationship between the servant leadership humility dimension and team performance?

H<sub>o8</sub>: There is no statistically significant relationship between the servant leadership humility dimension and team performance.

H<sub>a8</sub>: There is a statistically significant relationship between the servant leadership humility dimension and team performance.

Research Question 9: Is there a statistically significant relationship between the servant leadership stewardship dimension and team performance?

H<sub>o9</sub>: There is no statistically significant relationship between the servant leadership stewardship dimension and team performance.

H<sub>a9</sub>: There is a statistically significant relationship between the servant leadership stewardship dimension and team performance.

Research Question 10: Is there a statistically significant relationship between psychological safety scores and servant leadership scores on one's perception of high team performance?

H<sub>o10</sub>: There is no statistically significant relationship between psychological safety scores and servant leadership scores on one's perception of high team performance.



$H_{a10}$ : There is no statistically significant relationship between psychological safety scores and servant leadership scores on one's perception of high team performance.

In Chapter 4, I summarize the collected data, the analysis of findings, the timeframe for the data collection, the actual recruitment process, and the response rate achieved. I present descriptive statistics outlining important information for the variables used in the study as well as demographic information for the population sample. Furthermore, in Chapter 4, I evaluate statistical assumptions appropriate to the methods used for the study and share statistical analysis findings organized by research questions and hypotheses. Tables are used to report appropriate findings. Chapter 4 concludes with a summary of results, and a discussion of the results will be reported in Chapter 5.

### **Summary of Data Collection Process**

The population for which data collection was compiled for this study included 13 ambulatory clinics at a large healthcare organization in northeast United States. The total target population consisted of approximately 1,100 ambulatory healthcare workers. The targeted participants were sent an email advertisement explaining they were part of a sample population where research was taking place and offered them an opportunity to voluntarily participate in the research by completing a survey. The survey included questions around demographics and questions compiled from the Servant Leadership Survey, the Psychological Safety Survey, and the Team Performance Survey. The data collection period lasted for a total of 30 days, and the total number of respondents who agreed to be part of the study and completed the survey were 228. Although a 50%

response rate was preferred, due to the COVID-19 pandemic, which brought about staff shortages and stressful environments, a 21% response rate was achieved. The response rate was considered good for survey research and was more than adequate for the sample size needed of 84 to ensure credibility of the data analysis.

## **Study Results**

### **Descriptive Statistics**

Table 1 lists descriptive statistics that describe the main variables used in the study, their mean value, standard deviations as well as their minimum and maximum ranges. The first variable outlined is the dependent variable of team performance ( $N = 228$ ,  $M = 5.96$ ,  $SD = .904$ ) with a minimum and maximum range between 4 and 7. The second variable is the independent variable of psychological safety ( $N = 228$ ,  $M = 4.94$ ,  $SD = 1.167$ ) with a minimum and maximum range between 2 and 7. The third variable is the independent variable of serving leader ( $N = 228$ ,  $M = 37.17$ ,  $SD = 8.205$ ) with a minimum and maximum range between 14 and 53. As noted, the standard variations show less variability in the team performance and psychological safety scores with a higher amount of variability in the serving leadership survey scores.

**Table 1***Descriptive Statistics for Main Variables*

| Variables            | <i>N</i> | Minimum | Maximum | Mean  | Std. Deviation |
|----------------------|----------|---------|---------|-------|----------------|
| Team Performance     | 228      | 4       | 7       | 5.96  | .904           |
| Psychological Safety | 228      | 2       | 7       | 4.94  | 1.167          |
| Serving Leader       | 228      | 14      | 53      | 37.17 | 8.205          |

Table 2 lists additional descriptive statistics that describe the eight dimensions (which total the composite servant leadership score), their mean value and standard deviations as well as their minimum and maximum ranges. The variables are empowerment ( $N = 228$ ,  $M = 5.12$ ,  $SD = 1.623$ ), standing back ( $N = 228$ ,  $M = 4.95$ ,  $SD = 1.625$ ), accountability ( $N = 228$ ,  $M = 5.74$ ,  $SD = 1.119$ ), forgiveness ( $N = 228$ ,  $M = 5.48$ ,  $SD = 1.622$ ), courage ( $N = 228$ ,  $M = 4.12$ ,  $SD = 1.395$ ), authenticity ( $N = 228$ ,  $M = 4.71$ ,  $SD = 1.406$ ), humility ( $N = 228$ ,  $M = 4.45$ ,  $SD = 1.458$ ) and stewardship ( $N = 228$ ,  $M = 5.11$ ,  $SD = 1.539$ ). All variables had a minimum and maximum range between 1 and 7.

