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# Empowerment, Personality, and Leader-Member Exchange Quality in Physicians

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Tony S. Reed

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Walden University
2021

Abstract

Empowerment, Personality, and Leader-Member Exchange Quality in Physicians

by

Tony S. Reed, MD, MBA


M Phil, Walden University, 2019

MBA, Delaware State University, 2010

MD, Drexel University College of Medicine, 2000

BS, Wilkes University, 1996



Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Management



Walden University

February 2021

Abstract

Nearly 100,000 people suffer injury or death each year due to errors in the United States

healthcare system. Researchers have identified that empowerment by physicians can

address this significant social issue. Despite this knowledge, qualifications to

empowering behaviors in physicians have not been identified. A quantitative

nonexperimental correlation approach was used to determine the role that personality

type and high-quality leader-member exchange may play in the physician's ability to

create empowerment at academic medical centers in the United States. The theoretical

framework of empowering leadership, Jung's psychological types, and leader-member

exchange quality informed the research design and contributed to the understanding of

the findings. Data collection included the Myers-Briggs Type Indicator responses from

20 physicians at academic medical centers in the United States. In addition, 93 followers

completed the empowering leadership and the leader-member exchange quality surveys.

Analysis of covariance and partial correlation analysis using Pearson's correlation

coefficient were used to answer the study questions. The results of the study demonstrate

that no statistically significant relationship exists between empowering behavior and

personality type or between leader-member exchange quality and personality type. A

statistically significant relationship exists between empowering behavior and leader-

member exchange quality. The social change implications include an opportunity to

enhance physicians' skills as leaders of interprofessional teams. Those enhanced skills

may contribute to improved healthcare outcomes, decreased societal morbidity, and

increased life expectancy, thereby contributing positively to social change.

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Finally, I would like to acknowledge the dedication and effort put forth by my wife, Jillian, our three boys, Dane, Anderson, and Austin, my parents, Walt and Vicki, and my in-laws, Rich and Jean. They may not have always understood why I embarked on this journey – or the subject of my research – but they were always around to provide a strong support system when things got tough.

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Chapter 1: Introduction to the Study

Healthcare regulators recommend strengthening the patient safety culture through the adoption of team-based approaches to care, empowerment at all levels, and leadership training for physicians (Shekelle et al., 2013). Empowerment behavior in physicians has been linked to higher degrees of safety, quality, and satisfaction (Horwitz & Horwitz, 2017). Identifying mechanisms to predict empowerment behavior in physicians may lead to an informed selection of physicians to lead interprofessional teams. Identifying antecedents to empowerment behavior may facilitate leadership development in current and future physicians leading healthcare teams. The results of this study may lead to positive social change by providing physicians, healthcare executives, and leadership development trainers with insight into personality types that lead to high-performing teams known to deliver high-quality healthcare outcomes and increased patient safety.

In this chapter, I discuss the background and purpose of the study along with the theoretical foundation. A problem statement and the specific research questions are provided. I review the nature of the study and provide definitions, assumptions, scope, and limitations within the research. I conclude the chapter with an introduction of the significance of the study and transition to the literature review.

**Background of the Study**

Leadership engagement influences safety and quality in healthcare environments (Firth-Cozens & Mowbray, 2001). Interprofessional team-based care, communication, and physicians displaying transformational leadership traits contribute to the effect (Alloubani, Almatari, & Almukhtar, 2014). Organizational development professionals

have raised selecting leaders as a difficult challenge due to the lack of evidence to suggest a specific set of characteristics, traits, or experiences that predict success as a leader (Sethuraman & Suresh, 2014). A potential link between personality type, empowerment behavior, and leader-member exchange (LMX) quality may lead to informed decision-making when selecting and training physicians to be healthcare leaders (Firth-Cozens & Mowbray, 2001).

Physicians as healthcare leaders generate a stronger influence on safety and quality than other healthcare leaders due to their role as clinicians (Shekelle et al., 2013). Their experience in care delivery and knowledge of safe practices combined with their position in the clinical hierarchy of medical practice leads to referent followership by other members of the healthcare team (Hopkins, O'Neil, & Stoller, 2015). Physicians who are trained in leadership competencies and are willing to be perceived as leaders of interprofessional teams demonstrate greater success (Ten Have, Nap, & Tulleken, 2015; White et al., 2016). Leadership traits in physicians that correlate to increased safety in healthcare include structural empowerment and organizational commitment (Horwitz & Horwitz, 2017). Therefore, identifying antecedents to empowerment behavior as a mechanism to elevate levels of follower empowerment could increase safety and quality in care delivery.

Empowerment behavior has been associated with several leadership styles, including transformational leadership, servant leadership, and distributed leadership (Greenleaf, 1977; Günzel-Jensen, Jain, & Kjeldsen, 2016; Hersey & Blanchard, 1974). Distributed leadership most closely reflects the arrangement experienced by physicians

due to the complexity of the healthcare environment (Howard, Shaw, Felsen, & Crabtree, 2012). Direct line authority, interwoven with referent leadership, both within and across teams, creates a multifaceted environment where influence, power, and authority vary greatly (Nigam & Gao, 2017). Physicians often lead by empowering others in the healthcare environment to openly communicate and contribute to overall care delivery, while being willing to listen and follow their recommendations (Lee, Willis, & Tian, 2018; Palm, Ullström, Sandahl, & Bergman, 2015; Prilipko, 2019).

Personality impacts leadership due to its role as the underlying mechanism that impacts behavioral responses (Furnham & Stringfield, 1993). The Myers-Briggs Type Indicator (MBTI) uniquely measures personality type rather than traits. Whereas traits occur along a continuum, types are discrete categories where one preference within a dichotomy is preferred (Myers, McCaulley, Quenk, & Hammer, 2009). In executive leaders, the most common type preference occurs in a disproportionately high percentage when compared to the general population (Allinson, Armstrong, & Hayes, 2001). The same type preference presents in a higher percentage of physicians than the general population as well, comparable to the prevalence in executive leaders (Aranda & Tilton, 2013). Aranda and Tilton (2013) concluded that the similarity of type preference ratios between physicians and executive leaders reflects the natural leadership tendencies of an individual who choses medicine as a career. Personality type and empowerment directly correlate when leaders and followers have matching personality types (Garrety, Badham, Morrigan, Rifkin, & Zanko, 2003). However, it is not known if the correlation extends to physicians and their followers.

Congruence of personality types between leaders and followers has been associated with higher quality LMX relationships (Allinson et al., 2001). High quality LMX correlates with increased quality outcomes in healthcare settings and in higher scores on surveys assessing the organizational culture for patient and employee safety (Jungbauer, Loewenbrück, Reichman, Wendsche, & Wegge, 2018). However, how personality type and high-quality LMX relationships interact in their relationship with empowerment behavior has not been determined.

In this study, I explored empowerment behavior in physicians and the role that personality type and LMX quality play in a physician's ability to engender empowerment in their followers. Determining the role personality type and LMX quality plays in empowerment may help human resource officers and organizational development specialists select and train physicians to be leaders of interprofessional teams. Because of the role physicians play in the overall quality of care delivery and the role empowerment plays in the quality and safety in healthcare, understanding this relationship may lead to safer, higher quality healthcare.

**Problem Statement**

Healthcare regulators recommend strengthening the patient safety culture through the adoption of team-based approaches to care, empowerment at all levels, and leadership training for physicians (Shekelle et al., 2013). These recommendations came as a result of unnecessary risk and death to as many as 100,000 patients each year in the United States, according to the Institute of Medicine (2000). Empowerment behavior in physicians has been linked to higher degrees of safety, quality, and satisfaction (Horwitz & Horwitz,

2017). Tasi, Keswani, and Bozic (2019) reported that physician-led healthcare organizations demonstrate higher performance on quality and safety rankings in the United States while performing equally to nonphysician led organizations in financial measures. The general management problem is that physicians proportionally influence the safety and quality of healthcare delivery more than any other group of individuals and assume powerful roles with variable levels of empowerment behavior (Nigam & Gao, 2017; Xirasagar, Samuels, & Stoskopf, 2005). Firth-Cozens and Mobray (2001) suggested a link between personality type, empowerment behavior, and LMX quality as a mechanism to enhance safety, quality, and efficiency in healthcare systems. However, the nature of that relationship has not yet been defined. A lack of authority and poor preparation for leadership roles cause physicians to use their innate personality preferences and autonomous clinical training as a guide for leadership behavior (Aranda & Tilton, 2013; Huynh & Sweeny, 2014; Quinn & Perelli, 2016).

The specific management problem is a limited understanding of the role that personality types and high-quality LMX may play in the physician's ability to engender empowerment at academic medical centers in the United States. Physicians who assume leadership roles may develop a disconnect between their clinical identities and their leadership identities, a phenomenon not demonstrated in other professions (Quinn & Perelli, 2016). The behaviors associated with these conflicting identities can clash with optimal leadership competencies (Emanuel & Emanuel, 1992). A gap in the literature exists regarding the role that personality types and high-quality LMX may play in the physician's ability to engender empowerment (Hopkins et al., 2015).

**Purpose of the Study**

The purpose of this quantitative nonexperimental correlation study was to determine the role that personality types and high-quality LMX, both independent variables, may play in the physician's ability to engender empowerment, the dependent variable, at academic medical centers in the United States. A quantitative nonexperimental correlation study was performed to address the gap in the literature (see Salkind, 2010). Data were collected from physicians and their followers. Personality, an independent variable, was generally defined as the physician's personality type as indicated by the MBTI. LMX quality, an independent variable, was generally defined as the composite score of LMX quality for the physician. Empowerment behavior, the dependent variable, was generally defined as the degree to which the physician empowers followers through his or her interactions with them.

**Research Questions and Hypotheses**

Research Question (RQ)1: To what extent, if any, is there a relationship between personality types and empowerment behavior measured in physicians at academic medical centers in the United States?

$H_0$1: There is no relationship between personality types and empowerment behavior measured in physicians at academic medical centers in the United States.

$H_A$1: There is a relationship between personality types and empowerment behavior measured in physicians at academic medical centers in the United States.

RQ2: To what extent, if any, is there a relationship between LMX quality and empowerment behavior measured in physicians at academic medical centers in the United States?

$H_0$2: There is no relationship between LMX quality and empowerment behavior measured in physicians at academic medical centers in the United States.

$H_A$2: There is a relationship between LMX quality and empowerment behavior measured in physicians at academic medical centers in the United States.

RQ3: To what extent, if any, is there a relationship between personality types and LMX quality measured in physicians at academic medical centers in the United States?

$H_0$3: There is no relationship between personality types and LMX quality measured in physicians at academic medical centers in the United States.

$H_A$3: There is a relationship between LMX quality and personality types measured in physicians at academic medical centers in the United States.

## Theoretical Foundation

The theoretical framework for this study included the psychological typology theory of personalities, empowerment theory, and LMX theory. Jung (1971) first described psychological typology in 1921 when he defined groups of traits that individuals displayed as their outward character. He characterized personality as the unconscious self, both personal and collective, segregated into archetypes. These include introversion versus extraversion, thinking versus feeling, and sensing versus intuition (Jung, 1971).

Empowerment theory has roots in sociological theory, which posits that the relationship between management and frontline labor produces a dynamic that allows ideas from the labor force to be put into operation (Rappaport, 1984). Rappaport, Swift, and Hess (1984) theorized that every social problem has more than one solution, and giving individuals of the community the power to solve problems leads to better solutions. Through this frontline empowerment, creative and innovative solutions may lead to improved conditions and positive social change.

LMX theory, with roots in role theory, centers on the relationship between leader and subordinate to ascribe job duties for the subordinate and authority to the leader (Dansereau, Graen, & Haga, 1975). The evolution from vertical dyad theory to role theory to LMX theory occurred as more researchers fleshed out the behavioral aspects that lead to optimized work performance in the follower (Burns & Otte, 1999). A high-quality relationship exists when each member of the dyad develops mutual trust and respect with a reliance on continued role performance.

These three underlying theories can be integrated to study the effect of various personality types on the leader's ability to empower followers to innovate solutions to improve the delivery of healthcare. The relationship between a leader and a follower can be evaluated in the context of the personality types to determine if one type in the leader results in a higher quality relationship with the follower and greater levels of follower empowerment.

**Nature of the Study**

The nature of the study was a quantitative nonexperimental correlation design using the Empowering Leadership Scale (ELS) survey instrument, the MBTI personality inventory, and the Multidimensional LMX quality survey instrument to assess the relationship between empowerment behaviors, personality type, and LMX quality in physicians. Quantitative correlation analysis aligned with the problem statement and purpose because the relationship between empowerment behavior, personality type, and LMX quality was determined in this study (see Frankfort-Nachmias & Leon-Guerrero, 2018; Leppink, 2018).

Empowerment behavior, the dependent variable, was measured using the ELS developed by Amundsen and Martinsen (2014). Personality type, an independent variable, was measured using the MBTI (Myers et al., 2009). LMX quality, an independent variable, was measured using the multidimensional LMX scale developed by Liden and Maslyn (1998). Personality type and LMX scores were analyzed for the presence of collinearity and to determine if they are covariates (see Salkind, 2010).

Physicians at academic medical centers were engaged to be participants in this study. Academic medical center physicians were chosen specifically because of their common status as employees and their unique association with a national society of academic medical centers. After granting informed consent, these physicians used an online survey tool to provide demographic information and then received access to the online version of the MBTI through the Myers-Briggs assessment site, Elevate (The

Myers-Briggs Company, 2018). The assessment site allowed participants to navigate through the instrument and automatically collected and stored personality type data.

Physicians participating in the study were asked to provide the names of followers to receive surveys about the physician. A follower could be a referent or direct subordinate who performs healthcare services as a member of the physician's clinical team. Both subordinate and referent followers have been validated to be relevant followers to the distributed leadership models employed in interprofessional healthcare teams (Günzel-Jensen et al., 2016; Oborn, Barrett, & Dawson, 2013). Followers were randomly selected and asked to participate via an email solicitation. After reading and electronically signing an informed consent on page 1, respondents completed a 3-page web-based survey using Survey Monkey (see SurveyMonkey, 2018). The survey consisted of a demographics page, the ELS survey (Amundsen & Martinsen, 2014), and the LMX survey (Liden & Maslyn, 1998) instrument.

Analysis began with individual-level follower responses being aggregated into a group-level response for each physician and measured for interrater reliability (see James, Demaree, & Wolf, 1984). Analysis of variance (ANOVA) was used in this study to evaluate the study questions (see Salkind, 2010). The two independent variables of personality type and LMX quality score were tested for normality, homoscedasticity, skewness, and distribution of variance to evaluate the appropriateness of ANOVA (see Barker & Shaw, 2015; Yang & Mathew, 2018). They were tested for interaction and collinearity as a condition of ANOVA (see Scariano & Davenport, 1987).

**Definitions**

*Academic medical center:* A hospital delivering advanced medical and surgical care that is organizationally and administratively linked to a medical school and serves as a primary teaching site for medical students (Joint Commission International, 2020).

*Empowerment behavior:* The external manifestation of empowerment that can be identified by others and measured by researchers (Cheong, Yammarino, Dionne, Spain, & Tsai, 2018). Empowerment behavior serves as the conceptualization of empowerment across all theories (Pratto, 2016).

*Follower:* An individual or group of individuals who identify with leaders through several mechanisms (Shamir, 2004). Direct followers are subordinates of the leader (Rappaport, 1984). Referent followers believe the leader's mission, objectives, or core values (Agho, 2009; Prilipko, 2019). In the healthcare setting, members of an interprofessional clinical team become followers of the physician through the medical training hierarchy and regulations for autonomous practice authority.

*Leader-member exchange quality:* The strength of the relationship between leader and follower (Dansereau et al., 1975). High-quality indicates strong relationships between leader and follower while low-quality indicates a not well-established relationship.

*Personality type:* Jung (1971) first described psychological typology of personality in 1921 when he defined groups of discrete characteristics that individuals displayed as their outward character. Briggs expanded personality type theory to include four dichotomous pairs of characteristics that describe the outward display (Myers et al.,

2009). Type differs from personality traits, which can be displayed in varying degrees or amounts (Myers et al., 2009).

## Assumptions

Interprofessional healthcare teams commonly perform in the clinical setting without an authoritative leader. Members often do not work for the same organization and generally do not work in the same hierarchical structure of direct line authority. Historical context and current regulation place the physician as the *de facto* leader of the team. An assumption in this study was that members of the interprofessional team performed as referent followers of the physician secondary to the historical factors and because all members shared the common vision and goal of patient safety and quality healthcare delivery. This assumption was critical to the study because the team construct formed the basis for how leaders and followers were chosen as study participants.

A second assumption of the study was that referent and subordinate followers held similar views on the empowerment behaviors of the physician. Physicians have a mix of direct reports, subordinates, and referent followers who directly report to other leaders in the organizational leadership matrix. The extraordinarily complex environment of organizational structure versus functional units in a healthcare system combined with the broad array of organizational structures deployed in academic medical centers across the United States necessitated this assumption in this study.

## Scope and Delimitations

My focus in this study was on academic medical center physicians. Excluded physicians included those in environments other than academic medical centers,

including but not limited to community hospitals, private practice, nursing homes and other post-acute facilities, and nontraditional environments of physician practice. Academic medical centers were chosen because of their common status as employees and their unique association with a national society of academic medical centers. Academic medical centers also have larger interprofessional teams due to the presence of many layers of learners, such as medical students, residents, and fellows.

Followership theory closely aligns to LMX theory and was not incorporated into the theoretical framework (see Prilipko, 2019). Followership theory addresses the leader-follower dyad from the perspective of the follower whereas LMX centers on the relationship between leader and follower (Pratto, 2016). Because I investigated the leader's ability to engender empowerment, the focus on the relationship bore greater importance in the study design.

Generalizability may be limited to physicians who lead interprofessional teams in an academic environment in the United States. The differences in the composition of the team in a community hospital setting or in a privately owned office may lend an opportunity for uncontrolled variables to exist. Strategic vision may not be as clearly defined, and the longevity of the individual members of the team with the organization may differ from in the academic setting. The United States health care system differs in many ways from other countries. Political and regulatory constraints differ as do the general constructs of the payment and employment system. Cultural beliefs on the role of the health care sector in society may also differ across countries.