**Table 2***Descriptive Statistics for Eight Dimensions of Servant Leadership*

| Variables      | <i>N</i> | Minimum | Maximum | Mean | Std. Deviation |
|----------------|----------|---------|---------|------|----------------|
| Empowerment    | 228      | 1       | 7       | 5.12 | 1.623          |
| Standing Back  | 228      | 1       | 7       | 4.95 | 1.625          |
| Accountability | 228      | 1       | 7       | 5.74 | 1.119          |
| Forgiveness    | 228      | 1       | 7       | 5.48 | 1.622          |
| Courage        | 228      | 1       | 7       | 4.12 | 1.395          |
| Authenticity   | 228      | 1       | 7       | 4.71 | 1.406          |
| Humility       | 228      | 1       | 7       | 4.45 | 1.458          |
| Stewardship    | 228      | 1       | 7       | 5.11 | 1.539          |

Tables 3 through 7 share demographic data including age, gender, years of service, race, and job role. There were 228 respondents of which 16% were between the age of 18 and 30, 26% between age 31 and 40, 26% between age 41 and 50, 24% between age 51 and 60, and 9% between age 61 and 70. For gender, 9% were male, 91% were female. For years of service, 9% were employed 5 years or less, 20% between 6 and 10 years, 10% between 11 and 15 years, and 16% more than 15 years. For race, 87% were White, 9% were Black or African American, 2% were Hispanic or Latino, 1% were Asian and 1% were Native Hawaiian or other Pacific Islander. For job role, 65% were clinical nursing, 5% were clinical providers, 4% were administrative leads, and 27% were administrative clerical.

**Table 3***Age*

| Age Range | Frequency | Percent |
|-----------|-----------|---------|
| 18-30     | 37        | 16%     |
| 31-40     | 60        | 26%     |
| 41-50     | 59        | 26%     |
| 51-60     | 51        | 24%     |
| 61-70     | 21        | 9%      |

**Table 4***Gender*

| Gender | Frequency | Percent |
|--------|-----------|---------|
| Male   | 20        | 9%      |
| Female | 208       | 91%     |

**Table 5***Years of Service*

| Years of Service | Frequency | Percent |
|------------------|-----------|---------|
| 5 years or less  | 123       | 9%      |
| 6-10 years       | 45        | 20%     |
| 11-15 years      | 23        | 10%     |
| 15 years or more | 37        | 16%     |

**Table 6***Race*

| Race                               | Frequency | Percent |
|------------------------------------|-----------|---------|
| White                              | 198       | 87%     |
| Black or African American          | 21        | 9%      |
| Hispanic or Latino                 | 5         | 2%      |
| Asian                              | 3         | 1%      |
| Native Hawaiian / Pacific Islander | 1         | 1%      |

**Table 7***Job Role*

| Job Role                | Frequency | Percent |
|-------------------------|-----------|---------|
| Clinical Nursing        | 148       | 65%     |
| Clinical Provider       | 10        | 5%      |
| Administrative Lead     | 9         | 4%      |
| Administrative Clerical | 61        | 27%     |

**Statistical Assumptions**

I used two research methods for this study. The first was a Kendall's Tau-b analysis which I performed to examine whether a correlation exists between psychological safety and team performance and to also examine whether relationships exist between each of the eight dimensions of servant leadership and team performance.

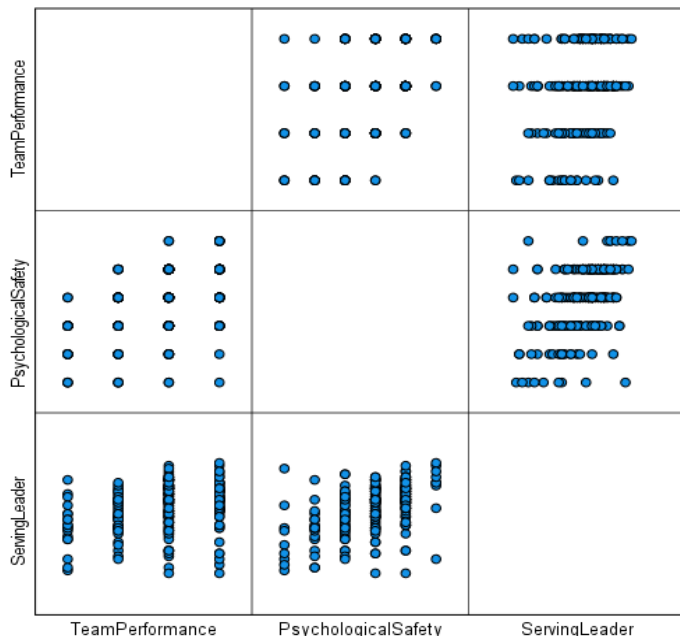
The second method consisted of a multiple logistic regression to better understand the relationship that exists between a high perception of psychological safety, a serving leadership style of management and one's perception of high team performance.

I chose to use the Kendall's Tau-b analysis as it is a method to understand correlation coefficients. It is a non-parametric measure of strength and direction of association that exists between two variables, is as an alternative method to the Pearson's correlation that is good to use when data fails to meet one or more of the assumptions that are required. In this study, although the data passed all other assumptions for Pearson's correlation, it failed to meet the assumption of linearity.

There are three assumptions required for Kendall's Tau-b. The first requires you to have two variables that are measured on at least an ordinal scale or are continuous in nature. The variables for this study met that assumption. The second assumption is that the variables represent paired observations in which the variables for this study met that assumption from the initial design of the research. The third assumption, although not a strict requirement, is that the data shows some evidence that a monotonic relationship exists between the variables. Although weak in some instances, this assumption was met as demonstrated by the scatter plot matrices shown in Figure 2.

**Figure 2**

*Scatter Plot of Matrices*



The second statistical method I used was multiple logistic regression. Multiple logistic regression is an alternative regression model to multiple linear regression which requires the data to meet the assumption of linearity. Since the data failed to meet this assumption, and I was able to dummy code the dependent variable of team performance scores into binary variables (*high team performance* = 1 and *low team performance* = 0), multiple logistic regression was the appropriate method for this study.

Multiple logistic regression has five assumptions that must be met. The first is that the dependent variable is binary. Since team performance scores were dummy coded into high and low, this variable met that assumption. The second assumption is that observations are independent. This assumption was met with the initial design of the



study. The third assumption requires the variables to have little to no multicollinearity. This assumption is met as demonstrated in Table 8 which shows the variance inflation factor (VIF) at 1.299 which is very close to 1 meaning the variables have little correlation.

**Table 8**

*Collinearity Statistics*

| Variable Name        | Tolerance | VIF   |
|----------------------|-----------|-------|
| Serving Leader       | .770      | 1.299 |
| Psychological Safety | .770      | 1.299 |

The fourth assumption that must be met is the linearity of independent continuous variables and the log odds. To test for this assumption, I used a Box Tidwell test to transform the data for the independent continuous variables of servant leadership scores and psychological safety scores. This assumption was met as demonstrated in Table 9 that shows the output of the test which is primarily focused on the significant level. Since the  $p$  value is showing as non-significant ( $p = .811$ ), it indicates that the assumption of linearity of the logit has been met.

**Table 9***Box Tidwell Test Transformation*

|                      | B      | S.E.  | Wald  | df | Sig. | Exp(B) |
|----------------------|--------|-------|-------|----|------|--------|
| Psychological Safety | -7.271 | 4.238 | 2.944 | 1  | .086 | .001   |
| Serving Leader       | -.206  | .880  | .055  | 1  | .815 | .814   |
| Trans Psych Safety   | 3.653  | 1.880 | 3.774 | 1  | .052 | 38.595 |
| Trans Leader         | .053   | .199  | .071  | 1  | .790 | 1.054  |

The fifth assumption for multiple logistic regression is that the sample size for the study is large. The sample size collected for this study was 228 which was more than adequate and considered to be large. Therefore, this assumption has been met.

I ran a Kendall's tau-b correlation to answer each of the questions for the study. Figure 3 represents the output table from SPSS that shows a matrix of correlations between all variables used for Research Questions 1 through 9. A summary is as follows:

Research Question 1. Is there a statistically significant relationship between psychological safety and team performance? The analysis showed a correlation was seen which is statistically significant ( $\tau_b = .384, p < .05$ ). Therefore, I rejected the null hypothesis.

Research Question 2. Is there a statistically significant relationship between the servant leadership empowerment dimension and team performance? The analysis showed a correlation was seen which is statistically significant ( $\tau_b = .274, p < .05$ ). Therefore, I rejected the null hypothesis.

Research Question 3. Is there a statistically significant relationship between the servant leadership standing back dimension and team performance? The analysis showed a correlation was seen which is statistically significant ( $r = .202, p < .05$ ). Therefore, I reject the null hypothesis.

Research Question 4. Is there a statistically significant relationship between the servant leadership accountability dimension and team performance? The analysis showed a correlation was seen which is statistically significant ( $r = .296, p < .05$ ). Therefore, I reject the null hypothesis.

Research Question 5. Is there a statistically significant relationship between the servant leadership forgiveness dimension and team performance? The analysis showed a correlation was seen which is statistically significant ( $r = .210, p < .05$ ). Therefore, I reject the null hypothesis.

Research Question 6. Is there a statistically significant relationship between the servant leadership courage dimension and team performance? The analysis showed a statistically significant correlation was not seen ( $r = -.001, p = .983$ ). Therefore, I fail to reject the null hypotheses.

Research Question 7. Is there a statistically significant relationship between the servant leadership authenticity dimension and team performance? The analysis showed a correlation was seen which is statistically significant ( $r = .167, p = .003$ ). Therefore, I reject the null hypothesis.