**Limitations**

External validity may be challenged by respondents' interpretation of test questions or their attentiveness to the subject of evaluating their own performance or that of their leader. Statistics of interrater reliability in the followers address validity in their responses (James et al., 1984). External validity may also be threatened by uncontrolled variables. While a literature review has uncovered many potential variables and confounders, other previously unknown factors may exist that become apparent in the study (see Bernerth, Cole, Taylor, & Walker, 2018). Pre-hoc analysis of the collected data to address collinearity was performed to minimize this threat to external validity.

Internal validity of a study can be threatened by history, maturation of the subjects, the effects of retesting, instrumentation, statistical regression, selection bias, experimental mortality, and demoralization of the respondents (Babbie, 2017). The study design precluded many of these threats as this was a single-day survey where each participant responded only once to their survey tool. Selection of participants through a nonrandom convenience sample was the greatest threat to validity. Generalizability would have been limited if a diverse population in age, gender, ethnicity, and geographic respondents had not occurred. This possibility is addressed in the descriptive statistics and is interpreted in the discussion section of the dissertation.

The survey design lends itself to the possibility of construct validity. The LMX Survey and the Empowerment Leadership Survey have not been used together. Therefore, interaction of the two could have led to conflicting answers that altered the

statistical results. Altering the presentation of the two surveys randomly from one study

participant to the next may reduce the possibility of response bias.

<center>**Significance of the Study**</center>

A significant relationship between empowering behavior in healthcare leaders and

safety and quality of healthcare delivery has been determined in prior studies (Alloubani

et al., 2014; Firth-Cozens & Mowbray, 2001; Horwitz & Horwitz, 2017). High-quality

LMX relationships have been correlated to improved outcomes (Carter, Armenakis,

Feild, & Mossholder, 2012; Hanse, Harlin, Jarebrant, Ulin, & Winkel, 2014; Jungbauer et

al., 2018). No prior study has connected empowerment behavior to personality type and

LMX quality in a healthcare environment. A connection may fill a gap in the knowledge

of physicians' personality types that support empowerment and the impact of high-

quality LMX relationships on empowerment, which in turn may lead to improved

healthcare outcomes.

**Significance to Theory**

This research may fill a gap in the knowledge of physicians' personality types that

support empowerment and the impact of high-quality LMX relationships on

empowerment. In business leaders, the Myers-Briggs personality type dichotomies of

introversion/extraversion and judging/perceiving have been demonstrated to correlate

with higher levels of empowerment (Greasley & Bocârnea, 2014). In pharmaceutical

managers, the dichotomies of sensing/intuitive and thinking/feeling have been

demonstrated to correlate with higher levels of empowerment (Gordon, 2002).

Leadership behaviors such as empowerment have been correlated with improved job

satisfaction and higher quality outcome scores from followers (Hanse, Harlin, Jarebrant, Ulin, & Winkel, 2016). This research study is unique because I measured the construct of physicians as leaders of interprofessional teams, how their personalities impact followers, and the relationship between the leader and follower. Connections have been made between empowerment and LMX quality (see Hanse et al., 2016). Connections have not been made between empowerment and LMX quality as covariates interacting with personality, and the interaction between the three variables has not been studied in physicians.

**Significance to Practice**

The role personality plays in determining the success of a leader has not been defined. The personality type preference extraversion-sensing-thinking- judging occurs with greater frequency in corporate leaders than in general society (Myers et al., 2009). More recent evidence has suggested this same type preference to occur with higher frequency in physicians (Aranda & Tilton, 2013). The significance of that higher frequency in either population has not been determined. LMX quality and congruence of personality types have been correlated as has LMX quality and empowerment behavior (Allinson et al., 2001; Garrety et al., 2003). Understanding the role personality plays as an antecedent to empowering behavior may help health system executives predict which physicians may be more successful as organizational leaders and may help inform organizational and leadership development professionals as they teach leadership skills and competencies to physicians.

**Significance to Social Change**

The results of this study may lead to positive social change by providing physicians, healthcare executives, and leadership development trainers with insight into personality types that lead to high-performing teams known to deliver high-quality healthcare outcomes and increased patient safety. Improved outcomes and safety lead to decreased societal morbidity, greater levels of health, and increased life expectancy (Cinaroglu & Baser, 2018). Knowing how to maximize physicians' empowering behaviors could help guide future research and medical education curricula on physician leadership.

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**Summary and Transition**

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Empowerment behavior in physicians has been linked to higher degrees of patient safety, quality of care delivery, and satisfaction (Horwitz & Horwitz, 2017). Higher degrees of empowerment behavior lead to team-based approaches to care, empowerment, and leadership training for physicians (Shekelle et al., 2013). Identifying antecedents to empowerment behavior may facilitate leadership development in current and future physicians leading healthcare teams. Personality impacts leadership because it impacts behavioral responses (Furnham & Stringfield, 1993). LMX quality directly correlates to empowering behavior and is higher when the leader and follower have similar personality types (Allinson et al., 2001). Identifying a potential link between personality type, empowerment behavior, and LMX quality may help organizational leaders increase safety and enhance quality in healthcare environments (Firth-Cozens & Mowbray, 2001).

This study was a quantitative nonexperimental correlation design using the ELS survey instrument, the MBTI personality inventory, and the LMX quality survey instrument to assess the relationship between empowerment behaviors, personality type, and LMX quality in physicians at academic medical centers in the United States. The population was chosen due to the unique environment of multiple layers of team members, including direct subordinates and referent followers, trainees and independent practitioners, and healthcare professionals of many disciplines and professional backgrounds. Participants included physicians working in academic medical centers and a selection of their team members who serve as followers of the physician. Data analysis included ANOVA to determine the relationship between empowering behavior and personality and analysis of covariance (ANCOVA) to determine the relationship between empowering behavior and LMX quality.

The results of this study may lead to positive social change by providing physicians, healthcare executives, and leadership development trainers with insight into personality types that lead to high-performing teams known to deliver high-quality healthcare outcomes and increased patient safety. A more extensive review of the literature regarding physicians as healthcare leaders, empowerment behavior, personality, and LMX quality follows along with evidence and support for the selected study methodology.

Chapter 2: Literature Review

The problem is that physicians proportionally influence the safety and quality of healthcare delivery more than any other group of individuals and assume powerful roles with variable levels of empowerment behavior (Nigam & Gao, 2017; Xirasagar et al., 2005). However, the lack of authority granted to them and poor preparation for leadership cause physicians to use their innate personality preferences and autonomous clinical training as a guide for leadership behavior (Aranda & Tilton, 2013; Huynh & Sweeny, 2014). Researchers have not demonstrated the relationship between empowerment behaviors of physicians, their personality types measured on the MBTI, and the impact of a high-quality LMX between physicians and their followers. Therefore, a gap in the literature exists regarding the role that personality types and high-quality LMX may play in the physician's ability to engender empowerment (Hopkins et al., 2015).

The purpose of this quantitative nonexperimental correlation study was to determine the role personality types and high-quality LMX, both independent variables, may play in the physician's ability to engender empowerment, the dependent variable, at academic medical centers in the United States. A review of the extant literature on the leadership effect on safety and quality in healthcare, physician-leadership development and practice, empowerment behavior, personality as a function of leadership, and LMX quality follows in this chapter.

**Literature Search Strategy**

A search strategy involving multiple search engines and several databases was used in the development of this literature review. Google Scholar (2019) was used to

search the Walden University and Temple University library databases as well as the Research Gate, Academia, and Semantic Scholar literature repositories. Within the libraries, I focused on articles contained within Emerald Insight, SAGE, Taylor and Francis Online, CINAHL, Medline, and PsycTests because those databases organized full-document, peer-reviewed articles on leadership, the healthcare system, and other search terms applicable to this study.

The literature review occurred over a 15-month period with the development of a Rich Site Summary web feed to alert me to new articles on the topics of followership and empowering leadership. Focused searches during that time resulted in detailed peer-reviewed articles on specific elements of the literature review. Sentinel writings such as *Psychological Types* (Jung, 1971) and Briggs's and Myers's description of personality types (Myers et al., 2009) contributed to the theoretical framework. Rappaport et al.'s (1984) empowerment theory was core to this study's theoretical framework and spawned out of an extended search on distributed leadership. Vertical dyad theory (Dansereau et al., 1975), which led to LMX theory served as the third theoretical construct in this study and stemmed from a literature review on followership in healthcare relationships.

The impact of leadership and of physicians on safety and quality in healthcare was explored using the terms *quality*, *safety*, *patient-centered care*, *leadership*, *The Joint Commission*, *Patient Safety Institute*, *front-line leadership*, *unit-based leadership*, and *team-based care*. Search terms to collect data on the participants included *physician leadership*, *leadership development in healthcare*, *physician leadership development*, *clinical leadership*, and *physician leadership style*. The search for literature on

empowerment included the search terms *empowerment*, *empowering leadership*, *team-based decision-making*, *distributed leadership*, *psychological empowerment*, *role theory*, and *empowerment behavior*. Literature on personality was identified using terms such as *personality*, *personality type*, *Myers-Briggs Type Indicator*, *MBTI*, *leadership personality*, and *physician personality*. Searches on LMX quality involved use of the terms *leader-member exchange*, *leader-member exchange quality*, *followership theory*, *vertical dyad theory*, and *employer-employee relationships*. Cross-group terms also proved useful in identifying relationships between the variables tested in this study. For example, the Boolean search for *physician leadership* and *empowerment behavior* and *leader-member exchange quality* provided studies that evaluated the quality of the relationship between healthcare leaders using servant leadership and their followers (see Hanse et al., 2016).

A literature review on the methods used in this study included the search terms *quantitative correlational*, *preexperimental versus experimental*, *descriptive statistics*, *correlation versus causation statistical analysis*, *probability versus nonprobability sampling*, *convenience sampling*, and *survey-based research*. A drill down on survey methods included the search terms *response versus nonresponse bias*, *electronic survey methods*, *survey participant recruitment*, *email as a recruiting tool*, *paper versus internet surveys*, *physician survey response rates*, *validity of surveys*, *reliability of surveys*, and *statistical power in survey research*. The choice of statistical analysis in this study was supported from literature identified with the search terms *analysis of variance*, *ANOVA*, *analysis of covariance*, *ANCOVA*, *violations of assumptions in ANOVA*, *moderated*

*regression*, *group results in leader evaluation*, *within-group agreement*, *interrater*

*reliability*, and *Likert responses*. Each search led to further review and refinement of the

methodology as it built upon results from the earlier literature search terms.

## Theoretical Foundation

The theoretical framework for this study included the psychological typology

theory of personalities, empowerment theory, and LMX theory. These three underlying

theories can be integrated to study the effect of various personality types on the leader's

ability to empower followers to innovate solutions to improve the delivery of healthcare.

Simultaneously, the relationship between a leader and a follower can be evaluated in the

context of the personality types to determine if one type in the leader results in a higher

quality relationship with the follower and greater levels of follower empowerment.

### Psychological Typology Theory

Jung (1971) first described psychological typology in 1921 when he defined

groups of traits that individuals displayed as their outward character. In Jungian theory,

personality represents the unconscious, both personal and collective. He first considered

energy flow by dividing people into introverts and extraverts (Myers et al., 2009).

Introverts direct their energy inward towards their own thoughts and experiences while

extraverts draw their energy from others and in the interactions (Jung, 1971). In this way,

introversion appears in a person as being reserved, quiet, and pensive while people who

prefer extraversion present as gregarious, charismatic individuals who interact efficiently

with others (Clack, 2017).

Jung (1971) later identified two pairs of opposite mental functions, thinking versus feeling and sensation versus intuition. Thinking versus feeling refers to the judging functions where an individual processes information and draws conclusions (Myers et al., 2009). People who prefer thinking rely on objective data and information received while people who prefer feeling make decisions based on subjective emotions and personal values (Jung, 1971). Jung described sensation as a vital instinct, viewed by the individual through his or her perception, and presented in logical, sequential steps. Conversely, he described the personality type intuitive as being focused on a larger vision, not confined by perceived objective data. Together, the judging and perceiving functions form the mental dynamics with which an individual receives and reacts to their environment (Myers et al., 2009).

Culture and environment influence these predominantly genetic personality types, often creating trends within specific regions of the world and influencing leadership behaviors as well as follower perceptions of the behaviors (Furnham & Stringfield, 1993). These influences on both leaders and followers have been studied in leadership science in order to progress knowledge on traits and behaviors that may promote positive relationships between leaders and followers (Strang & Kuhnert, 2009). In the current study, I used personality typology theory as a theoretical framework to study types that may facilitate empowerment and that may lead to higher quality relationships between leaders and followers in order to produce higher quality outcomes in healthcare delivery.

**Empowerment Theory**

Rappaport et al. (1984) theorized that every social problem has more than one solution, and giving individuals of the community the power to solve problems leads to better solutions. Empowerment theory has roots in sociological theory, which posits that the relationship between management and frontline labor produces a dynamic that allows ideas from the labor force to be put into operation (Rappaport, 1984). The ascribed decision-making capacity granted to the follower leads to individual determination and a psychological sense of control (Rappaport, 1987). Therefore, individuals have authority and ownership over the actions they take and the work they perform, which leads to increased attentiveness and higher levels of satisfaction.

Rappaport (1987) further theorized that community psychology could help understand the macrosocial changes that occur when large groups of followers within a work setting have been empowered to collaborate and determine the path forward for that workgroup. Followership theory further extends the concept of empowerment theory by shifting the paradigm to the vantage of the employees (Palm et al., 2015). By having favorable work conditions and confidence that leaders would support the generation of new ideas, followers increasingly grow in their respect of the manager and job satisfaction. The increased number of derived solutions also leads to decision-making that maximizes the community self-interest and produces greater outcomes for the organization served (Rappaport et al., 1984).

In 1987, Rappaport described the assumptions of his empowerment theory and how psychological empowerment appears when its externalized by a follower.

Empowerment theory is a multilevel construct where one level impacts others in meaningful ways. The cultural fit of the individual in the setting and the history of the individual also influences how empowerment presents in each follower. The size of the setting influences the effect of empowerment on the followers. In an empowered environment, followers get treated as collaborators, have the option to participate in decision-making, and can be impacted by the method of communication used by the leader and each other. Rappaport (1987) concluded the assumptions of empowerment theory by explicitly stating that "empowerment is not a scarce resource which gets used-up, but rather, once adopted as an ideology, empowerment tends to expand resources" (p. 142).

Prior works have addressed the impact of empowerment theory on healthcare quality and safety as well as the relationship between leader and follower in the delivery of care (Bonias, Bartram, Leggat, & Stanton, 2010). In this study, I expanded upon the idea that empowerment extends the reach of physicians who lead healthcare teams by encouraging the conscientious decision-making skills of followers who have been appropriately motivated by those physicians.

**Leader-Member Exchange Theory**

LMX theory centers on the relationship between leader and follower (Dansereau et al., 1975). A high-quality relationship exists when each member of the dyad develops mutual trust and respect with a reliance on continued role performance. The relationship evolves and progresses through a series of stages over time (Scandura & Pellegrini, 2008). It starts in the stranger phase, then the acquaintance phase, and a mature

partnership as the leader and follower build confidence and trust in each other. Dansereau and Graen first described role theory before furthering the model in later analysis (Dansereau et al., 1975). The evolution from vertical dyad theory to role theory to LMX theory occurred as more researchers fleshed out the behavioral aspects that led to optimized work performance in the follower (Burns & Otte, 1999). The importance of each participants competencies and strengths sets LMX theory apart from role theory and vertical dyad theory.

LMX quality theory also considers the difference in performance between *in-group* and *out-group* followers of a leader (Burns & Otte, 1999). Leaders often subconsciously support in-group followers at higher levels than others and may provide greater resources and opportunities. The level of differential support dictates the followers negotiating latitude, which combines with each participant's contribution to the relationship and the overall outcome of the exchange (Dansereau et al., 1975). In healthcare, LMX quality has been studied in interprofessional teams and the psychosocial factors that affect how each member contributes to the outcomes (Hanse et al., 2014). It has also been studied with regards to a culture of patient safety (Jungbauer et al., 2018). I used LMX quality as a potential covariate to the relationship between personality type in the leader and the leader's empowerment behavior as observed by the follower. Effects of LMX quality on empowerment have been studied (Scandura & Pellegrini, 2008). Effects of personality on LMX quality has also been studied (Allinson et al., 2001). However, LMX quality has not been studied in physicians as a covariate between empowerment and personality.

**Integration of Theories**

Across all cultures, power distance influences the impact of LMX quality on empowerment (Tu & Lu, 2016). In cultures where high power distance occurs between leader and follower, LMX weighs more heavily on the empowerment afforded to the follower by the leader. Factors associated with the leader, such as their psychosocial leadership behaviors, contribute to the relationship and are correlated with improved job satisfaction and higher quality outcome scores from followers (Hanse et al., 2016). The Myers-Briggs Personality Type dichotomies of introversion/extraversion and judging/perceiving have been demonstrated to correlate to higher levels of empowerment (Greasley & Bocârnea, 2014). The combination of followers' empowered responses with a high-quality LMX relationship has been demonstrated to impact outcomes like productivity, satisfaction, and quality of work (Inceoglu, Thomas, Chu, Plans, & Gerbasi, 2018; Wong & Giessner, 2018). It follows that the relationship between empowerment behavior and personality type may be mediated by the level of quality of the LMX relationship.

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**Literature Review**

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**The Leadership Effect on Safety and Quality in Healthcare**

Healthcare leadership has been demonstrated to be a factor in the overall safety and quality of care delivered to patients (Alloubani et al., 2014; Firth-Cozens & Mowbray, 2001; The Joint Commission, 2017). The leadership effect presents stronger in environments where communication, team-based care, and change management competencies are more highly valued (Kristensen et al., 2016). Educating and training

healthcare leaders in transformational leadership has demonstrated greater improvement in outcomes than when the same program was used in non-healthcare industries (Alloubani et al., 2014). For that reason, increased attention has been given to selecting and growing leaders in the healthcare sector in the United States. Health systems have worked to develop training programs and to cultivate leaders from within their organization to capitalize on this knowledge (McAlearney, 2006).