Research Question 8. Is there a statistically significant relationship between the servant leadership humility dimension and team performance? The analysis showed a

correlation was seen which is statistically significant ( $\tau_b = .219, p < .05$ ). Therefore, I reject the null hypothesis.

Research Question 9. Is there a statistically significant relationship between the servant leadership stewardship dimension and team performance? The analysis showed a correlation was seen which is statistically significant ( $\tau_b = .196, p < .05$ ). Therefore, I reject the null hypothesis.

**Figure 3**

*Kendall's Tau-b for Correlations – Image from SPSS Output Table*

|                     |                         | TeamPerformance | PsychologicalSafety | Empowerment | StandingBack | Accountability | Forgiveness | Courage | Authenticity | Humility | Stewardship |
|---------------------|-------------------------|-----------------|---------------------|-------------|--------------|----------------|-------------|---------|--------------|----------|-------------|
| TeamPerformance     | Correlation Coefficient | 1.000           | .384**              | .274**      | .202**       | .296**         | .210**      | -.001   | .167**       | .219**   | .196**      |
|                     | Sig. (2-tailed)         | .               | .000                | .000        | .000         | .000           | .000        | .983    | .003         | .000     | .000        |
|                     | N                       | 228             | 228                 | 228         | 228          | 228            | 228         | 228     | 228          | 228      | 228         |
| PsychologicalSafety | Correlation Coefficient | .384**          | 1.000               | .424**      | .307**       | .289**         | .306**      | .114*   | .355**       | .384**   | .341**      |
|                     | Sig. (2-tailed)         | .000            | .                   | .000        | .000         | .000           | .000        | .035    | .000         | .000     | .000        |
|                     | N                       | 228             | 228                 | 228         | 228          | 228            | 228         | 228     | 228          | 228      | 228         |
| Empowerment         | Correlation Coefficient | .274**          | .424**              | 1.000       | .685**       | .530**         | .557**      | .209**  | .543**       | .630**   | .669**      |
|                     | Sig. (2-tailed)         | .000            | .000                | .           | .000         | .000           | .000        | .000    | .000         | .000     | .000        |
|                     | N                       | 228             | 228                 | 228         | 228          | 228            | 228         | 228     | 228          | 228      | 228         |
| StandingBack        | Correlation Coefficient | .202**          | .307**              | .685**      | 1.000        | .532**         | .545**      | .226**  | .549**       | .620**   | .667**      |
|                     | Sig. (2-tailed)         | .000            | .000                | .000        | .            | .000           | .000        | .000    | .000         | .000     | .000        |
|                     | N                       | 228             | 228                 | 228         | 228          | 228            | 228         | 228     | 228          | 228      | 228         |
| Accountability      | Correlation Coefficient | .296**          | .289**              | .530**      | .532**       | 1.000          | .337**      | .184**  | .430**       | .425**   | .522**      |
|                     | Sig. (2-tailed)         | .000            | .000                | .000        | .000         | .              | .000        | .001    | .000         | .000     | .000        |
|                     | N                       | 228             | 228                 | 228         | 228          | 228            | 228         | 228     | 228          | 228      | 228         |
| Forgiveness         | Correlation Coefficient | .210**          | .306**              | .557**      | .545**       | .337**         | 1.000       | .007    | .392**       | .511**   | .574**      |
|                     | Sig. (2-tailed)         | .000            | .000                | .000        | .000         | .000           | .           | .892    | .000         | .000     | .000        |
|                     | N                       | 228             | 228                 | 228         | 228          | 228            | 228         | 228     | 228          | 228      | 228         |
| Courage             | Correlation Coefficient | -.001           | .114*               | .209**      | .226**       | .184**         | .007        | 1.000   | .344**       | .250**   | .227**      |
|                     | Sig. (2-tailed)         | .983            | .035                | .000        | .000         | .001           | .892        | .       | .000         | .000     | .000        |
|                     | N                       | 228             | 228                 | 228         | 228          | 228            | 228         | 228     | 228          | 228      | 228         |
| Authenticity        | Correlation Coefficient | .167**          | .355**              | .543**      | .549**       | .430**         | .392**      | .344**  | 1.000        | .607**   | .560**      |
|                     | Sig. (2-tailed)         | .003            | .000                | .000        | .000         | .000           | .000        | .000    | .            | .000     | .000        |
|                     | N                       | 228             | 228                 | 228         | 228          | 228            | 228         | 228     | 228          | 228      | 228         |
| Humility            | Correlation Coefficient | .219**          | .384**              | .630**      | .620**       | .425**         | .511**      | .250**  | .607**       | 1.000    | .697**      |
|                     | Sig. (2-tailed)         | .000            | .000                | .000        | .000         | .000           | .000        | .000    | .000         | .        | .000        |
|                     | N                       | 228             | 228                 | 228         | 228          | 228            | 228         | 228     | 228          | 228      | 228         |
| Stewardship         | Correlation Coefficient | .196**          | .341**              | .669**      | .667**       | .522**         | .574**      | .227**  | .560**       | .697**   | 1.000       |
|                     | Sig. (2-tailed)         | .000            | .000                | .000        | .000         | .000           | .000        | .000    | .000         | .000     | .           |
|                     | N                       | 228             | 228                 | 228         | 228          | 228            | 228         | 228     | 228          | 228      | 228         |

\* is significant at the 0.05 level (2-tailed).

\*\* is significant at the 0.01 level (2-tailed).

I ran a multiple logistic regression to answer Question 10 for the study, and the results are demonstrated in tables. The Beginning Block 0 is the model showing only the constant and the independent predictor variables of psychological safety and servant leadership that were left out. The model summary shows how much variation in the dependent variable can be explained by the model. The Omnibus Test of Model Coefficients shows the overall statistical significance of the model, and the table listing variables included in the equation indicate the probability of team performance being high when controlling for psychological safety and servant leadership scores. A summary of results is as follows:

Research Question 10. Is there a statistically significant relationship between psychological safety scores and servant leadership scores on one's perception of high team performance? The analysis in Table 10 at the Beginning Block 0 shows an overall statistical significance ( $B=2.398$ ,  $\text{Exp}(B) = 11$ ,  $p < .05$ ). Since the overall model is statistically significant, we reject the null hypothesis.

**Table 10**

*Multiple Logistic Regression Block 0: Beginning Block*

|          | B     | S.E. | Wald    | df | Sig. | Exp(B) |
|----------|-------|------|---------|----|------|--------|
| Constant | 2.398 | .240 | 100.144 | 1  | .000 | 11.000 |

The analysis in Table 11 at Block 0 with predictor variables left out also shows the model as statistically significant ( $p < .05$ ).

**Table 11**

*Multiple Logistic Regression Block 0: Predictor Variables left out*

| Predictor Variables  | Score  | df | Sig. |
|----------------------|--------|----|------|
| Psychological Safety | 32.154 | 1  | .000 |
| Serving Leader       | 12.802 | 1  | .000 |
| Overall Statistic    | 34.102 | 2  | .000 |

Interpreting the model summary further, Table 12 shows that 31% of the variance can be explained in team performance (Nagelkerke  $R^2$ ).

**Table 12**

*Multiple Logistic Regression Block 1– Model Summary*

| Step   | -2 Log Likelihood | Cox & Snell R Square | Nagelkerke R Square |
|--------|-------------------|----------------------|---------------------|
| Step 1 | 98.178            | .133                 | .305                |

The analysis in Table 13 shows Block 1 and the Omnibus Test with predictor variables added to the equation. An overall statistical significance is found ( $p < .05$ ).

**Table 13**

*Multiple Logistic Regression Block 1- Omnibus Test*

| Step 1 | Chi-Square | df | Sig. |
|--------|------------|----|------|
| Step   | 32.619     | 2  | .000 |
| Block  | 32.619     | 2  | .000 |
| Model  | 32.619     | 2  | .000 |

When interpreting the coefficients for Block 1 where the predictor variables are added into the equation, Table 14 shows there is statistical significance for psychological safety scores and shows there is a 2.801 higher chance of perceiving team performance as being high when controlling for servant leadership ( $B = 1.030$   $\text{Exp}(B) = 2.801$ ,  $p < .05$ ,  $\text{CI} [1.698, 4.618]$ ). When interpreting the coefficient for the serving leadership scores, the model shows no statistical significance was found ( $B = .028$ ,  $\text{Exp}(B) = 1.028$ ,  $p = .403$ ,  $\text{CI} [.963, 1.098]$ ) when controlling for psychological safety. The results for psychological safety can further be interpreted to mean that for every one unit increase in psychological safety scores, the odds of perceiving team performance as high are 2.801 when controlling for serving leadership. The results for servant leadership can be interpreted to mean that for every one unit increase in serving leadership scores, the odds of perceiving team performance as high only increase by 1.028 when controlling for psychological safety.

**Table 14**

*Multiple Logistic Regression Block 1–Variables in the Equation*

| Predictor Variables  | B     | S.E. | Wald   | df | Sig. | Exp(B) | 95% CI on EXP(B) |       |
|----------------------|-------|------|--------|----|------|--------|------------------|-------|
|                      |       |      |        |    |      |        | Lower            | Upper |
| Psychological Safety | 1.030 | .255 | 16.284 | 1  | .000 | 2.801  | 1.698            | 4.618 |
| Serving Leader       | .028  | .033 | .698   | 1  | .403 | 1.028  | .963             | 1.098 |

**Summary**

In summary, I used survey data from 13 ambulatory health clinics located at a large healthcare system in northeast Ohio. A total of 228 healthcare workers voluntarily



agreed to participate in the study via the survey data collection method. The survey was comprised of questions related to demographics, psychological safety, and team performance questions.