**Selecting leaders.** Leader selection has come to the forefront in organizational development programs because of the increase in attention on the effects of a well-positioned healthcare leader. No evidence exists to suggest a specific leadership style or education program performs superior to others overall, rather fundamental skills and competencies, which can be taught, produce the differences in leadership outcomes (Sethuraman & Suresh, 2014). However, differences in personalities of leaders have been associated with higher levels of success when working with followers in different stages of development (Sethuraman & Suresh, 2014). Firth-Cozens and Mobray (2001) suggested a link between personality type, empowerment behavior, and LMX quality as a possible mechanism to enhance safety, quality, and efficiency in healthcare systems. The evidence does not specifically address how personality influences outcomes and does not inform of the differences in leadership style by individuals with similar or opposite personality types.

**The impact of physician leaders.** Physicians in healthcare leadership have a stronger influence on safety and quality than nonphysicians secondary to their dual role as providers and administrators (Shekelle et al., 2013). A dual role occurs through

physician leaders' experiences as clinicians and as informal leaders of clinical teams (Quinn & Perelli, 2016). Physicians are also uniquely positioned in clinical settings as leaders in care delivery which contributes to their connection to patient safety outcomes (Campione & Famolaro, 2018). When physicians engage in performance improvement activities with teams, their clinical influence lends itself to administrative leadership and team management. In this way, their clinically derived competencies of empathy, self-awareness, service-orientation, and collaboration augment their clinical knowledge (Hopkins et al., 2015). The addition of team-based training further refines their skills in frontline leadership positions within interprofessional clinical teams (Kotecha et al., 2015).

Healthcare leaders identified attention to strategy, culture, and personnel development as being instrumental to their success (McAlearney, 2006). Physicians identified willingness to be perceived as leaders and training in team-based care as additional factors in their success (White et al., 2016). Medical schools did not traditionally include training in leadership or team-based care. Admission committees also did not focus on characteristics of leadership, but rather skills and traits that would predict success in a high-demand environment where individual function held greater impact. However, as literature grew on the impact of interprofessional teams and shared decision-making on a culture of safety in healthcare environments, medical school curricula committees increased their attention on the subject (Seshia et al., 2017). Current researchers have added hospital leaders' responsibility towards the development of an organizational culture that contributes to safety and quality care delivery (Bradley et al.,

2018). Factors that contribute to interprofessional team performance have also been a more recent focus of investigation (Ten Have et al., 2015). These studies contribute to the foundational knowledge on leadership traits antecedent to empowerment and high-quality relationships between leaders and followers. These antecedents, such as personality, potentially impact the safety and quality of healthcare delivery.

**Desired competencies of leaders.** Hogan, Curphy, and Hogan (1994) reviewed the extant literature on leadership and found that a personality favorable to agreeableness, communication, and conscientiousness predicts leadership success. In the time since that study, McCleskey (2014) determined that leadership theory matters and that transformational leaders have higher degrees of communication and conscientiousness. Binci, Cerruti, and Braganza (2016) studied vertical and horizontal leadership to conclude that direct and referent leadership augment each other in the function of interprofessional healthcare teams. These factors contribute to the importance of studying how physicians as clinical and administrative leaders may positively influence safety and quality in healthcare delivery through displaying empowerment behavior towards frontline interprofessional team members and by having high quality LMX relationships with their team members.

Horwitz and Horwitz (2017) studied affective organizational commitment and structural empowerment displayed by physicians as influencers of a patient safety culture. Empowerment led to engagement which led to safer environments in their study. Subsequent research led to factors of interprofessional teamwork that improved safety and quality in a healthcare organization (Ginsburg, 2013; Salas, Zajac, & Marlow, 2018).

Among those factors were psychological safety through empowerment, enhanced

communication within and between teams, and system redundancy that reduced errors. In

both studies, communication failure was the leading cause of errors in teams, often due to

team members' discomfort in voicing their concerns about a given situation. The positive

factors of team development were attributed to transformational physician leadership

supportive of the culture and the initiative to form empowered frontline teams.

  Other effects of well positioned leadership include burnout and stress mitigation

in followers (Rosenthal, Landers, Gamble, Mauro, & Grigsby, 2019). Cultures with high

power distances often have an exaggerated paternalistic relationship between a leader and

followers where followers empower leaders to make decisions about their personal lives

(Fock, Hui, Au, & Bond, 2013). Physicians can be susceptible to reacting

paternalistically due to prior experiences and must learn to temper that response in

cultures like the United States with low power distance. Even in low power distance

cultures, well-being and resilience are heavily influenced by leaders (Galletta,

Portoghese, Fabbri, Pilia, & Campagna, 2016; Montgomery, 2016). Leaders with high

degrees of emotional intelligence, empathy, and compassion lead teams who perform

better in high stress environments. Employees' increased sense of control over the

essential tasks of their job also contributes to greater outcomes in these environments

(Galletta et al., 2016). Physicians who have had leadership training often perform better

on assessments of well-being, stress, and burnout (Montgomery, 2016). For these reasons

and those previously addressed, several medical training programs have added leadership

development courses into their curricula for all physicians (Fernandez, Noble, Jensen, & Chapin, 2016; Pradarelli, Jaffe, Lemak, Mulholland, & Dimick, 2016).

**Leadership Development and Practice in Physicians**

Selecting physician leaders who display traits such as empowering behaviors, affective commitment, structural empathy, and emotional intelligence precedes the development of a culture of safety and high quality in healthcare (Shekelle et al., 2013). In a qualitative analysis, physicians with administrative roles identified empathy, emotional self-awareness, service orientation, and the desire to grow others as common themes to their success (Hopkins et al., 2015). These traits correlate to personality and specific leadership styles, many of which can be modified with leadership development programs (Hogan, Curphy, & Hogan, 1994). Specifically, transformational leadership in physicians has been correlated to effectiveness in improving safety and quality through highly developed relationships with followers where distributed team leadership occurred (Xirasagar et al., 2005).

**Leadership development in physicians.** Physicians rely on their clinical skills to activate, motivate, and change patients' behaviors. The relationships that develop between physicians and patients mimic those of leaders and followers. Physicians may be paternalistic, informative, interpretative, or deliberative in their interactions with patients depending on the need (Emanuel & Emanuel, 1992). Repeating these structured interpersonal interactions with each patient encounter leads to engrained models of behavior displayed by physicians in the clinical environment.

Physicians without specific leadership or business training use this highly developed skill of interpersonal interactions in their administrative relationships as well. The misplaced use of specific interactive styles may interfere with the physician's effectiveness in completing administrative tasks. For this reason, new physicians and new physicians in leadership frequently identify leadership development as essential to their success (Keogh, 2017; Mukherjee et al., 2019; Ochonma & Nwatu, 2018).

Physicians in administrative roles frequently develop dual professional identities secondary to the necessary strength of the interpersonal skills of clinical practice combined with the more collaborative skills of effective leadership (Quinn & Perelli, 2016). An antecedent to formal training, formative learning in residents also contributes to physician leadership development. Several groups have studied the impact of leadership training on physicians during this formative period and have identified positive outcomes in teamwork, distributed leadership, and interpersonal communication (Fernandez et al., 2016; Gordon, Rees, Ker, & Cleland, 2015; Pradarelli et al., 2016).

**Leadership style.** Hersey and Blanchard (1974) first described transformational leadership as a relationship-centered approach to encourage followers to engage in the leader's goals. They contrasted relationship-focused leaders with task-focused leaders and identified the behavioral differences in the approaches. Hersey and Blanchard described the persistent behaviors of leaders as *leadership style*. Central to their theory was the concept that leaders can adapt their leadership style to suit the needs of the follower and the situation. Subsequent researchers documented the flexibility of situational leadership in senior physician executives (Chapman, Johnson, & Kilner,

2014). These leaders reported using different tactics and leadership competencies to meet the needs of their followers, the organizational culture, and the activity being performed.

The ability of those physicians to adapt to leadership was not preceded by formal leadership training and was based on their innate skills learned as clinicians (Chapman et al., 2014). Huynh and Sweeny (2014) specifically related the clinical training of physicians to motivate patients and to influence people to adopt healthier lifestyles to specific elements of transformational leadership. They postulated that physicians' learned behaviors enhanced the quality of the relationship they had with their patients, which led to increased influence, inspirational motivation, intellectual stimulation, and individual consideration. Followers and subordinates of physicians mirror the same response as patients, with the most motivated and ambitious displaying the highest degrees of engagement with the physician leader (Holstad, Korek, Rigotti, & Mohr, 2014).

Transformational leadership as measured on the multifactor leadership questionnaire directly correlates with LMX quality measured on the LMX multidimensional scale when organizations are engaged in incremental organizational change (Carter et al., 2012). Transformational leadership also directly correlates with follower performance, productivity, and satisfaction (Grant, 2012). To test whether the outward actions of transformational leaders or the internalized thoughts and feelings of followers as a result of leader behavior influenced follower performance, Harms and Credé (2010) studied emotional intelligence as a component of transformational leadership and concluded that followers desired high degrees of trustworthiness and

character from their leaders whereas leaders valued their personal technical skill and productivity.

A variant of transformational leadership, servant leadership results in higher quality relationships between leaders and followers (Greenleaf, 1977). Servant leadership shares key features with transformational leadership in that leaders focus on the relationship with their followers to accomplish the desired goals and objectives (Stone, Russell, & Patterson, 2004). Servant leaders demonstrate an altruistic mindset and build heightened trusting relationships more so than transformational leaders (Beck, 2014). This key difference between transformational leaders and servant leaders is the essential nature of humility and pensive listening required of the leader in servant leadership (Greenleaf, 1977).

These studies on relationship-focused leaders who value the goals and desires of their followers demonstrate that quality interpersonal relationships perform a key role in the success of the follower. Followers of emotionally intelligent, transformational leaders who display humility in their interactions feel more appreciated, take more initiative, and produce greater results as individuals and as members of a team. Less clear are the antecedents to these desired characteristics of leaders. However, recent literature demonstrates the significance of a physician's personality in the development of interprofessional team leadership skills such as distributed leadership (Porter, Stoller, & Allen, 2018).

**Distributed leadership in practice.** Distributed leadership occurs in healthcare when interprofessional teams of clinicians work together in formal and informal groups

across lines of reporting authority (Günzel-Jensen et al., 2016). Several individuals share the leadership tasks with referent authority and alternate between leader and follower role throughout stages of the team relationship. Roles played by team members and their associated subject matter expertise determine leadership hierarchy rather than vertical dyads (Oborn et al., 2013). Therefore, the quality of the relationship greatly influences outcomes.

Physicians rise to the top of the professional hierarchy in healthcare due to their training, relative expertise, and autonomous practice authority granted through societal norms and governmental regulation (Nembhard & Edmondson, 2006). Their position in the professional hierarchy leads to team members' expectations that physicians will perform as interprofessional clinical team leaders. Trybou, Gemmel, Desmidt, and Annemans (2017) studied health system executive leadership to determine executive leaders expect physicians to lead interprofessional teams through distributed and collaborative models of care delivery.

Distributed leadership by physician occurs in several ways. Engaging others in participatory decision-making, facilitating interactions with non-team members, and soliciting others for thoughts and opinions were the most common expectations in one study on healthcare quality improvement (Howard et al., 2012). Nigam and Gao (2017) conducted a metanalysis of healthcare leadership studies and concluded physicians in leadership roles were expected to partner with direct line authority leaders, other physicians, and members of their interprofessional team of clinical providers to drive improvement in the safety, quality, experience, and cost of care delivery. The authors

concluded the training of physician leaders is insufficient to successfully complete the expected tasks of distributed leadership.

Medical training includes intentional and unintentional competency development in distributed leadership. Physicians learn to defer to the expertise of body organ medical specialists and sub-specialists while more general practitioners maintain responsibility for overall patient care (Paquin et al., 2018). In this way, physicians demonstrate a shared mental model of professional hierarchy engrained through training and skills development. In the setting of interprofessional and team-based care, physicians do not display the same level of competency in deferring to experts (Paquin et al., 2018).

Leaders rated higher in transformational leadership skills demonstrate higher tendencies towards distributed leadership (Xirasagar et al., 2005). Core traits of transformational leadership include empowering behaviors and attention to relationships. Team-based training programs have been developed to build the competencies of transformational leadership, distributed leadership, and interprofessional collaboration in physicians (Porter et al., 2018). Complex models, such as the leader-follower unity model, train physicians to simultaneously be effective leaders and followers in a clinical, interprofessional team setting (Prilipko, 2019). Medical schools also include a curriculum module on interprofessional education and health system science, which includes leadership, team-based care, interprofessional activities, and systems-based practice. These formal education programs share the stated objectives of enhancing physician competency in distributed leadership through empowerment behaviors.

**Empowerment Behavior**

Rappaport (1984) theorized that organizational leaders who include frontline

employees in the decision making process had a more highly engaged workforce and

better organizational outcomes. From the perspective of the employee, followership

theory represents the psychological safety afforded to direct reports and referent

followers who gain power for shared and distributed decision making within an

organization (Palm et al., 2015). In complex healthcare teams, empowerment has been

correlated to higher levels of patient safety and increased quality of care delivery while

also improving employee satisfaction and engagement (Bonias et al., 2010). The impact

of empowerment increases in cultures where low power distance exists between leader

and follower (Fock et al., 2013).

**Foundational elements of empowerment.** In leadership studies, empowerment

exists as both an independent leadership theory and a component of other leadership

theories (Hostetler & McAleer, 1999; Palm et al., 2015; Pratto, 2016; Rappaport et al.,

1984; Resick, Hanges, Dickson, & Mitchelson, 2006). Empowering behavior serves as

the common element of the conceptualization of empowerment across all theories

(Cheong et al., 2018). Only the external behaviors of empowerment can be identified by

others and measured by researchers. Implicit empowering traits have been described by

leaders and theorized to be the motivation of leaders who display empowering behaviors,

but limits exist when fundamentally describing the implicit traits (Cheong et al., 2018).

Empowering leadership consists of the behaviors of power sharing, motivational

support, and development support (Lee et al., 2018). The leadership behaviors of

empowering leadership are directed towards followers to promote self-directed and autonomous decision making which leads to psychological empowerment. The resulting psychological empowerment increases employee voice behavior which presents as increased engagement (Yoo, 2017). Employee engagement in healthcare organizations has been connected to increased patient safety and higher quality outcomes (Horwitz & Horwitz, 2017).

      **Mechanisms of empowerment.** Leaders create empowerment in followers through actions and behaviors. Followers identify with leaders through five primary mechanisms (Shamir, 2004). They may be subordinates of the leader, protected by the leader, followers to protect their own self-interests, believers of the leader's message, or identify with the leader's core values. The first two mechanisms form the basis of a leader-subordinate dyad as originally described by Rappaport (1984). The last three mirror referent leadership and followership theory where followers are influenced and guided by leaders rather than directly responsible to carry out the directives of the leader (Agho, 2009; Prilipko, 2019). Physicians serve as clinical leaders of an interprofessional team without formal authority over other members of the team. This paradigm of referent leadership increases the importance of followership to the success of the physician (Nigam & Gao, 2017; Oborn et al., 2013).

      Pratto (2016) further defined empowerment as the ability to achieve one's goals through social power rather than agency and control. The interdependence between leader and follower relies on mutual respect, bidirectional trust, and leader mindfulness such that both members of the dyad receive benefit from the relationship (Stedham & Skaar,

2019; Sy, 2010). LMX theory espouses the importance of the relationship between leader and follower with regards to the quality of the work performed by the follower and in overall job satisfaction (Inceoglu et al., 2018). Reciprocity between leader and follower through autonomy, shared decision making, and psychological empowerment creates a cycle of growth for both empowerment behavior in the leader and the quality of the LMX relationship (Palm et al., 2015). Seshia et al. (2017) demonstrated healthcare leaders' empowerment behaviors displayed as shared decision making, psychological empowerment, and the development of a high-quality LMX result in higher scores on culture of safety assessments and better outcomes on nationally reported quality measures.

**Outcomes of empowerment.** The effects of leaders' empowering behaviors on safety, quality, cost, and experience have been studied in both physician and nonphysician leaders. Structural empowerment and affective organizational commitment are higher when physicians in leadership roles display high levels of empowering behaviors (Horwitz & Horwitz, 2017). When followers feel safe to voice concerns, team-based interprofessional care leads to improved scores in safety measures. Collaborative, team-based physician leadership leads to better outcomes in quality measures and substantial gains in quality improvement projects (Kotecha et al., 2015). The empowerment domains of autonomy, competence, and meaning correlate with the greatest gains in quality outcomes at hospitals (Bonias et al., 2010). Ginsburg (2013) studied the effect of physician leader empowerment behavior on cost containment in

healthcare and concluded increased levels of empowering leadership resulted in greater gains on cost containment.

Underlying gains in safety, quality, and cost as a result of empowering behavior are the resulting culture changes that occur when empowerment increases. As leaders' empowering behaviors increase, employees' psychological safety, engagement, shared decision making, and citizenship behavior increase (Gottfredson & Aguinis, 2017). These increases lead to increased employee wellbeing and correlate with culture change at an organizational level (Galletta et al., 2016). The change towards higher quality LMX relationships, increased levels of teamwork, and higher empowerment scores has been correlated with decreased mortality, readmissions, and complications in one longitudinal study (Bradley et al., 2018).

Empowering leadership is leader behavior directed at individuals with the intent to delegate authority, promote self-directed and autonomous decision making, and invoking shared decision making (Lee et al., 2018). Empowering behavior leads to increased employee performance and higher quality organizational outcomes in healthcare systems. LMX quality has been demonstrated to be a mediator of the relationship (Lee et al., 2018). Personality, as measured through the MBTI, is postulated to correlate to empowering behavior (Hostetler & McAleer, 1999). In health systems, where physicians serve as referent leaders of interprofessional teams, understanding the correlation between personality type, LMX quality, and empowerment behavior may help improve the leadership skills of physicians and increase the safety and quality of care delivered to patients (Salas et al., 2018).

**Personality as a Function of Leadership**

Personality contributes to leadership behavior as the innate paradigm in which the

leader performs. Jung (1971) described personality as the internal libido which drives an

individual towards or away from interaction with others and guides the individual's

approach and response to interaction. Personality cannot be directly observed, but rather

is measured through outward behaviors and stated intentions. Studying personality in

leaders may lead to opportunities to increase performance by understanding internal

tendencies as a mechanism to alter behavioral responses (Furnham & Stringfield, 1993).

**Personality and leadership.** Personality has been measured on multiple scales

such as the Neuroticism, Extraversion, Openness (NEO) Personality Inventory,

Fundamental Interpersonal Relations Orientation (FIRO), MBTI, and the Big Five

Personality Traits (Furnham & Crump, 2015a). Each of the scales assess multiple facets

of personality to provide a composite indicator specific to the individual being assessed.

Personality traits common to many of the scales include extraversion, the degree to which

an individual openly interacts with others, and conscientiousness, the level of concern an

individual has for others (Strang & Kuhnert, 2009). The MBTI includes a scale for

mental processing in addition to scales for interaction and concern (Myers et al., 2009).

Leaders develop skills and progress through leadership levels at different rates.

Personality has been demonstrated to be one factor that predicts leadership transition and

growth (Bergman, Lornudd, Sjöberg, & Von Thiele Schwarz, 2014; Furnham & Crump,

2015a, 2015b; Strang & Kuhnert, 2009). Each facet of personality differentially

contributes to rates of growth and progression (Furnham & Crump, 2015b). The relative

importance of each facet also varies by industry and culture (Strang & Kuhnert, 2009). Understanding how personality influences the individual leader within the context of the organization and the environmental culture contributes to the ability to predict and influence the leader's success in carrying out the objectives of the organization (Strang & Kuhnert, 2009).

Assessment of personality requires evaluation of the individual's thoughts as well as their behaviors. Because personality is innate and cannot be directly observed, internal beliefs and external reactions to the environment form the basis of evaluation. To assess leaders' personalities, surveys of the leader, their direct reports, and others with whom the leader interacts have been demonstrated to provide the most valuable results (Bergman et al., 2014). Individuals may overrate or underrate their competency based on how they perceive themselves or how they interpret the meaning of the survey question (Bergner, Davda, Culpin, & Rybnicek, 2016). Using a standardized assessment tool and collecting data from multiple contacts provides a reproducible personality inventory for a leader (Bergman et al., 2014).

**Myers-Briggs Type Indicator.** The MBTI measures personality types rather than traits. Whereas traits can be displayed in varying degrees or amounts, types are a series of four opposite pairs where an individual demonstrates a preference towards one of the dichotomies (Myers et al., 2009). The first dichotomy, extraversion versus introversion, represents where an individual directs their energy (Myers, 2015). People who prefer extraversion communicate with more charisma and dramatic emphasis (Clack, 2017).

Empowerment and employee proactivity have been demonstrated to be reduced in the presence of leaders who prefer extraversion (Grant, Gino, & Hofmann, 2011).

The dichotomies of sensing versus intuition and thinking versus feeling define preferences in mental processes (Myers, 2015). Jung (1971) described these four basic mental functions in his original description of type theory. He explained that everyone uses each of the four functions but prefer one dominant function for receiving information and a second dominant function for processing the information received. Jung referred to the dichotomy of sensing versus intuition as perception and described it as the way an individual receives information from their environment. He gave the name judgment to the dichotomy thinking versus feeling and explained it as the way an individual processes information received from the environment. Gordon (2015) studied MBTI preferences in pharmaceutical industry leaders and concluded that mental processes correlate with levels of empowerment. In studies on the relative proportion of type preferences, chief executive officers across all occupational sectors and physicians shared a disproportionate preference towards thinking over feeling. (Borges & Savickas, 2002). That differentiation from the general population may elevate the importance of the correlation between preferences in the mental processes and levels of empowerment behavior (Aranda & Tilton, 2013).

The fourth dichotomy of judging versus perceiving was developed Briggs to address how an individual orients to, or addresses, the outside world (Myers et al., 2009). People who prefer judging tend to appear orderly and organized while people who prefer perceiving tend to appear flexible and open (Myers, 2015). The authors of one study

showed a correlation between empowerment behavior and judging versus perceiving (Greasley & Bocârnea, 2014). Other authors have concluded no correlation exists (Gordon, 2015; Furnham & Stringfield, 1993; Jinkerson, Masilla, & Hawkins II, 2015). Aranda and Tilton (2013) stressed the importance of this dichotomy in physician as both physicians and nonphysician executives display higher preferences towards judgment than the general population.

**Myers-Briggs Type Indicator in physicians.** Physicians career choices based on MBTI preferences have been studied in medical school, residency, and professional career choices (Borges & Savickas, 2002; Hughes et al., 2018; McLarnon et al., 2016; Mullola et al., 2018). Medical students' success in medical school could not be predicted by personality preferences; however, their transition to clinical rotations was influenced by personality traits on the Five Factor Personality Model (McLarnon et al., 2016).

Personality types on MBTI and personality traits on the Five Factor Personality Model weakly correlated with specialty choices (Borges & Savickas, 2002; Hughes et al., 2018). Students displaying high degrees of extraversion performed better in surgical residency than those who did not display the same preference. While all personality preferences were identified across all specialties, cognitive specialties such as medicine had higher numbers of individuals preferring sensing and thinking while radiologists and pathologists who work more in isolation favored introversion, intuition, and thinking (Borges & Savickas, 2002).

Across specialties, physicians demonstrated higher numbers of individuals who preferred extraversion, sensing, thinking, and judging than the general population

(Aranda & Tilton, 2013). This tendency mirrored the rates of those preferences in corporate executives and other leaders (Myers et al., 2009). Aranda and Tilton (2013) used those data to conclude that similar type preferences between physicians and executives explains physicians' innate leadership skills and underscores the importance of teaching leadership competencies to physicians transitioning into leadership roles.

**Myers-Briggs Type Indicator in leadership.** Leaders, like physicians, present with higher preferences towards extraversion, sensing, thinking, and judging than the general population (Myers et al., 2009). Extraversion links to higher degrees of charisma and communication (Clack, 2017). Extraversion has been correlated with lower levels of follower proactivity, which may be detrimental to empowerment (Grant et al., 2011). Allinson, Armstrong, and Hayes (2001) explained the disconnect between high rates of leaders with a preference towards extraversion and followers expressing diminished levels of proactive behavior through LMX quality. In their analysis, congruence of personality type preferences between leaders and followers led to higher quality relationships, greater productivity, and better organizational outcomes regardless of the specific type preferences. Personality type preference matching between leader and follower also leads to greater success in managing organizational change (Garrety et al., 2003). For this reason, Gerras and Wong (2016) recommended organizational development professionals moving beyond the MBTI when evaluating leadership potential. Physicians, a population that displays the same ratios of type preferences on the MBTI to executives and organizational leaders, may also have differential success in

empowering their followers based on the quality of the LMX relationship built in their referent leadership structure when overseeing clinical care teams.

**Leader-Member Exchange Quality**

LMX theory developed out of vertical dyad theory and role theory. The theorists concluded unit-specific dyads of a leader and followers performed better when a relationship of trust and empowerment developed (Dansereau et al., 1975). As such, in-groups and out-groups formed that marked the delineation between high-quality relationships and low-quality relationships. Subsequent researchers determined the quality of the relationship between a leader and followers mattered less in cultures with high power distance than cultures with low power distance (Tu & Lu, 2016).

**Influence of leader-member exchange quality.** High-quality LMX relationships have been associated with increased quality outcomes in healthcare settings due to increased intention to report and reporting of serious patient safety events (Jungbauer et al., 2018). Higher levels of organizational citizenship behavior correlated with high LMX quality when influenced by high levels of transformational leadership during periods of change (Carter et al., 2012). Overall employee satisfaction and engagement, as well as professional respect for leaders and loyalty to the organization benefited from high-quality leader-member relationships (Hanse et al., 2014). The factors of employee engagement, satisfaction, and well-being strongly correlated with better safety and quality outcomes in healthcare settings across cultures and countries.

Leaders also benefit from high-quality leader-member relationships. Leaders gain status within the organization and enhance their situational awareness of factors

impacting performance at higher rates with a high-quality relationship (Wilson, Sin, & Conlon, 2010). Leaders gained from employees' reactions to a high-quality LMX through greater insight into motivational factors of the employees and through higher productivity from their business unit (Lam, Huang, & Snape, 2007). Both the leader and followers gained through increased recognition and promotion in one study on LMX relationships (Wilson et al., 2010).

**Leader-member exchange quality, personality, and empowerment in healthcare.** Congruence of personalities between leaders and followers correlate with higher quality LMX relationships (Allinson et al., 2001). The specific nature of the moderating role of personality on the quality of LMX relationship has not been elucidated (Burns & Otte, 1999). Nor has the impact of personality on empowerment behavior across various levels of LMX quality. In healthcare settings, high-quality LMX has been associated with empowerment (Hanse et al., 2016; Scandura & Pellegrini, 2008). Exactly how that relationship is influenced by personality and how personality and LMX quality relate to empowerment behaviors in physicians has not been explained.

### Summary and Conclusions

Empowerment behavior in leaders leads to psychological empowerment in followers which results in higher quality performance both individually and organizationally (Bonias et al., 2010). In healthcare leadership, psychological empowerment translates to higher levels of patient safety and better-quality outcomes (Alloubani et al., 2014; Firth-Cozens & Mowbray, 2001).

Physicians serve as referent leaders in healthcare due to their cultural placement at the top of the clinical hierarchy (Quinn & Perelli, 2016). This authority has caused physicians to be placed in formal health system leadership roles where they have greater influence on the overall quality of care delivery. However, medical training does not support distributed leadership and shared decision-making, nor are physicians formally trained as organizational leaders (Keogh, 2017). As a result, physicians rely on innate skill to lead.

Personality types as determined by the MBTI have been correlated with levels of empowerment behavior in leaders (Grant et al., 2011). Extraversion has been associated with increased empowerment in some settings and decreased empowerment in others. Judging and perceiving correlated with differential levels of empowerment behavior as well. While no single personality type has proven most efficacious for encouraging empowerment, congruence in personality type between leader and follower has been consistently demonstrated to result in higher quality LMX relationships. Therefore, leaders who understand their own personality type and that of their followers may be able to increase empowerment in their followers. No research has connected physicians' personality types with levels of empowerment behavior, thereby limiting the utility of personality type in leadership development training for physicians.

LMX quality has been demonstrated to influence the level of empowerment behavior in leaders, including physicians. High LMX quality correlates with greater degrees of congruence in the personalities of leaders and followers as do higher levels of trust and resource sharing (Jungbauer et al., 2018). These factors lead to higher levels of

followers' satisfaction and performance, which results in increased organizational outcomes. Specifically, how LMX quality influences the relationship between personality and empowerment in physicians has not been determined.

The purpose of this study was to evaluate the role personality types and high-quality LMX may play in the physician's ability to engender empowerment at academic medical centers in the United States using validated surveys of empowerment and LMX quality in conjunction with the MBTI. The results may inform physicians interested in leadership and organizational development specialists on how to best prepare physicians to lead using personality type preferences as a tool to enhance the quality of their relationships through empowerment behaviors.

Chapter 3: Research Method

The purpose of this quantitative nonexperimental correlation study was to determine the role personality types and high-quality LMX, both independent variables, may play in the physician's ability to engender empowerment, the dependent variable, at academic medical centers in the United States. A quantitative nonexperimental correlation study was performed to address the gap in the literature (see Salkind, 2010). Data were collected from physicians and their followers using a compilation of the previously validated ELS (Amundsen & Martinsen, 2014), the MBTI personality assessment tool  (Myers et al., 2009), and the LMX scale survey (Liden & Maslyn, 1998).

A quantitative nonexperimental correlation study provides foundational information when few prior studies have elucidated the relationship between the study variables and when manipulation of the subjects or variables does not occur (Nimon & Astakhova, 2015). The nature of those relationships was central to the current study. Physicians were selected through convenience sampling using online solicitation via two national society list serves with the assistance of outreach personnel employed by the national societies and after permission was granted by senior leaders of their organization (see Etikan, Musa, & Alkassim, 2016). Each physician provided the names of 10 followers and completed the online version of the MBTI Form-M (see Myers et al., 2009). A random selection of five of the followers completed the ELS (see Amundsen & Martinsen, 2014) and the LMX scale (see Liden & Maslyn, 1998) surveys through an online survey tool. The results of the follower surveys were averaged and correlated with

the results of the physician's personality type results using ANOVA (see O'Neill, 2017; West, Aiken, & Krull, 1996).

Chapter 3 is an in-depth review of the research design and methodology, with a rationale for the choices made in the design. The sampling procedures are outlined, and the procedures for recruiting study participants are discussed. I then review the data analysis plan and the threats to internal, external, and construct validity. I conclude the chapter with a description of the ethical procedures and a summary of the chapter.

## Research Design and Rationale

The study variables included empowerment behavior, personality type, and LMX quality. Empowerment behavior, the dependent variable, was measured using the ELS developed by Amundsen and Martinsen (2014) to measure the external behaviors of empowering leadership. Personality type, an independent variable, was a compilation of four dichotomous pairs measured using the MBTI developed from Jungian psychological typology (Jung, 1971; Myers et al., 2009). LMX quality, an independent variable, was measured as a composite score of the four dimensions of the multidimensional LMX scale developed by Liden and Maslyn (1998). Personality type and LMX scores were analyzed for the presence of collinearity and determined to be covariates (see Salkind, 2010).

This study was a quantitative nonexperimental correlational study, which aligned with the research questions about the possibility of a relationship between empowerment behavior and personality type and the possibility of a relationship between empowerment behavior and LMX quality. A quantitative study was chosen because the study purpose

and research questions aligned with a survey-based methodology using a continuous dependent variable and continuous and categorical independent variables (see Curtis, Comiskey, & Dempsey, 2016). Correlation was the appropriate type of quantitative analysis because this was a nonexperimental design where the study population was categorized naturally rather than through randomization (see Nimon & Astakhova, 2015). Additionally, the variables were not manipulated in the study, further strengthening the case for a nonexperimental design rather than a quasi-experimental or experimental design (see Nimon & Astakhova, 2015).

Quantitative health science research advances knowledge in the field of healthcare by providing data to support factors that may lead to the improvement of patient safety and the quality of healthcare delivery in the United States (Nigam & Gao, 2017). Quantitative research on physician leadership informs health care system leaders about the characteristics, traits, and skills desired and necessary in physicians to be chosen as leaders in health systems desiring to increase the engagement of physicians to improve the safety and quality of care delivery (Trybou et al., 2017). This research also provides insight to physicians regarding their underlying personality types and how their behaviors influence followers to perform (see Aranda & Tilton, 2013; Quinn & Perelli, 2016).

Consideration must also be given to potential control variables in the context of this study. Prior research on the MBTI reflects that results do not vary by gender or age and that preferences do not change with environmental influences (Brandt & Laiho, 2013). This precludes those variables from being independent variables or covariates. Many leadership studies have included gender, age, tenure in leadership, educational

background, and length of time at the current company (Bernerth et al., 2018). In the

present study, I controlled for these variables and physician specialty because evidence

also exists on the differences in leadership style and personality type across physicians

with different clinical backgrounds (see Aranda & Tilton, 2013; Chapman et al., 2014;

Keogh, 2017).

## Methodology

### Population

Approximately 100 physicians at academic medical centers were intended to be

engaged as participants in this study. They were accessed through email solicitation after

permission was granted from their employer. Physicians control much of the safety and

quality in healthcare through their actions and *de facto* leadership positions within the

industry (Xirasagar et al., 2005). Embracing them as leaders and studying the

characteristics of successful leadership may impact the safety and quality of care delivery

(Kristensen et al., 2016). Academic medical center physicians were chosen specifically

because of their common status as employees and their unique association with a national

society of academic medical centers.

Physicians participating in the study were directed to an online survey tool (see

SurveyMonkey, 2018). After granting informed consent on page 1, the physicians were

asked to provide the names of up to 10 followers to receive electronic surveys about the

physician. A follower could be a referent or direct subordinate as both have been

validated to be relevant followers to the distributed leadership models employed in

interprofessional healthcare teams (see Günzel-Jensen et al., 2016; Oborn et al., 2013).

Subordinates have been used to evaluate physicians' leadership effectiveness with respect

to personality of the leader and have been shown to be reliable evaluators of leadership

performance (Bergner et al., 2016). Five of the followers for each physician were selected

at random to complete the follower survey.

**Sampling and Sampling Procedures**

Nonprobability convenience sampling was used in this study (see Etikan et al.,

2016). Random sampling was not possible because the true size of the target population

cannot be known (see Martínez-Mesa, González-Chica, Duquia, Bonamigo, & Bastos,

2016). Convenience sampling has been demonstrated to produce similar results to

probability sampling in healthcare research when the sample size and response rates are

enough to achieve the desired statistical power (Tyrer & Heyman, 2016; van Hoeven,

Janssen, Roes, & Koffijberg, 2015). Inclusion criteria were employment by an academic

medical center or a related affiliate in the United States and a formal leadership title

within the organizational hierarchy. There were no exclusion criteria. In a study of this

nature, Omair (2014) recommended *a priori* calculations of power, effect size, and

confidence intervals. *A priori* power analysis using G*Power with a moderate effect size,

alpha of 0.05, power of 80%, and ANOVA as the statistical tool supported the estimated

sample size of 100 physician-respondents (see Buchner, Erdfelder, Faul, & Land, 2018).

Five followers of the physician were randomly selected from the names provided using a

random number generator. Five respondents among the followers were chosen because

prior researchers have demonstrated the validity of five to nine followers' scores

achieving a statistically significant reliability in the assessment of the leader (see Bono &

Judge, 2003). Other researchers have demonstrated that sufficient interrater reliability

occurs when a random selection of at least five followers have evaluated for leadership

performance using Likert-scale surveys in a web-based format (Bono & Judge, 2003;

James et al., 1984). Survey-based studies generally receive a response rate less than 50%;

therefore, additional names and contact information were collected to increase the

likelihood of achieving the desired minimum responses from physicians' followers (see

McCarthy, Wagner, & Sanders, 2017). Response rates may have been bolstered due to

familiarity of the respondents with the physician who were the subject of their survey

(see Schoonenboom, 2017). Additional requests were sent to the remainder of the

physician's followers at random until five responses were received.