The study aimed to answer ten research questions. All questions were supported by the analysis and figures and tables represented to share results. The summarized questions are listed as follows:

- Research question 1 focused on the relationship between psychological safety and team performance.
- Research question 2 focused on the relationship between the servant leadership empowerment dimension and team performance.
- Research question 3 focused on the relationship between the servant leadership standing back dimension and team performance.
- Research question 4 focused on the relationship between the servant leadership accountability dimension and team performance.
- Research question 5 focused on the relationship between the servant leadership forgiveness dimension and team performance.
- Research question 6 focused on the relationship between the servant leadership courage dimension and team performance.
- Research question 7 focused on the relationship between the servant leadership authenticity dimension and team performance.
- Research question 8 focused on the relationship between the servant leadership humility dimension and team performance.

- Research question 9 focused on the relationship between the servant leadership stewardship dimension and team performance.
- Research question 10 focused on the relationship between psychological safety scores and servant leadership scores on one's perception of team performance.

For the Kendall's tau-b correlations, statistical significance was found for each relationship except for the relationship between courage and team performance. For the multiple logistic regression, although overall statistical significance was found for the model, important to note is that no statistical significance was found between servant leadership and team performance when controlling for psychological safety indicating a stronger influence in the relationship may be psychological safety.

I provide a more in-depth discussion of the relationships as well as limitations to the study in Chapter 5. Results and findings are described with references made to the literature review supporting the study as well as the theoretical framework for which the study was grounded in. Chapter 5 includes summarized key findings that relate to the current knowledge in the discipline and highlights new learnings achieved from the current study. Recommendations for future research will be shared.

## Chapter 5: Discussion, Conclusions, and Recommendations

### Overview

The purpose of this study was to apply a quantitative correlational approach that examined the relationship between the servant leadership style of management, psychological safety, and team performance within a healthcare ambulatory context. The 10 research questions, which were focused on the triadic relationship between psychological safety servant leadership and team performance, guided the study. I performed a Kendall's Tau-b analysis to first examine whether a correlation exists between psychological safety and team performance and second to examine whether relationships exist between each of the eight dimensions of servant leadership and team performance. I performed a multiple logistic regression to better understand the relationship that exists between a high perception of psychological safety, a serving leadership style of management and one's perception of high team performance.

I made the choice to use Kendall's Tau-b as an alternative to Pearson's correlation since the data did not meet the linearity assumption required to use the Pearson's correlation method. I made the choice to use multiple logistic regression as an alternative to multiple linear regression as the linear method also requires the assumption of linearity. Both Kendall's Tau-b and multiple logistic regression were appropriate methods to use, and all assumptions were met to increase the validity of the results.

Key findings from the Kendall's Tau-b analysis concluded that significance was found for each domain of servant leadership and team performance except for the domain of courage. For the multiple logistic regression, although overall statistical significance

was found for the model, important to note is that no statistical significance was found between servant leadership and team performance when controlling for psychological safety indicating psychological safety may play a stronger role in the relationship. Furthermore, Chapter 5 identifies and shares limitations to the study and discusses a summary of interpretations and findings. Future recommendations for research and practical implications for social change are highlighted and a concluding paragraph provided.

### **Interpretations of the Findings**

The results provided for this study provide insight to the concepts explored in this study. The first finding in the correlational analysis for this study indicated that a statistically significant relationship exists in this sample population between psychological safety and team performance. This is important to note as psychologically safe environments have been key in building better teams. Psychologically safe environments promote individual empowerment and foster environments where problem identification is embraced and problem solving is used to drive continuous improvement and social change. This finding confirms that psychologically safe environments can be related to improved team performance.

A second finding in the correlational analysis, which was focused on the eight dimensions of leadership and their relationship to team performance, also provided evidence of a statistically significant relationship between seven of the servant leadership domains including empowerment, standing back, accountability, forgiveness, authenticity, humility, and stewardship. The only dimension where statistical significance

was not found was the courage dimension. This finding confirms the theoretical concept of SLT that grounds the study through Robert Greenleaf's work. SLT (Greenleaf, 1970) promotes the idea that leaders are more effective in team environments because they focus on the needs of others. They are willing to both lead and serve which creates a dynamic personal environment through relationships, humility and caring for one another as a human being. Since the courage domain only had two questions and was focused on understanding whether leaders take risks, it may have been a difficult question for the respondents to score which may be why no statistical significance was found.