**Procedures for Recruitment, Participation, and Data Collection (Primary Data)**

      **Physician recruitment, participation, and data collection.** Clinical executives

at academic medical centers in the United States were sought via email solicitation

through two national society list serves with the assistance of outreach personnel

employed by the national societies. Permission to access this list serve was granted

through representatives of the national societies (see Appendix A). The clinical

executives were of sufficient authority to grant organizational approval and were

informed of the study objectives, parameters, and time constraints. They were asked for

permission to access physicians in leadership roles within their organization and

interprofessional clinical team members who work under the direction of those

physicians (see Appendix B). While it was possible that these senior clinical leaders

could have been eligible to participate, they were excluded to eliminate conflicts. Instead,

they were asked to help disseminate the request to participate to physicians within their organization. A second email was directed to physician participants asking for their participation. E-mail solicitation to physicians has proven effective when contextual cues sufficiently explain the objectives of the study and the credibility of the researcher (Pan, Woodside, & Meng, 2013). In two studies on physicians and healthcare executives, rounds of follow-up requests via e-mail add logarithmically to the response rate while demonstrating no statistical difference in the results between responders and nonresponders when surveyed about healthcare outcomes at their organizations (Meterko et al., 2015; Partin et al., 2015). The physicians were provided informed consent through the SurveyMonkey survey and then asked for the names and email addresses of 10 members of their clinical team. They completed demographic questions about their gender, age, tenure in leadership, length of time at the current company, time practicing medicine, specialty of clinical practice, and whether they have had leadership training. After answering the demographic information, the physicians were directed to the Myers-Briggs assessment site, Elevate, through a hyperlink (see The Myers-Briggs Company, 2018). The assessment site allowed participants to navigate through the instrument and automatically collected personality type data. At the end of the assessment, participants were offered the opportunity to learn about their personality type through the MBTI education module. The physician's personality type was saved in my secured Elevate portal and downloaded for statistical analysis after data collection had completed. The physician-respondents were offered the opportunity to withdraw from the study at any point in the process and to request their data be removed from the final analysis.

**Follower recruitment, participation, and data collection.** Five of the physician's identified team members were randomly selected and asked to participate via an email solicitation. Followers have been demonstrated to provide fair assessments of their leaders with good between and within group interrater reliability (Nowack & Mashihi, 2012). After reading and electronically signing an informed consent on page 1, respondents completed a 3-page web-based survey using Survey Monkey (see SurveyMonkey, 2018). Construction of the survey was be purposeful and with a brief explanation and presentation of the intact ELS survey (see Amundsen & Martinsen, 2014) and LMX survey (see Liden & Maslyn, 1998) instruments. Minimizing the necessary clicks to complete the survey increases response quality and quantity (Landowska, 2015). Maximizing the use of space with few distractions and a clean visual appearance adds to response rates while minimizing bias (Tait & Voepel-Lewis, 2015). Demographic questions on page 1 included age, gender, time in their current position, and time working in healthcare. The ELS survey (18 questions) and the LMX survey (12 questions) were presented on pages 2 and 3 as intact surveys. These surveys were randomly alternated between which was first versus second presented to reduce potential bias due to sequencing of the surveys. The respondents were afforded the opportunity to not answer specific questions and to withdraw from the study at any time. Early versus late responders were compared to evaluate for signs of potential nonresponse bias (see Phillips, Reddy, & Durning, 2016). The survey concluded upon completion of the final page of the instrument.

**Instrumentation and Operationalization of Constructs**

  **Empowering Leadership Scale.** The ELS was initially published by Amundsen and Martinsen in 2014 and used by the same authors in a 2015 publication linking empowerment behaviors to psychological empowerment, employee satisfaction, and effort. Empowering leadership is both implicit and explicit; however, only explicit can be accurately measured (Cheong et al., 2018). Implicit empowerment refers to a leader's cognitive approach to leadership. Explicit empowerment is seen in a leader's outward actions towards a follower. Lee, Willis, and Tian (2018) made the connection between empowering behavior and empowering leadership in their meta-analysis on empowering leadership where they identified shared power, motivational support, and development support as major factors in empowerment. Those findings support earlier work that connected empowering behavior in leaders to higher levels of follower performance and improved organizational outcomes (Sy, 2010). The connection between empowering leadership with empowerment behavior and subsequent higher performance and improved outcomes supports the appropriateness of this instrument for the current study.

  Amundsen and Martinsen (2014) used external validation through the multifactor leadership questionnaire for transformational leadership and the LMX survey in their validation study. They internally validated the domains and questions to ensure no intercorrelations. The domains of autonomy support and development support demonstrated independent effect with correlation on fit testing (root mean square error of approximation = 0.093). Individual questions were measured using exploratory factor analysis and calibrated to ensure predictive value without intercorrelations. Questions

with a factor loading value greater than 0.50 were retained (range 0.50-0.94).

Confirmatory factor analysis on the 18 questions that met inclusion criteria resulted in a

fit index of CFI = 0.93. The 18 questions used in the study along with the documentation

of permission from Amundsen are displayed in Appendix C. The questions were

modified to use the word *physician leader* in place of *leader* to provide clarity for survey

respondents.

        **Myers-Briggs Type Indicator.** The MBTI Form M will be used in this study.

MBTI was first developed by Briggs and Myers in 1942 (Myers et al., 2009). The MBTI

uses Jungian theory to categorize personalities by type sorting dimensions of personality

into how one orients energy (extraversion or introversion), takes in information (sensing

or intuition), makes decisions (thinking or feeling), and approaches the outside world

(judging or perceiving) (Myers et al., 2009). Form M supplanted prior versions of the

MBTI in 1998 and consists of 93 forced choice questions across four preference pairs

(Myers et al., 2009). Personality has been correlated to leadership success across

hierarchies in organizations (Furnham & Crump, 2015a). It also correlates to outward

characteristics of leadership theories such as servant leadership (Greasley & Bocârnea,

2014). For those reasons, personality as a correlate to empowerment to identify features

that lead to greater leadership effectiveness is a valuable endeavor in measuring

physicians' leadership skill sets. MBTI dimensions have been studied independently and

as a full type to predict propensity to choose a specific field of medicine and to predict

success in a broad array of professions (Furnham & Crump, 2015b; Mullola et al., 2018).

The clear delineation of preferences through the MBTI assessment, the volume of

research performed in healthcare leadership using MBTI, and the high reliability scores makes the MBTI assessment the optimal choice for this study. Permission to use the MBTI in this study with a request to contribute to the Myers-Briggs Foundation data repository appears in Appendix D.

In the MBTI Manual, Third Edition, Myers, McCaulley, Quenk, and Hammer (2009) provided multiple levels of internal reliability and internal and external validity presented in this text. Form M of the MBTI consists of 93 questions including word-pair and phrase choice selections. Respondents must answer each question with one of the two available responses. The E-I, S-N, T-F, and J-P pairs are independently measured with 21, 26, 24, and 22 questions respectively. Scoring occurs electronically using a three-parameter item response theory that was validated using a best fit analysis of the prediction ratio method traditionally used in personality assessments. Each dichotomy scored 92-95% agreement between methods and an overall 78% agreement to determine internal validity. The test-retest probabilities for each of the dichotomies range from 0.89-0.93 using split-half reliability testing. External validity has been tested for each pair using exploratory and confirmatory factor analysis. Multiple personality tests such as the California Personality Inventory, NEO-PI, FIRO-B, Strong Interest Inventory have been used to externally validate MBTI Form M results. Each have demonstrated statistically significant correlation for the respective type pair.

**Leader-Member Exchange quality scale.** Liden and Maslyn validated and published the multi-dimensional LMX scale in 1998. Permission to use the instrument is presented in Appendix E along with a copy of the instrument. The questions were

modified to use the word *physician leader* in place of *manager* to provide clarity for

survey respondents. LMX theory evolved from role, or vertical dyad, theory where a

leader granted more autonomy and authority to followers they trusted (Dansereau et al.,

1975). In turn, followers contributed more to the goals of the leader and achieved greater

successes. Multiple LMX scales have been developed and used to study the relationship

between leader and follower in healthcare (Burns & Otte, 1999; Liden & Maslyn, 1998;

Martin, Guillaume, Thomas, Lee, & Epitropaki, 2016). Higher degrees of LMX quality

exists when personalities complement each other (Allinson et al., 2001). A strong

relationship correlates to increased quality and safety of care delivery (Jungbauer et al.,

2018). However, the impact of LMX quality and personality of the physician on

empowerment behavior in the physician has not been studied, making use of this

instrument ideal for the current study.

Liden and Maslyn (1998) developed the multi-dimensional scale after recognizing

that respect, loyalty, affect, and contribution are perceived differently by followers and

leaders. They reviewed the extant literature and identified 80 items that described the

relationship between leader and follower. The researchers used expert consensus to

validate those items plus 40 additional items suggested by the focus groups. Next, they

asked senior scholars in the field to independently categorize the items into the ascribed

dimensions. Liden and Maslyn evaluated agreement between the judges which resulted in

20 items being dropped due to discordance. A third round of content validation by a

different group of experts resulted in 42 items remaining that could be linked to a single

dimension each without duplication in the intent of the question. Those questions were

used in a survey to 302 workers in a test-retest study at an eight-week interval and additional questions were dropped from the survey. Liden and Maslyn used a second survey to 183 workers using the previously validated LMX-7 scale to externally validate the results. Five rounds of data analysis were conducted on the results, including selection analyses for zero variance, exploratory factor analysis, confirmatory factor analysis, comparison across dimensions, and relationship to outcome variables.

In the analysis, the researchers dropped five items due to significant correlations with other questions. 11 items explained 79.4% of the variance in the results and ranged from 0.72 – 0.97 on exploratory factor analysis. Scales were created using the raw scores in each of the four dimensions on a seven-point Likert. Coefficient alphas for internal consistency reliabilities were 0.90, 0.78, 0.60, and 0.92 for the four dimensions. Test-retest correlations were also acceptable. To test external validity, Liden and Maslyn evaluated response bias, convergence, discriminant validity, and criterion-related validity. They compared the results with the results from the LMX-7 with a correlation of 0.84.

## Data Analysis Plan

Data from the physicians was collected using SurveyMonkey for the demographic data (2018) and the Myers-Briggs Company's Elevate web portal and database for the MBTI type results (2018). SurveyMonkey offers secure data platforms for survey creation, dissemination, and collection via the internet. The Myers-Briggs Company issues certified professionals a secured platform for clinical and research data collection. The e-mail addresses of the physician were used as the sole identifier because Elevate uses that data point as the sole identifier in its data security process. At the conclusion of

the data collection, the demographic information and type results were downloaded to a

secured Microsoft Excel workbook (2020) and coded with a unique subject identifier.

Once coded and de-identified, the data were transmitted into SPSS for data analysis (see

IBM Corp., 2020).

Data from team members of the physicians was collected using SurveyMonkey

(2018). A unique identifier correlating the follower to their leader was issued at the outset

of the survey with no other identifiers collected. A 4-page survey included a brief

description of the project with informed consent, a demographics page, and a page for

each of the LMX Survey and the Empowerment Leadership Survey. At the conclusion of

the data collection, the results were downloaded to a secured Microsoft Excel workbook

and sorted by the physician identifier. Individual-level responses were aggregated into a

group-level response and measured for interrater reliability (see James et al., 1984). The

group-level response was transmitted into SPSS for data analysis (see IBM Corp., 2020).

Interrater reliability, or within-group agreement, in leadership survey assessments

has been evaluated by multiple authors (Biemann, Cole, & Voelpel, 2012; James et al.,

1984; O'Neill, 2017; Smith-Crowe, Burke, Cohen, & Doveh, 2014). Description of the

demographic data of the individual respondents was included in the final assessment (see

Biemann et al., 2012). O'Neill (2017) recommended using multiple methods to display

the relationship between individual-level data that have been aggregated into group-level

responses so that the source of within group variation may be identified. Each variable

used in the analysis had the mean, standard deviation, variance, and distribution recorded

(see James et al., 1984). While no single cutoff exists for any statistical measurement of

within-group interrater reliability, reporting the data helps identify potential biases and weaknesses in the results.

This quantitative nonexperimental correlation study includes three study questions:

RQ1: To what extent, if any, is there a relationship between personality types and empowerment behavior measured in physicians at academic medical centers in the United States?

$H_0$1: There is no relationship between personality types and empowerment behavior measured in physicians at academic medical centers in the United States.

$H_A$1: There is a relationship between personality types and empowerment behavior measured in physicians at academic medical centers in the United States.

RQ2: To what extent, if any, is there a relationship between LMX quality and empowerment behavior measured in physicians at academic medical centers in the United States?

$H_0$2: There is no relationship between LMX quality and empowerment behavior measured in physicians at academic medical centers in the United States.

$H_A$2: There is a relationship between LMX quality and empowerment behavior measured in physicians at academic medical centers in the United States.

RQ3: To what extent, if any, is there a relationship between personality types and LMX quality measured in physicians at academic medical centers in the United States?

$H_0$3: There is no relationship between personality types and LMX quality measured in physicians at academic medical centers in the United States.

$H_A3$: There is a relationship between LMX quality and personality types measured in physicians at academic medical centers in the United States.

A quantitative nonexperimental correlation study requires statistical correlation analysis to maintain alignment (Landis & Koch, 1977). ANOVA and Pearson correlation were used in this study to evaluate the study questions. A level of significance $p < 0.05$ with a Type I error of $\alpha = 5\%$ was used for all analyses in this study. ANOVA has been used in prior correlation analyses involving leadership and personality (West et al., 1996). ANOVA has also been used in correlation studies involving categorical data (Landis & Koch, 1977). Pearson correlation allows for evaluation between two continuous variables in the setting of potential covariance when ANOVA is under consideration (Frigon & Laurencelle, 1993). Early work in the development of ANOVA demonstrated a need for caution and *a priori* testing for specific assumptions of the data (Bartlett, 1949). The two independent variables of personality type and LMX quality score were tested for normality, homoscedasticity, skewness, and distribution of variance to evaluate the appropriateness of ANOVA (see Barker & Shaw, 2015; Yang & Mathew, 2018). They were tested for interaction and collinearity as a condition of ANOVA (see Scariano & Davenport, 1987). In the presence of interaction without collinearity, ANCOVA was the appropriate model of ANOVA because it controlled for the covariant (see Porter & Raudenbush, 1987). However, collinearity and violations of the assumptions of ANOVA diminished the power of analysis through ANCOVA (see Evans & Anastasio, 1968; Porter & Raudenbush, 1987; Zhou & Skidmore, 2017). Alternative methodologies have been developed for both ANCOVA and ANOVA analysis in the

presence of violations of assumptions. These alternatives, such as the SEYHAN approach were considered with documentation on the limitations to statistical power and the specific violations (Ankarali, Cangur, & Ankarali, 2018; Schneider, Avivi-Reich, & Mozuraitis, 2015). Alternatively, moderated regression has been used when interaction exists between the covariates and violation of the assumptions of variance exist (Leppink, 2018). Moderated regression would not be in alignment with the study design or questions in this study and was not considered as an option.

The confounding variables of gender, age, tenure in leadership, length of time at the current company, specialty of clinical practice, and whether the physicians have had leadership training were captured and controlled in the analysis. MBTI results do not vary by gender, age, or other environmental influences (Brandt & Laiho, 2013). However, prior leadership researchers have concluded age, gender, and experience of both the leader and follower have impact on empowerment behavior and LMX quality (see Bernerth et al., 2018). An association between LMX quality and empowerment has been demonstrated in other fields (Scandura & Pellegrini, 2008). Therefore, the assessment of the interaction between those two variables was a critical step in this analysis.

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**Threats to Validity**

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**External Validity**

External validity may have been challenged by respondents' interpretation of test questions or their attentiveness to the subject of evaluating their own performance or that of their leader. If followers felt their responses may be shared with the leader, this could have altered their responses (see Frankfort-Nachmias & Leon-Guerrero, 2018). These

factors were addressed in the informed consent and introductory letter to participants by committing to anonymity and requesting sincere attentiveness to the task. The MBTI online version provided an opportunity for physicians to formally assess their responses and indicated type to address validity on that instrument (see Myers et al., 2009). Statistics of interrater reliability in the followers addressed validity in their responses (see James et al., 1984).

External validity may have been threatened by uncontrolled variables. A literature review of prior leadership studies involving personality type, LMX quality, and empowerment leadership has been undertaken to identify several potential confounders, but other previously unknown factors may exist that were not apparent in the study (see Bernerth et al., 2018). Pre-hoc analysis of the collected data to address collinearity was performed to minimize this threat to external validity.

**Internal Validity**

Internal validity of a study can be threatened by history, maturation of the subjects, the effects of retesting, instrumentation, statistical regression, selection bias, experimental mortality, and demoralization of the respondents (Babbie, 2017). The study design precluded many of these threats as this was a single-day survey where each participant responded only once to their survey tool. The instruments have all been previously validated by their developers but have not been used together in a single research study. To account for potential bias in the follower survey, the sequence of survey instrument presentation was randomly altered. Statistical analysis accounted for regression by addressing variance and standard deviation in the responses. Selection of

participants was the greatest threat to validity. As this was be a nonrandom convenience sample through list serves and e-mail with a subsequent request for the physician to identify followers, generalizability may have been limited if a diverse population in age, gender, ethnicity, and geographic respondents did not occur. This possibility was addressed in the descriptive statistics and interpreted in the discussion section of the final paper.

**Construct Validity**

The survey design lended itself to the possibility of construct validity. Because the LMX survey and the empowerment leadership survey have not been used together, interaction of the two may lead to conflicting answers that could alter the statistical results. Identifying potential conflicting questions and evaluating the results for interaction would be the optimal method to address construct validity in this study (Babbie, 2017). The MBTI has been repeatedly tested for construct validity and poses little threat due to the design of the questions (Myers et al., 2009). The Empowerment Leadership Scale also underwent analysis to reduce interaction between questions and to ensure respondents' answers were indicative of the desired result (Amundsen & Martinsen, 2014). Liden and Maslyn (1998) addressed item-response interactions in their LMX Quality Scale validation study.

**Ethical Procedures**

Institutional Review Board (IRB) approval was received from the Walden University IRB. The IRB approval number is 05-26-20-0599259. Recruitment materials, informed consents, and the study proposal was reviewed by the IRB and was compliant

with doctrines of ethical procedures. Recruitment materials and informed consents were written in plain language and assistance was offered as appropriate. A statement of voluntary participation was part of the recruitment materials and information on how to withdraw during any part of the study process was provided in the informed consent.

A request for organizational participation was distributed via a national collaborative of academic medical centers and a national society for physician executives using their clinical executive list serves. Permission to use the list serves for solicitation of volunteers is attached in Appendix A. Clinical executives were asked for permission to access physicians within their organization in leadership roles and up to 10 of each of their interprofessional clinical team members to participate in the study (see Appendix B). Following approval, physicians within the organization were solicited for participation (see Appendix F). Physician respondents received a link to the informed consent when they responded to the request to participate. Embedded in the informed consent with the risks and benefits of participation was contact information for the principal investigator and a brief explanation of the study objectives. Respondents were provided with the information about how to withdraw at any time during the study period. They were asked to review the document and acknowledge acceptance by checking the acknowledgement box at the bottom of the page. The physicians were asked to provide the name and email of five to 10 clinical team members after signing the informed consent page. They received the follow-up email in Appendix G providing them with the link to their specific Elevate portal to complete the MBTI (see The Myers-Briggs Company, 2018).

A random selection of the followers of the physicians received an email

explaining the purpose of the solicitation and requesting their consideration for

participation in the study (see Appendix H). The solicitation included a link to the

informed consent for followers. The informed consent contained an explanation of the

risks and benefits of participation, contact information for the principal investigator, and

a brief explanation of the study objectives. The followers were asked to review the

document and acknowledge acceptance by checking the acknowledgement box at the

bottom of the page. Once they completed the informed consent, they were directed to the

survey pages.

Confidentiality of responses was afforded to each participant in this study. The

Elevate portal for MBTI assessment is built to Health Insurance Portability and

Accountability Act specifications through their secure platform with required username

and password authentication. The organization maintains and updates the security

features and provides notice of those features at their portal access points (2018).

SurveyMonkey maintains security features to ensure data security and privacy protection

through their authentication portal (see SurveyMonkey, 2018). Researchers measuring

data security in web-based portals demonstrated SurveyMonkey to be compliant and

among the highest rated for clinical and research survey data capture (Zakharov,

Nikulchev, Ilin, Ismatullina, & Fenin, 2017). Further protection of respondent data

includes a password protected Microsoft Excel (2020) spreadsheet used to code

deidentified data and an encrypted drive to maintain the Microsoft Excel and IBM SPSS

(2020) files for the five-year required storage period. Only the principal investigator has access to coded data that may identify specific participants.

Physicians might have been incentivized by the opportunity to learn their specific personality type. The offer was made in the recruitment process and only occurred upon request by the physician. To receive their personality type, the physician was required to review the education materials provided by the Myers-Briggs Company through a recorded tutorial (Myers et al., 2009). Participation in the education is a stipulation placed by the Myers-Briggs Company in line with ethics of psychological practice. The estimated financial value to the physician is $20. The estimated professional value cannot be calculated. Influence in the recruitment process may have occurred by detracting physicians who already knew their personality type and attracting physicians who were most interested in developing their leadership competencies. Revealing personality type may positively impact the study results through more accurate assessment of personality type. Undue influence and bias were not possible in the knowledge of personality type because the education session occurs after the respondent has completed their survey.

## Summary

The purpose of this quantitative nonexperimental correlation study was to determine the role personality types and high-quality LMX, both independent variables, may play in the physician's ability to engender empowerment, the dependent variable, at academic medical centers in the United States. IRB approval was granted through Walden University and informed consent was provided to each participant explaining the voluntary nature of the study as well as the risks and benefits of participation. A survey-

based study through web-based technology was performed to address the gap in the

literature. Data were collected from physicians and their followers using a compilation of

the previously validated ELS (Amundsen & Martinsen, 2014), the MBTI personality

assessment tool  (Myers et al., 2009), and the LMX Scale survey (Liden & Maslyn,

1998).

After approval from organizational senior clinical leaders solicited through a

national collaborative, physicians were recruited through email and asked to provide

names of their teammates to receive follower surveys. The survey responses underwent *a*

*priori* analysis to assess for violations of the assumption of normalcy. Then the follower

responses were aggregated from individual to group-level and correlated using ANOVA

to determine strength of correlation and effect size. Statistical power and significance

were calculated using SPSS (IBM Corp., 2020). Once data processing ended, the results

were displayed and discussed for importance and relevance to the current gap in

knowledge of how empowerment behaviors of physicians correlates with their

personality types measured on the MBTI, and the impact of a high-quality LMX between

physicians and their followers.

Chapter 4: Results

In the current study, I explored empowerment behavior in physicians and the role personality type and LMX quality play in a physician's ability to engender empowerment in their followers. The purpose of this quantitative nonexperimental correlation study was to determine the role personality types and high-quality LMX, both independent variables, may play in the physician's ability to engender empowerment, the dependent variable, at academic medical centers in the United States.

Three research questions have been addressed in this study: (a) To what extent, if any, is there a relationship between personality types and empowerment behavior measured in physicians at academic medical centers in the United States? (b) To what extent, if any, is there a relationship between LMX quality and empowerment behavior measured in physicians at academic medical centers in the United States? (c) To what extent, if any, is there a relationship between personality types and LMX quality measured in physicians at academic medical centers in the United States? For each research question, the null hypothesis was that no relationship exists. The existence of a relationship served as the alternative hypotheses for each question.

In this chapter, I describe the data collection process along with the differences between the intended data collection and the actual process. Next, I present the results of the study with the associated statistical analyses. At the end of the chapter, I present the answers to the research questions.

**Data Collection**

Data collection occurred over 5 months from May 2020 through September 2020. The recruitment process included solicitation for participation on two medical leadership national list serves with multiple mailings of the solicitation requests. Approximately 60 senior leaders from nearly 30 organizations responded to the requests for participation. Once the inclusion and exclusion criteria were applied, individual requests for participation were sent to physicians in each of the qualified organizations. Thirty-five physician participants from 18 academic medical centers volunteered to participate. Twenty-two physicians initially completed the survey, but two requested to be removed from the study. The final analysis contains data from 20 physician participants across 13 academic medical centers and includes 93 followers of those leaders.

The sample size differed greatly from the study plan due to lower than anticipated response rates. Factors included the lack of personal connection between me and the potential study participants. Social media, such as list serves, and other online mechanisms have not been demonstrated to be as effective as recruiting mechanisms that have higher degrees of interpersonal connection (Topolovec-Vranic & Natarajan, 2016). In addition, the outbreak of the severe acute respiratory syndrome-related coronavirus 2, or SARS-CoV-2 (aka COVID-19) caused a limitation of personal contact via live physician and healthcare leadership meetings through the cancellation of all live professional meetings during the period of study. These limitations, coupled with a previously recognized low survey participation rate in physicians, greatly influenced recruitment numbers (see Pan et al., 2013; Partin et al., 2015). Despite targeting the

advertisement for study recruitment to a specific population, one study that used online recruitment mechanisms had a 4% response rate after multiple attempts (Ali et al., 2020). These factors significantly contributed to the recruitment limitations of the current study.

Demographics of the physician leaders are listed in Table 1. Physicians in leadership positions in this study ranged in age from 35 to 68 years old with a mode of 35 to 44 years old. Sixty-five percent of the physician respondents were male, and half of the physicians received their medical training in one of the primary care fields of study. Over half of the respondents were in leadership positions for more than 10 years and had some form of leadership training. Despite longevity in leadership positions, 55% of the physician leaders had been with their present organization less than 10 years, and 75% had been in their current role less than 5 years. These data are consistent with other studies evaluating the skills and competencies of physician leaders (see Hopkins, Fassiotto, Ku, Mammo, & Valantine, 2018; Weeks et al., 2020).

Table 1

*Demographics of Physician Leaders*

| Demographics | Subcategories | Percent |
| --- | --- | --- |
| Age of physician | 35-44 years | 35% |
| | 45-54 years | 30% |
| | 55-64 years | 30% |
| | 65+ years | 5% |
| Gender of physician | Female | 35% |
| | Male | 65% |
| Primary field of training (specialty) | Family Medicine | 30% |
| | Internal Medicine | 30% |
| | Emergency Medicine | 5% |
| | Psychiatry | 5% |
| | Radiology | 10% |
| | Anesthesiology | 5% |
| | Surgery (any specialty) | 15% |
| Length of time in practice as a physician | 11-15 years | 15% |
| | 16-20 years | 25% |
| | > 20 years | 60% |
| Formal leadership training | Yes | 75% |
| | No | 25% |
| Length of time in leadership | 1-5 years | 10% |
| | 6-10 years | 15% |
| | 11-15 years | 35% |
| | 16-20 years | 25% |
| | > 20 years | 15% |
| Length of time at current organization | < 1 year | 20% |
| | 1-5 years | 20% |
| | 6-10 years | 15% |
| | 11-15 years | 20% |
| | 16-20 years | 15% |
| | > 20 years | 10% |
| Length of time in current position | < 1 year | 40% |
| | 1-5 years | 35% |
| | 6-10 years | 10% |
| | 11-15 years | 10% |
| | 16-20 years | 0% |
| | > 20 years | 5% |

*Note*. This table shows the demographics of the physicians who completed the leader survey.

Each leader had up to five team members complete the follower survey. A total of 93 followers responded to the survey. Demographics of the team members completing the follower surveys were recorded with respect to their relationship with their physician leader. Twenty-four percent of the followers were the same age while 59% were the same gender as the leader. Followers' average length of time in their current position and with the leader were both 1 to 5 years. Followers' average length of time with the organization was 6 to 10 years and their average length of time in healthcare was 11 to 15 years. In-group reliability to determine the degree of reliability within the respondents is presented as the average of the average mean, standard deviation, variance, and range for each group of followers on the ELS and the LMX surveys. The ELS average score of 5.97+/- 0.6775 and LMX average score of 6.3447+/-0.5770 represent approximately 20% variance between member of each group for each survey (see James et al., 1984). One quarter of the respondents fit the same age demographic of their physician leader, and over half were of the same gender. Their average time with the leader of less than 5 years correlated with the leaders' average time in their current role. The followers' time with the organization and in healthcare mirrored the physician leader responses to the same question.

Each physician leader completed the MBTI assessment as part of this survey. Prior studies on personality in physicians indicated that the relative distribution of physicians' personality types differed from the general population of respondents and mirrored the distribution seen in executives (Aranda & Tilton, 2013; Myers et al., 2009). The distribution between each of the dichotomies in the physicians of this study,

executives, and the general population are displayed in Table 2. The small sample size in the current study makes comparison difficult and not statistically significant. However, trends favoring the prior distributions can be identified in the thinking versus feeling dichotomy while the judging versus perceiving dichotomy trends towards data from the general population rather than the prior physician study or the distribution found in executives. The extraversion versus introversion and sensing versus intuition dichotomies trended in the opposite direction in this study from prior research.

Table 2

*Myers-Briggs Type Indicator Distribution for Physicians, Executives, and the General Population*

|  | E | I | S | N | T | F | J | P |
|---|---|---|---|---|---|---|---|---|
| Physicians (current study) | 65 | 35 | 25 | 75 | 60 | 40 | 50 | 50 |
| Physicians (Aranda & Tilton, 2013) |  |  |  |  | 62 | 38 | 65 | 35 |
| Executives (Myers et al., 2009) | 47 | 53 | 66 | 44 | 95 | 5 | 87 | 13 |
| General Population (Myers et al., 2009) | 49 | 51 | 73 | 27 | 40 | 60 | 54 | 46 |

*Note.* Relative proportion of type indicator, by percent, for each of the dichotomies for participants in the current study, physicians studied by Aranda and Tilton (2013) and executives and general population data from Myers et al. (2009).

**Study Results**

ANCOVA was used to evaluate the study questions. A level of significance $p < 0.05$ with a Type I error of $\alpha = 5\%$ was used for all analyses in this study. Because collinearity between the two independent variables, personality type and LMX, was

suspected and posed as a research question, the data were evaluated for normality,

homoscedasticity, and collinearity (see Bartlett, 1949; Yang & Mathew, 2018). Figure 1

depicts the normality curve with ELS as the dependent variable and personality type and

LMX as independent variables. Figure 2 depicts the scatterplot of the residuals to test for

homoscedasticity with ELS as the dependent variable and personality type and LMX as

independent variables. Collinearity was evaluated with variance inflation factor value

analysis (Table 3). LMX was also tested for normal distribution (Figure 3). All four tests

of assumptions were acceptable to perform statistical analyses on the three research

questions using ANOVA and correlation analysis.
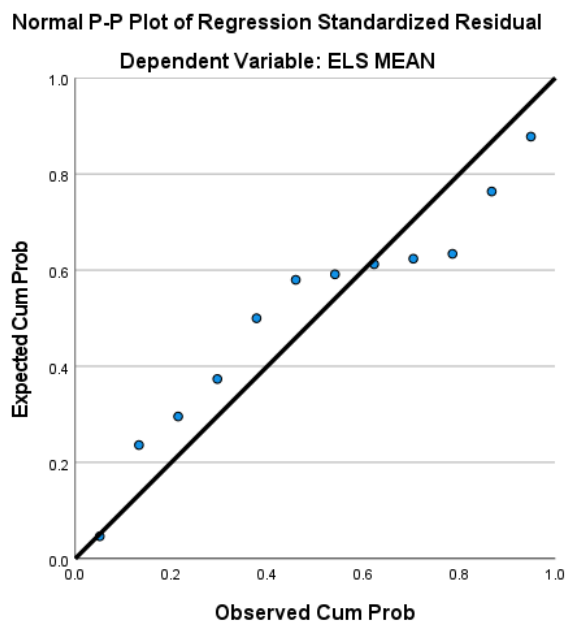


*Figure 1*. Normality curve with ELS as the dependent variable and personality type and LMX as independent variables.
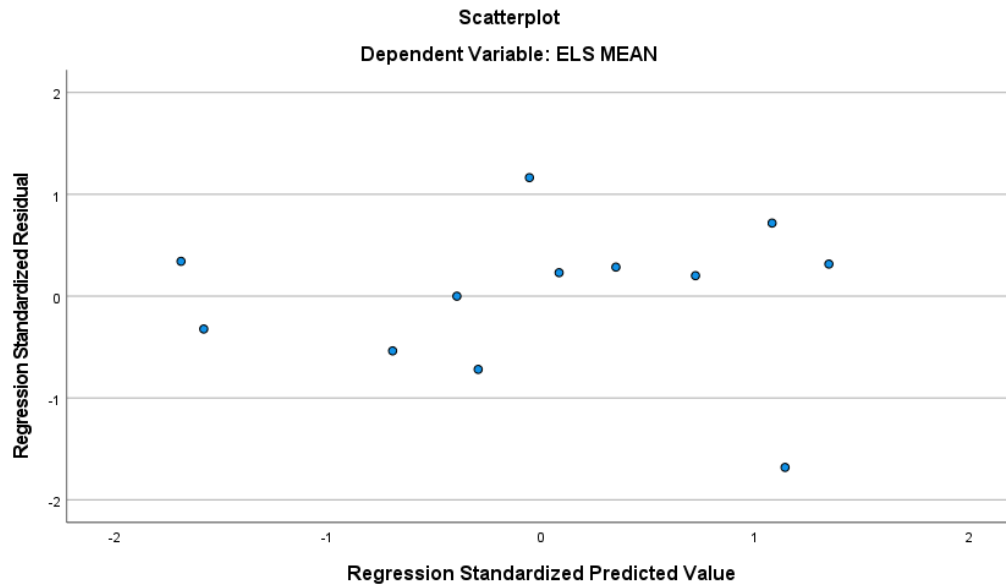
*Figure 2*. Homoscedasticity curve with ELS as the dependent variable and personality type and LMX as independent variables.

Table 3

*Collinearity Statistics for Testing of Assumptions*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| 1 | (Constant) | 3.132 | 1.657 | | 1.891 | .108 | | |
| | LMX-MDM MEAN | .444 | .275 | .527 | 1.614 | .158 | .765 | 1.307 |
| | E/I | -.072 | .253 | -.095 | -.284 | .786 | .728 | 1.373 |
| | S/N | .065 | .462 | .048 | .140 | .893 | .694 | 1.441 |
| | T/F | .165 | .237 | .208 | .695 | .513 | .908 | 1.101 |
| | J/P | -.244 | .243 | -.323 | -1.007 | .353 | .792 | 1.263 |

a. Dependent Variable: ELS MEAN

*Note*. ELS is dependent variable. Personality type and LMX are independent variables.
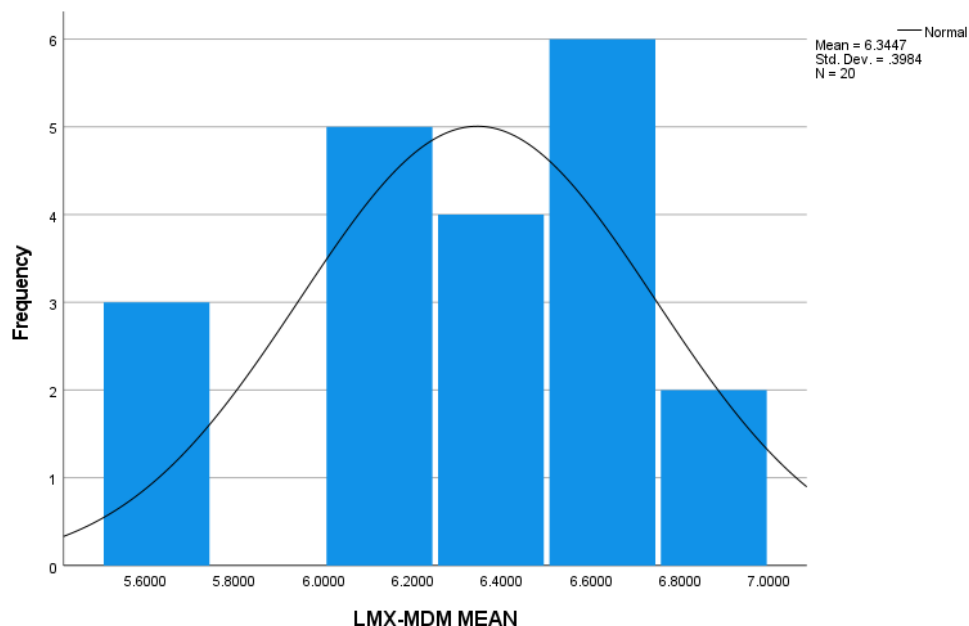
*Figure 3*. Distribution curve of LMX.