A third key finding in this study is the multiple logistic regression analysis in which the overall model, with all variables entered in the equation, was statistically significant. This analysis is evidence that a relationship does exist between all three primary variables including psychological safety, serving leadership, and team performance. Using a multiple logistic regression analysis allowed for the research study to control for each predictor variable while holding everything else constant. Although statistical significance was found between the variables, when entered in the multiple regression, a key finding demonstrated that psychological safety may be a stronger predictor of team performance compared to serving leadership. This confirms the work of Amy Edmondson (1999) who introduced the idea and importance of psychological safety in healthcare environments.

### **Limitations of the Study**

One of the common data collection tools used in research is surveys, which was the method used to collect data for this study. A primary limitation with survey research

is that it generally assumes that participants will be honest and answer the survey questions to the best of their knowledge; however, there may be varying degrees of perception when interpreting and understanding the questions in the data survey tool. A second limitation with survey data collection is that survey research only captures the perception of the participant. As this study collected the participant's perception of their leader's servant leadership characteristics, the scores may have been different if the data were collected from the leader with their own evaluation score. A third limitation in this study relates to the variable of psychological safety. This study defined psychological safety according to Amy Edmondson's (2019) definition in her research work, and the variable was described with the intended definition on the survey link, but there may be other reasons rooted in psychologically that would make someone not feel psychologically safe and therefore interpret and score the questions differently. Lastly, a fourth limitation with this study is the stressful environments that were incurred during the time of this research within healthcare systems due to the Covid 19 pandemic. Operating under different conditions and in a more diversified population of participants may yield different results when generalized on a broader scale.

### **Recommendations for the Future and Implications for Social Change**

The results of this study highlight the dynamic relationship that leaders play within team environments. As noted throughout the literature review, leadership is critical to creating and developing effective teams, and the environments in which teams thrive are a contributing factor. Future recommendations for studies and implications for social change are as follows:

Exploring leadership theories in different contexts. This study was designed to better understand the relationships that exist between the variables of interest in a healthcare environment. Future studies designed within different contexts where stressful teamwork is required may reveal additional key learnings in leadership construct theory. Environments such as crisis management and emergency response are examples of high stress environments where team performance is critical. New learnings in leadership construct theory in a variety of contexts may have broad implications for social change at the organizational and community level.

Exploring psychological safety as the outcome variable. This study was designed to explore team performance as the outcome dependent variable for which psychological safety was an independent predictor variable being studied. Designing future studies that focus on psychological safety as the dependent variable may reveal more insight into the different predictors of psychological safety and provide insight around key factors that are related to environments where psychological safety is high. These key learnings from newly designed studies give opportunity to vast social implications at the organizational level.

Continued exploration into different leadership construct theories within a variety of team environments. Although much has been learned about leadership and teamwork, future studies should continue to explore the evolving leadership theories and their instruments of measure. With limited instruments of valid measurement for leadership characteristics, newly constructed instruments piloted in diverse research study may

provide broad implications for social change at the organizational and individual level as new insight becomes available on these topics.

### **Conclusion**

Leadership, psychological safety, and team performance are all relevant topics for discussion and learning, especially within a healthcare environment where multidisciplinary teams are delivering a multitude of services for high volumes of patients with varying degrees of illness. The healthcare environment is complex, and with these complexities comes dynamic interactions between healthcare workers in stressful team environments. The findings in this study give a new body of knowledge that evidences the intersection of leadership characteristics, psychologically safe environments, and team performance and highlights the important role each plays within the healthcare ambulatory environment. Future studies are warranted in these fields with a continued goal to bring about refreshing clarity to the underexplored topics of leadership construct theories and how they might drive social change for leaders, educators and scientists operating within complex team environments.



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## Appendix A: Demographic Data Collection Sheet

1. What category best describes the gender you associate with?

Male

Female

2. What age range best describes you?

18-30 years old

31-40 years old

41-50 years old

51-60 years old

60-70 years old

Older than 70 years

3. What category best matches your years of service with the current organization?

5 years or less

Between 5 and 10 years

Between 11 and 15 years

More than 15 years

4. How would you describe your race?

White

Black or African American

Hispanic or Latino

Asian

Native Hawaiian or other Pacific Islander

5. What category best matches the role or department you work in?

- Clinical Nursing
- Clinical Provider
- Administrative Lead
- Administrative Clerical

## Appendix B: Serving Leadership Survey

From: [The Servant Leadership Survey: Development and Validation of a Multidimensional Measure](#)

|  |
|--|
| Empowerment  |
| 1. My manager gives me the information I need to do my work well.  |
| 2. My manager encourages me to use my talents.   |
| 3. My manager helps me to further develop myself.  |
| 4. My manager encourages his/her staff to come up with new ideas.  |
| 12. My manager gives me the authority to take decisions which make work easier for me.                   |
| 20. My manager enables me to solve problems myself instead of just telling me what to do.                |
| 27. My manager offers me abundant opportunities to learn new skills.                                     |
| Standing back  |
| 5. My manager keeps himself/herself in the background and gives credits to others.                       |
| 13. My manager is not chasing recognition or rewards for the things he/she does for others.              |
| 21. My manager appears to enjoy his/her colleagues' success more than his/her own.                       |
| Accountability   |
| 6. My manager holds me responsible for the work I carry out.   |
| 14. I am held accountable for my performance by my manager.  |
| 22. My manager holds me and my colleagues responsible for the way we handle a job.                       |
| Forgiveness  |
| 7. My manager keeps criticizing people for the mistakes they have made in their work (r).                |
| 15. My manager maintains a hard attitude towards people who have offended him/her at work (r).           |
| 23. My manager finds it difficult to forget things that went wrong in the past (r).                      |
| Courage  |
| 8. My manager takes risks even when he/she is not certain of the support from his/her own manager.       |
| 16. My manager takes risks and does what needs to be done in his/her view.                               |
| Authenticity   |
| 9. My manager is open about his/her limitations and weaknesses.  |
| 17. My manager is often touched by the things he/she sees happening around him/her.                      |
| 24. My manager is prepared to express his/her feelings even if this might have undesirable consequences. |
| 28. My manager shows his/her true feelings to his/her staff.   |
| Humility   |
| 10. My manager learns from criticism.  |
| 18. My manager tries to learn from the criticism he/she gets from his/her superior.                      |
| 25. My manager admits his/her mistakes to his/her superior.  |
| 29. My manager learns from the different views and opinions of others.                                   |
| 30. If people express criticism, my manager tries to learn from it.                                      |
| Stewardship  |
| 11. My manager emphasizes the importance of focusing on the good of the whole.                           |
| 19. My manager has a long-term vision.   |
| 26. My manager emphasizes the societal responsibility of our work.                                       |

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### Appendix C: Psychological Safety Survey

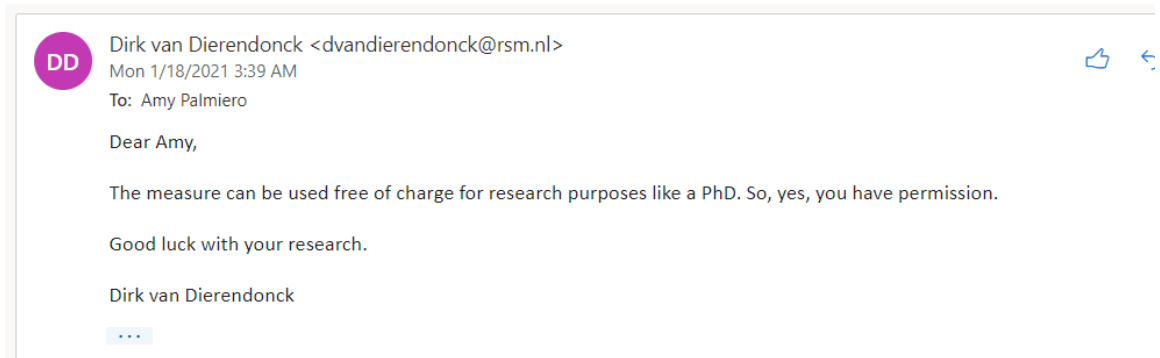
1. If you make a mistake on your team, it is often held against you (R).
2. Members of your team are able to bring up tough issues.
3. People on your team sometimes reject others for being different (R).
4. It is safe to take a risk on your team.
5. It is difficult to ask other members of your team for help (R).
6. No one on your team would deliberately act in a way that undermines your efforts.
7. Working with members of your team, your unique skills and talent are valued and utilized.

### Appendix D: Team Performance Survey

1. Your team meets or exceeds its customer's expectations.
2. Your team does superb work.
3. Critical quality errors occur frequently with your team's work (R).
4. Your team keeps getting better and better.



## Appendix E: Permission to Use Serving Leadership Survey



## Appendix F: Permission to Use Survey Instruments

September 21, 2020

Amy Palmiero  
Research Student at Walden University

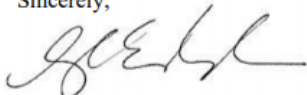
Re: Permission Granted for Measure of Instruments

Dear Amy:

Thank you for your interest in the previous research work performed on psychological safety and its connection to team performance. Please use this letter as my permission for you to use the instruments of measure for: 1) psychological safety scores and 2) team performance scores.

I appreciate your desire to perform additional research on the topic of psychological safety and wish you all the best in your future studies.

Sincerely,

A handwritten signature in black ink, appearing to read 'Amy Edmondson', written in a cursive style.

Dr. Amy Edmondson