The first research question was as follows: To what extent, if any, is there a relationship between personality types and empowerment behavior measured in physicians at academic medical centers in the United States? The null hypothesis was that there is no relationship between personality types and empowerment behavior measured in physicians at academic medical centers in the United States. The alternative hypothesis was that there is a relationship between personality types and empowerment behavior measured in physicians at academic medical centers in the United States. I ran the data using ANCOVA with SPSS (see IBM Corp., 2020). ELS was the dependent variable, each of the dichotomies of personality type, E/I, S/N, T/F, and J/P, were factors, and LMX was included as a covariate. Additionally, age of the leader, gender of the leader, length as a leader, the presence of leadership training, length of time in the current position, length of time at the current organization, and length of time as a physician were

controlled in the analysis. None of the relationships between the four dichotomies (E/I,

S/N, T/F, J/P) and ELS were statistically significant at a $p < 0.05$ (Table 4). In addition,

F-statistic, significance, and partial Eta squared are displayed in Table 4. The partial Eta

squared for LMX was 0.800, therefore, while the statistical significance of the

relationship was not present ($p = 0.295$), a large effect was influential on the relationship

between ELS and the four dichotomies of personality type.

Table 4

*ANCOVA of the Relationship Between ELS and Myers-Briggs Type Indicator Four Dichotomies*

|  | Sum of Squares | *Df* | Mean Square | *F* | Sig. | Partial Eta Squared |
|---|---|---|---|---|---|---|
| E/I | 0.000 | 1 | 0.000 | 0.001 | 0.979 | 0.001 |
| S/N | 2.022E-7 | 1 | 2.022E-7 | 0.000 | 0.999 | 0.000 |
| T/F | 0.008 | 1 | 0.008 | 0.048 | 0.862 | 0.046 |
| J/P | 0.089 | 1 | 0.089 | 0.517 | 0.603 | 0.341 |
| LMX | 0.684 | 1 | 0.684 | 3.992 | 0.295 | 0.800 |
| Length as Leader | 0.023 | 1 | 0.023 | 0.137 | 0.775 | 0.120 |
| Leadership Training | 0.002 | 1 | 0.002 | 0.014 | 0.924 | 0.014 |
| Age | 0.031 | 1 | 0.031 | 0.181 | 0.744 | 0.153 |
| Gender | 0.018 | 1 | 0.018 | 0.104 | 0.801 | 0.094 |
| Length in Position | 0.033 | 1 | 0.033 | 0.193 | 0.736 | 0.162 |
| Length at Organization | 0.010 | 1 | 0.010 | 0.059 | 0.849 | 0.056 |
| Length as Physician | 0.093 | 1 | 0.093 | 0.542 | 0.596 | 0.351 |

*Note*. Analysis via SPSS. Non-significant relationship between ELS and personality type dichotomies.

The second research question was as follows: To what extent, if any, is there a relationship between LMX quality and empowerment behavior measured in physicians at academic medical centers in the United States? The null hypothesis was that there is no relationship between LMX quality and empowerment behavior measured in physicians at academic medical centers in the United States. The alternative hypothesis was that there is a relationship between LMX quality and empowerment behavior measured in physicians at academic medical centers in the United States. I ran the data in a partial correlation analysis using Pearson's correlation coefficient via SPSS (see IBM Corp., 2020). ELS was the dependent variable, LMX was the independent variable, and each of the dichotomies of personality type were included as control variables. Additionally, age of the leader, gender of the leader, length as a leader, the presence of leadership training, length of time in the current position, length of time at the current organization, and length of time as a physician were controlled in the analysis (Table 5). Linear analysis with Pearson correlation demonstrated a statistically significant relationship between ELS and LMX ($r = 0.839$, $p = 0.005$). A linear relationship is visible graphically (Figure 4) with an $R^2 = 0.370$.

Table 5

*Partial Correlation Analysis using Pearson's r Between ELS and LMX Quality*

|  |  |  | ELS MEAN | LMX-MDM MEAN |
|---|---|---|---|---|
| No control variables | ELS MEAN | Correlation | 1.000 | 0.608 |
|  |  | Significance (2-tailed) |  | 0.004 |
|  |  | df | 0 | 18 |
|  | LMX-MDM MEAN | Correlation | 0.608 | 1.000 |
|  |  | Significance (2-tailed) | 0.004 |  |
|  |  | df | 18 | 0 |
|  | E/I | Correlation | -0.224 | -0.112 |
|  |  | Significance (2-tailed) | 0.342 | 0.639 |
|  |  | df | 18 | 18 |
|  | S/N | Correlation | -0.203 | -0.167 |
|  |  | Significance (2-tailed) | 0.390 | 0.483 |
|  |  | df | 18 | 18 |
|  | T/F | Correlation | 0.165 | 0.023 |
|  |  | Significance (2-tailed) | 0.487 | 0.924 |
|  |  | df | 18 | 18 |
|  | J/P | Correlation | -0.309 | -0.183 |
|  |  | Significance (2-tailed) | 0.185 | 0.440 |
|  |  | df | 18 | 18 |
|  | Age | Correlation | 0.070 | 0.400 |
|  |  | Significance (2-tailed) | 0.769 | 0.080 |
|  |  | df | 18 | 18 |
|  | Gender | Correlation | -0.014 | -0.037 |
|  |  | Significance (2-tailed) | 0.953 | 0.877 |
|  |  | df | 18 | 18 |
|  | Length as leader | Correlation | -0.151 | 0.347 |
|  |  | Significance (2-tailed) | 0.524 | 0.134 |
|  |  | df | 18 | 18 |
|  | Leadership Training | Correlation | -0.252 | -0.385 |
|  |  | Significance (2-tailed) | 0.284 | 0.094 |
|  |  | df | 18 | 18 |
|  | Length in position | Correlation | 0.320 | 0.131 |
|  |  | Significance (2-tailed) | 0.168 | 0.583 |
|  |  | df | 18 | 18 |
|  | Length at organization | Correlation | -0.225 | -0.090 |
|  |  | Significance (2-tailed) | 0.340 | 0.705 |
|  |  | df | 18 | 18 |

(table continues)

| | | | ELS MEAN | LMX-MDM MEAN |
|---|---|---|---|---|
| | Length as physician | Correlation | -0.070 | 0.553 |
| | | Significance (2-tailed) | 0.770 | 0.011 |
| | | df | 18 | 18 |
| Controlled for MBTI, training, length as leader, in position, at organization, and as physician | ELS MEAN | Correlation | 1.000 | 0.839 |
| | | Significance (2-tailed) | | 0.005 |
| | | df | 0 | 7 |
| | LMX-MDM MEAN | Correlation | 0.839 | 1.000 |
| | | Significance (2-tailed) | 0.005 | |
| | | df | 7 | 0 |

*Note*. Analysis via SPSS. Partial correlation using control variables of MBTI four dichotomies, age of the leader, gender of the leader, length as a leader, the presence of leadership training, length of time in the current position, length of time at the current organization, and length of time as a physician.
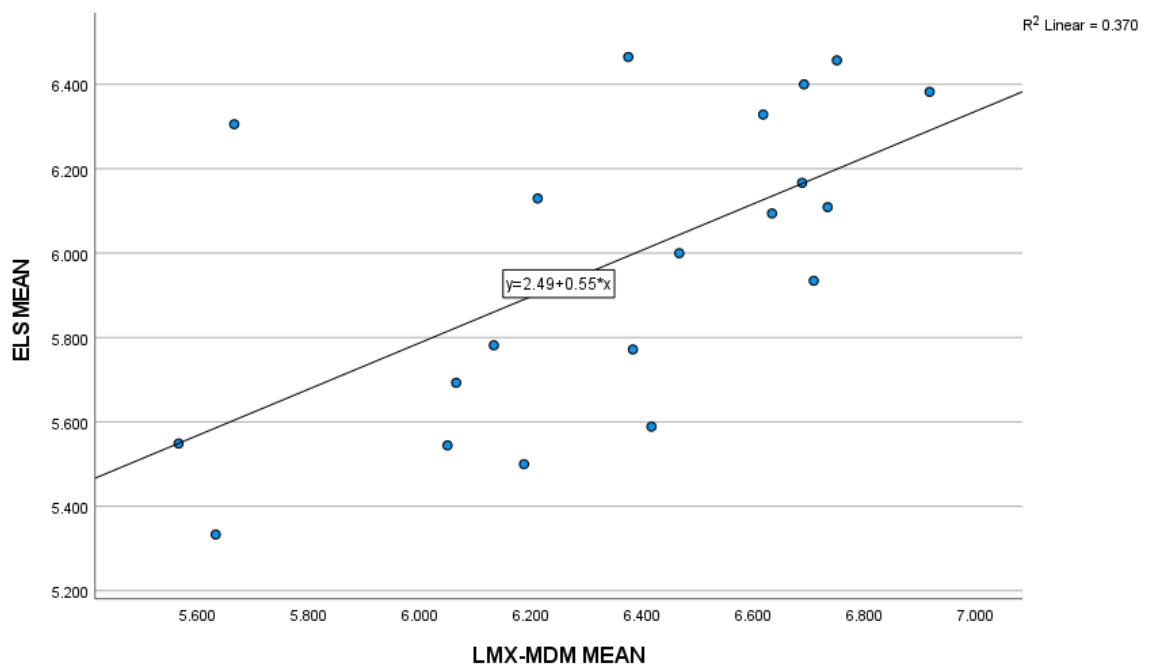


*Figure 4*. Relationship between ELS and LMX. A statistically significant relationship exists ($r = 0.839$, $p = 0.005$).

The third research question was as follows: To what extent, if any, is there a relationship between personality types and LMX quality measured in physicians at academic medical centers in the United States? The null hypothesis was that there is no relationship between personality types and LMX quality measured in physicians at academic medical centers in the United States. The alternative hypothesis was that there is a relationship between personality types and LMX quality measured in physicians at academic medical centers in the United States. I ran the data using ANCOVA with SPSS (see IBM Corp., 2020). LMX was the dependent variable, each of the dichotomies of personality type, E/I, S/N, T/F, and J/P, were factors, and ELS was included as a covariate. Additionally, age of the leader, gender of the leader, length as a leader, the presence of leadership training, length of time in the current position, length of time at the current organization, and length of time as a physician were controlled in the analysis. None of the relationships between the four dichotomies (E/I, S/N, T/F, J/P) and LMX quality were statistically significant at a $p < 0.05$ (Table 6). In addition, F-statistic, significance, and partial Eta squared are displayed in Table 6. . The partial Eta squared for ELS was 0.800, therefore, while the statistical significance of the relationship was not present ($p = 0.295$), a large effect was influential on the relationship between LMX and the four dichotomies of personality type.

Table 6

*ANCOVA of the Relationship Between LMX Quality and Myers-Briggs Type Indicator Four Dichotomies*

| | Sum of Squares | *Df* | Mean Square | *F* | Sig. | Partial Eta Squared |
|---|---|---|---|---|---|---|
| E/I | 4.454E-5 | 1 | 4.454E-1 | 0.000 | 0.990 | 0.000 |
| S/N | 9.174E-6 | 1 | 9.174E-6 | 0.000 | 0.995 | 0.000 |
| T/F | 0.021 | 1 | 0.021 | 0.124 | 0.784 | 0.110 |
| J/P | 0.061 | 1 | 0.061 | 0.361 | 0.655 | 0.265 |
| LMX | 0.671 | 1 | 0.671 | 3.992 | 0.295 | 0.800 |
| Length as Leader | 0.015 | 1 | 0.015 | 0.092 | 0.813 | 0.084 |
| Leadership Training | 0.001 | 1 | 0.001 | 0.007 | 0.948 | 0.007 |
| Age | 0.028 | 1 | 0.028 | 0.165 | 0.754 | 0.142 |
| Gender | 0.036 | 1 | 0.036 | 0.213 | 0.725 | 0.176 |
| Length in Position | 0.023 | 1 | 0.023 | 0.135 | 0.776 | 0.119 |
| Length at Organization | 0.013 | 1 | 0.013 | 0.077 | 0.828 | 0.071 |
| Length as Physician | 0.106 | 1 | 0.106 | 0.633 | 0.572 | 0.388 |

*Note.* Analysis via SPSS. Nonsignificant relationship between LMX and personality type dichotomies.

## Summary

Empowering behavior in physicians correlated to the quality of LMX in this study. Therefore, I rejected the null hypothesis that no relationship exists and accepted the alternative hypothesis that a relationship exists. A relationship between empowering

behavior in physicians and the four MBTI dichotomies for personality was not demonstrated. A relationship between LMX quality and the four MBTI dichotomies for personality was not demonstrated. For research questions one and three, I did not reject the null hypotheses that no relationships exist.

The low power of the present study due to participation rates may have impacted the findings. *A priori* calculations indicated that 100 physician participants would be needed to sufficiently power the study. The restriction to 20 physician participants limited the diversity of the personality type results and caused the creation of small populations for the categorical variables used in the analysis.

Despite the low enrollment, the relationship between empowering behavior and LMX displayed a statistically significant and strong effect, demonstrated by a Pearson correlation of 0.839. When controlled for personality type and potential confounding variables, this relationship remained statistically significant. The nature of the relationship will be discussed further in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

In this quantitative nonexperimental correlation study, I explored empowerment behavior in physicians and the role personality type and LMX quality play in a physician's ability to engender empowerment in their followers. The purpose was to determine the role personality types and high-quality LMX, both independent variables, may play in the physician's ability to engender empowerment, the dependent variable, at academic medical centers in the United States.

My intention was to gain understanding in the role personality types and high-quality LMX may play in the physician's ability to engender empowerment at academic medical centers in the United States. The theoretical framework included psychological typology theory of personalities, empowerment theory, and LMX theory (see Dansereau et al., 1975; Jung, 1971; Rappaport, Studies in empowerment: Introduction to the issue, 1984). These three theories intertwine as antecedents to leadership characteristics such that understanding the role each may play could augment the development of high-quality leaders in healthcare.

In this study, I found that a statistically significant relationship existed between empowering behavior and LMX quality. A statistically significant relationship did not exist between empowering behavior and personality type or between personality type and LMX quality. A strong relationship existed between empowerment behavior and LMX, though study size may have impacted the results for all three study questions.

**Interpretation of Findings**

Empowerment of frontline healthcare workers leads to enhancement of safety, quality, cost, and experience (Horwitz & Horwitz, 2017). Understanding the factors that lead to increased empowerment behaviors in physicians may contribute to higher degrees of empowerment in frontline healthcare workers who work as team members of those physicians (Gottfredson & Aguinis, 2017). High-quality LMX has been associated with increased quality and safety outcomes in healthcare settings (Jungbauer et al., 2018). Hanse et al. (2016) identified a relationship between empowerment in healthcare leaders and the quality of their LMX with direct reports. In the current study, I identified a relationship between empowerment behavior in physicians and the quality of their LMX with members of their clinical team. Followers who identified having a high-quality relationship with their physician team leaders also identified those physician leaders as displaying higher levels of empowering behaviors than followers who identified a lower quality relationship with their physician team members.

The theoretic foundation of LMX theory, role theory, centers on the relationship between leader and subordinate to ascribe job duties for the subordinate and authority to the leader (Dansereau et al., 1975). By extrapolation, it follows that physicians who enjoy higher-quality relationships with their team members may be more likely to allow team members to perform higher level tasks, trust their team members judgement more, and afford their team members greater degrees of autonomy in the performance of their clinical duties. These actions by the physician could be perceived by the team member as empowering behaviors.

Empowerment theory posits that the relationship between management and frontline labor produces a dynamic that allows ideas from the labor force to be put into operation (Rappaport, 1984). Physicians displaying higher degrees of empowerment behavior may be ascribing to the concept that giving individuals of the community the power to solve problems leads to better, more creative solutions. In that manner, physicians can extend their clinical reach beyond what they can accomplish individually, thereby increasing clinical efficacy and the quality of care delivery.

Findings from this study are congruent with prior studies on transformational leadership (see Huynh & Sweeny, 2014). Transformational leadership is described as one that focuses on the relationship between leader and followers (Hersey & Blanchard, 1974). A core aspect of transformational leadership, emotional intelligence, increases the emphasis on the leader's ability to understand and relate to followers (Harms & Credé, 2010). More recently, Fletcher, Mir, Friedman, and Zuckerman (2020) described the relationship between transformational leadership, emotional intelligence, LMX quality, and personality. They reflected that each of the leadership theories contributed to the overall effectiveness of the physician leader and that all of them play an important role in the relationship between leader and follower (Fletcher et al., 2020). In the current study, I emphasized the value of the relationship in contributing to empowering behaviors in the physician leader, which reflects a transformational approach to leading.

The relationship between empowering behavior and personality type as determined by the MBTI assessment was not statistically significant in this study. The distribution of individual dichotomous pairs was consistent with prior distribution studies

(see Aranda & Tilton, 2013; Myers et al., 2009). The sample size was not sufficient to adequately determine if this consistency would hold true in the larger population of physician leaders at academic medical centers in the United States. The sample size also limited the power of the analysis of the relationship between empowering behavior and personality types. None of the four dichotomous pairs demonstrated a statistically significant relationship with empowering behavior. Fletcher et al. (2020) discussed the importance of personality in the leadership development of the physician with regards to the self-actualization that must occur for the leader to understand the differences and similarities between themselves and others and to become more intentional in how they lead. Several others researched the impact of personality types on career choice with mixed results on the role personality plays on success (Borges & Savickas, 2002; Hughes et al., 2018; McLarnon et al., 2016; Mullola et al., 2018).

The relationship between LMX quality and the MBTI assessment of personality was not statistically significant in this study. Sample size may have impacted the result in this analysis. Combined, the lack of demonstrated statistical significance in the relationship of personality type with either empowering behavior or LMX quality calls into question the value in understanding personality as an antecedent to high-quality, empowering leadership. The typology theory of personality may be used to explain the unidentified relationship between personality type and empowerment behavior or LMX quality. Personality is a series of archetypes reflective of the unconscious self, which underly outward character traits of an individual (Jung, 1971). Awareness and understanding of these traits may allow an individual to alter their natural behavior to one

more aligned with their environment (Ugoani, 2020). Leadership development courses often have a component of personality assessment directed at self-reflection and understanding of the leader's natural tendencies in effort to modify behavior in a positive manner (Tornetta III et al., 2019). In this way, it is possible the personality type of physician leaders may not be directly observed by team members and therefore not able to be assessed by survey questionnaires to followers of the physician.

## Limitations of the Study

The primary limitation of this study was the small sample size. Twenty physician participants did not provide enough power in the analysis to obtain a true sense of the relationship between personality type and either empowerment behavior or LMX quality. Unforeseen factors contributed to the restricted sample size. Continuation of the travel ban due to the severe acute respiratory syndrome-related coronavirus 2 (COVID-19) inhibited the person-to-person contact often necessary to recruit participants to survey-based studies. The population under investigation, physicians in leadership positions at academic medical centers, are also among those most affected by the global pandemic, further restricting their time available to complete voluntary surveys.

The results of this study are generalizable to physicians working at academic medical centers but may not apply to physicians working in smaller hospitals, private practices, or outside direct patient care in areas such as the pharmaceutical or insurance industries. Physicians in those areas may not receive the same leadership training. Often, they have less clinical exposure, further altering their outward behavioral traits and

characteristics. Those differences would impact how followers perceive the physician as a leader.

While the relationship between empowerment and LMX quality was statistically significant and strong, the small sample size may have impacted those results through diminished reproducibility and reliability. Congruence with prior studies is reassuring but does not add to the validity of the data collected in this study.

## Recommendations

Further research is needed in the evaluation of the relationship between empowering behavior and personality type as well as the relationship between LMX quality and personality type. In the current study, I presented a simple, reproducible framework that can be reinitiated at a future date when better data collection is possible. Subtle changes such as using the five factor model of personality (Judge & Bono, 2000) instead of the MBTI may also be considered in future studies. LMX quality may also be evaluated from both the perspective of the leader and the follower to evaluate for concordance. Personality of the followers may be collected to assess for concordance as well.

Each of the above recommendations would augment the analysis of the relationship between empowerment, LMX quality, and personality type. From those results, better clarity of the role personality and LMX plays in a physician's ability to engender empowerment in their team members may result. Additional questions such as the role differential personality types between leader and follower play in the LMX quality could be explored with advanced data collection in that area. Prior researchers

have demonstrated a blunting effect of discordant personalities on empowerment and relationship quality (Allinson et al., 2001).

Other modifications to the study design may be considered such as increased emphasis on prior leadership training, time spent in the specific leadership role, or the role duration of the leader-follower relationship plays in empowerment and LMX quality. These factors may lead to heightened scores in both empowerment and relationship quality due to increased familiarity between the leader and follower and because of greater skill development on the part of the physician leader. Without leadership training, physicians rely on their medical training to lead team members (Chapman et al., 2014). Understanding the applicability of those skills may be important to determine other antecedents to high-quality physician leadership.

The current study included physicians working at academic medical centers in the United States. Physicians in this setting may be different than those practicing in other countries or at smaller settings such as private practices or community health centers. Academic physicians are employed, have a focus outside of direct patient care, and are exposed to academic opportunities such as continuing education at levels unparalleled in other clinical settings (Pradarelli et al., 2016). Physicians at academic medical centers are more likely to have team members who are direct reports rather than referent followers as seen in other healthcare settings (Binci et al., 2016). Non-US physicians may also be subject to different training and work environments further increasing the need to reproduce the current study in an international population.

A subset of physicians work outside of clinical medicine in industries such as the pharmaceutical industry or the insurance industry. Others work as consultants or in information technology. These physicians require further study to understand the importance of empowerment behavior in those fields. The impact of personality and LMX quality may also differ in those industries.

## Implications

Empowering behavior in healthcare leaders relates to safety and quality in healthcare delivery (Alloubani et al., 2014; Firth-Cozens & Mowbray, 2001; Horwitz & Horwitz, 2017). Improved outcomes also relate to high-quality LMX (Carter et al., 2012; Hanse et al., 2014; Jungbauer et al., 2018). The current study demonstrated a statistically significant relationship between LMX quality and empowering behavior in physicians who hold leadership roles in healthcare. The potential impact for positive social change occurs at the individual, organizational, and societal levels.

The findings of this study may inform organizational and leadership development professionals who work to teach leadership skills to physicians and to physicians interested in becoming better leaders. Developing strong interpersonal relationships with their followers may lead to higher levels of empowering behavior and possibly to improved performance by the healthcare team resulting in better outcomes. Other members of the healthcare team may consider working to strengthen their interpersonal relationship with the physician leader to increase the level of psychological empowerment received as a mechanism to improve clinical outcomes. The resultant

positive social change would have a direct effect on the physician leader as a caregiver in society.

Organizations may experience positive social change through the findings of this study by the development of educational sessions for physicians and their team members. Team building exercises, social gatherings, and group training may all be used to increase the quality of relationship between leaders and followers. Assessments of compatibility may be considered in the formation of teams to facilitate success, though identifying specific factors is outside of the scope of this study. Organizations focused on improving safety and quality of care delivery may evaluate the level of empowering behavior in leaders and the quality of LMX relationships as contributing factors.

Positive social change in society may occur from this work as it contributes to the extant literature on healthcare safety and quality, leading to fewer iatrogenic events and improved outcomes (Shekelle et al., 2013). The increased understanding of the relationship between empowering behavior and LMX quality may build on prior knowledge to elevate understanding of the importance of interpersonal relationships across professions in healthcare as they seek to attain the common goal of better outcomes. Improved outcomes and safety lead to decreased societal morbidity, greater levels of health, and increased life expectancy (Cinaroglu & Baser, 2018). These findings may also inform medical education curricula as educators develop evidence-based methods to teach future physicians in the art of healthcare delivery.

The research method and theoretical foundation utilized in this study adds to positive social change through the reproducibility of the design and the intention to seek

factors that lead to improved healthcare outcomes. Further work on personality can be accomplished in this framework and other covariates such as genetic or behavioral factors of the physician could be studied to identify antecedents to high empowerment behavior. Other considerations include a more detailed look at specific factors of the relationship between the leader and follower, which may advance the contribution to positive social change by providing valuable insight into how to grow the relationship to each participant of the dyad.

## Conclusions

This study reinforced the presence of a relationship between empowerment behavior in a leader and the quality of the leader-member relationship. Specifically, physicians in leadership positions at academic medical centers in the United States display a higher degree of empowerment behavior when the relationship between them and their team members is of higher quality. The relationship between MBTI personality type in the physician and empowerment behavior was not statistically significant but lacked sufficient power to draw conclusions. The relationship between MBTI personality type in the physician and LMX quality was not statistically significant but lacked sufficient power to draw conclusions.

Leadership development specialists at healthcare organizations may use this information to design education to the leader on relationship-building and maintaining interpersonal relations. Leaders at healthcare organizations may use these results to further their own skills as leaders, or in the assessment and appointment of future leaders. Leadership researchers may use these data to develop further studies on specific aspects

of empowerment behavior, more nuanced details about LMX quality, or other factors that may serve as antecedents to higher quality leadership performance as it pertains to improved healthcare outcomes. Future studies may also explore the role personality plays in the relationship between leader and followers and in the display of empowerment behavior in the leader.

Positive social change may result from these findings through acquisition and application of interpersonal skills in organizational leaders to enhance their relationships with their followers. In turn, these relationships may generate more empowerment behavior which may lead to safer healthcare delivery systems and higher quality outcomes.

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Appendix A: Permission to Solicit Volunteers

Organization 1:

From: Dardani,Will
Sent: Wednesday, November 21, 2018 10:11 AM
To: Reed, Tony S
Subject: RE: Physician leadership survey

Hi Tony,
It was great speaking with you yesterday. I appreciate you sharing details on your dissertation and welcome the opportunity to assist through leveraging our AMC member networks. As discussed, please find attached an initial list of physician leaders that can be invited to participate in your survey. Please confirm whether this is an appropriate group for purposes of your research. If so, I will work with you on the timing to distribute the invitation to our members.

Thanks and please don't hesitate to reach out with questions moving forward.

Best,
Will

Will Dardani
Senior Networks Director
Vizient University Health System Consortium

Vizient
155 North Wacker Dr
Chicago, IL 60606
vizientinc.com

From: Reed, Tony S
Sent: Tuesday, November 20, 2018 12:37 PM
To: Dardani,Will
Subject: Physician leadership survey

Will –

Thank you for the conversation this afternoon. As I mentioned on the call, I am working on my PhD in Management with a concentration in Leadership & Change. I have focused my dissertation on how empowerment behavior in physician-leaders correlates with personality types and leader-member exchange quality at academic medical centers in the US. This is a survey-based research instrument using the Myers-Briggs Type Indicator

and SurveyMonkey. Informed consent will be obtained from all participants, physician-leader and followers, through the IRB process at Walden University.

My request is to use the Vizient networks to recruit physicians as a starting point for my survey. Please let me know if that is possible and the next steps in the process.

Thanks,
Tony

Organization 2:

On Aug 22, 2020, at 11:20 AM, Peter Angood wrote:

Yes, I did. Sorry for the delay, had a Board meeting this past week and was distracted. Yup, the team feels, like I do, this is a go! We look forward to working with you and to learning results as they roll & written up. Thanks again for thinking of us.

Peter Angood MD
President & CEO
American Association for Physician Leadership - Washington DC
Website: physicianleaders.org

**From:** Tony Reed
**Sent:** Saturday, August 22, 2020 6:55:58 AM
**To:** Peter Angood
**Subject:** Re: Physician Leader Research

Hi Peter -

I was wondering if you had a chance to discuss my project with your team? No worries if not yet, I just didn't want to fall too far off the radar in an overpacked world.

Thanks,
Tony

**From:** Peter Angood
**Sent:** Thursday, August 13, 2020 9:16 AM
**To:** Tony Reed
**Subject:** Re: Physician Leader Research

That helps Tony – thanks so much. I shall discuss with the team and get back with you shortly.

All the best – Peter

**From:** Tony Reed
**Date:** Wednesday, August 12, 2020 at 20:56
**To:** Peter Angood
**Subject:** Re: Physician Leader Research

Absolutely!

The premise is fairly straightforward: Physicians, by virtue of their position as the leaders of inter-professional healthcare teams, heavily impact safety, quality, experience, and cost. However, we don't know a lot about the antecedents to high-quality physician-leadership.

In the study, I use a quantitative non-experimental correlation approach with a theoretical framework of empowering leadership, Jung's psychological types, and leader-member exchange quality. The purpose is to determine the role personality types and high-quality leader-member exchange may play in the physician's ability to engender empowerment.

I've attached the prospectus if you want to read more about it. I'm happy to send along the proposal if desired.

Should you determine this is acceptable to allow access to the AAPL database, I will need an email confirmation back to submit to my IRB.

Thanks,
Tony

On Wednesday, August 12, 2020, 11:36:12 AM EDT, Peter Angood
wrote:

Great – thanks.

Would you be able to supply a few more details on the project then? Thanks

All the best – Peter

**From:** Tony Reed
**Date:** Wednesday, August 12, 2020 at 11:32
**To:** Peter Angood
**Subject:** Re: Physician Leader Research

I always consider PLJ my first choice for publication. This project specifically deals with physicians in leadership. I can think of no better place to start for an article on that.

Tony

On Aug 12, 2020, at 11:04 AM, Peter Angood  wrote:

Hi Tony – thanks for reaching out and I hope all is going well for you these days.

We do have dissertation projects tap into the AAPL database on occasion. Whether we allow for this is on a case-by-case basis after we look more closely at the project specifics. If approved, then we usually ask that as part of the agreement there is an article written for the AAPL journals to help provide broader access to the results. Is that of any interest? Thanks for reaching out and good luck with the dissertation work.

All the best – Peter

**From:** Tony Reed
**Date:** Saturday, August 8, 2020 at 10:01
**To:** Peter Angood
**Subject:** Physician Leader Research

Peter -

I hope all is well with you, your family, and the team at AAPL. It's been a bit of a haul up here in Philadelphia, but thankfully, we've had a breather of late and a chance to refuel for a potential second wave. I look forward to live meetings in the future though. I do miss the camaraderie.

I am writing to ask a question about research. I am mid-stream in data collection for a doctoral dissertation evaluating the relationship between empowering behavior, personality type, and the leader-follower dyadic exchange. It's a quantitative study using Myers Briggs, the Empowering Leadership Scale, and the multi-dimensional Leader Member Exchange scale. A physician-leader provides the email addresses of 10 followers and then completes the MBTI (~30 minutes). 5 of the 10 followers are then randomly chosen to complete the 2 surveys (~10 minutes).

Is it possible and appropriate to use the AAPL Membership Groups to ask for individuals and sites willing to participate? Is there a better or more appropriate mechanism through the AAPL channels? I am happy to provide the IRB materials and study proposal for your review should you like more information. I am always happy to chat live.

Thanks, Tony

Appendix B: Organizational Senior Clinical Leader Permission to Access

Senior Clinical Leader –

My name is Tony S. Reed, MD, an academic leader like you. I am asking for your help as I complete my dissertation study to earn my PhD in Management with a concentration in Organizational Leadership from Walden University.

As you know, physicians greatly influence the safety and quality of care delivered to our patients. But they do not work alone. Team members provide extraordinary support to their efforts and extend their reach significantly. My goal is to uncover factors that lead to high performance healthcare teams. These factors include empowerment, personality, and the relationship between a leader and their followers.

I write to you to <u>seek your permission</u> to access physician-leaders within your organization and up to 10 of their followers. The leaders will be asked to take the Myers-Briggs Type Indicator (MBTI), a personality assessment tool that will take them approximately 30 minutes to complete and will provide valuable information about their approach to interpersonal interaction. They will then be asked to provide the names and emails of 10 team members with whom they work. The team members will be asked to complete a 10-minute survey about their team interactions and the physician-leader's leadership style. All responses will be held confidential and the information will be deidentified.

If you approve, I ask that you reply to this request and include the contact information for the individual at your organization who may have best access to send an email solicitation to participate to your physician-leaders. Generally, that would be your Medical Staff Office or Faculty Affairs Department.

Should you have questions about the procedures, please do not hesitate to reach out. Thank you in advance for your agreement to allow participation in this study.

Sincerely,

Tony

<insert signature stamp>

## Appendix C: Empowering Leadership Scale Permission and Questions

Dear Tony, thank you for question about using the ELS.
You can of cours use the scale. I wish you good luck with your doctoral dissertation.

Best wishes,
Stein

**Fra:** Reed, Tony S
**Sendt:** 28. september 2018 04:14
**Til:** Stein Amundsen
**Kopi:** Reed, Tony S
**Emne:** Empowering Leadership Scale

Dr. Amundsen –

My name is Tony S. Reed, MD, MBA. I am the associate chief medical officer at Temple University Hospital in Philadelphia, Pennsylvania (United States of America), an associate professor of family medicine and sports medicine at our school of medicine, and a doctoral candidate for a PhD in Management with a concentration in Organizational Leadership and Change through Walden University.

I am writing to request permission to use the Empowering Leadership Scale you developed and validated in your 2014 article: "Empowering leadership: Construct clarification, conceptualization, and validation of a new scale" published in *The Leadership Quarterly*. I intend to use the scale as part of my doctoral dissertation on empowering behaviors in physician-leaders.

Thank you in advance for your consideration and any additional insight on empowerment you may choose to convey.

Tony

*Empowering Leadership Scale*
*(1 = never; 7 = always)*

*Autonomy Support*

My leader conveys that I shall take responsibility.

My leader gives me power.

My leader gives me authority over issues within my department.

My leader expresses positive attitudes related to me starting with my own defined tasks.

My leader encourages me to take initiative.

My leader is concerned that I reach my goals.

My leader is concerned that I work in a goal-directed manner.

My leader listens to me.

My leader recognizes my strong and weak sides.

My leader invites me to use my strong sides when needed.

My leader conveys a bright view of the future.

My leader discusses shared affairs with me.


*Development Support*

My leader lets me see how he/she organizes his/her work.

My leader's planning of his/her work is visible to me.

I gain insights into how my leader arranges his/her work days.

My leader shows me how I can improve my way of working.

My leader guides me in how I can do my work in the best way.

My leader tells me about his/her own way of organizing his/her work

Appendix D: Myers-Briggs Type Indicator Permission

Subject: MBTI research
From: Justin Arneson
To: Tony Reed;
Date: Monday, October 1, 2018 5:03 PM

Hi Tony,

I am following up based on your recent conversation with Wendy. We would be pleased to grant permission for you to use the MBTI in your proposed research. While we don't have the bandwidth at this time to actively collaborate in your research, we would certainly be interested in receiving copies of any outputs/presentations/publications. You may administer the MBTIs from your account. If necessary or helpful, we could also extract your data and provide you with a database of results at the conclusion of your research (note that our system only retains email addresses, so in order to match our data with any external data, you would need to rely on that). Our data extraction fee is $250, but I can cut that in half given that you would be using the results for research purposes.

A quick review of your proposal didn't surface any major gaps or issues – it looks like a promising area of inquiry. If you have any questions, or need anything additional from me, just let me know.

Justin


Justin Arneson, PhD
Research Scientist
CPP – The Myers-Briggs® Company
185 N. Wolfe Road
Sunnyvale, CA 94086

Appendix E: Leader-Member Exchange Quality Scale Permission and Questions

**From:** Robert Liden
**To:** Reed, Tony S
**Subject:** Re: LMX-MDM Survey Instrument
**Date:** Thursday, September 27, 2018 10:35:05 PM
**Attachments:** image001.png
image001.png
LMX-MDM.docx

Yes, Tony, you are welcome to use our scale, and it is attached.

Best of luck with your research,
Bob

On Thu, Sep 27, 2018 at 9:15 PM Reed, Tony S
wrote:

Dr. Liden –

My name is Tony S. Reed, MD, MBA. I am the associate chief medical officer at Temple University Hospital in Philadelphia, PA, an associate professor of family medicine and sports medicine at our school of medicine, and a doctoral candidate for a PhD in Management with a concentration in Organizational Leadership and Change through Walden University.

I am writing to request permission to use the multidimensional Leader-Member Exchange Scale you developed and validated in your 1998 article: "Multidimensionality of Leader-Member Exchange: An empirical assessment through scale development" published in the *Journal of Management*. I intend to use the scale as part of my doctoral dissertation on LMX quality between physician-leaders and their followers.

Thank you in advance for your consideration and any additional insight on LMX quality you may choose to convey.

Tony

# LMX-MDM*

*In the following set of questions, think of your immediate manager (or team leader),*

_____. *[If this is NOT the person who rates your performance, please write in the correct name and contact one of our research staff.] Please select your response from the 7 presented below and enter the corresponding number in the space to the left of each question.*

| Strongly Disagree | Disagree | Slightly Disagree | Neither Disagree Nor Agree | Slightly Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

___1.   I respect my manager's knowledge of and competence on the job.

___2.   My manager would defend me to others in the organization if I made an honest mistake.

___3.   My manager is the kind of person one would like to have as a friend.

___4.   I do not mind working my hardest for my manager.

___5.   My manager would come to my defense if I were "attacked" by others.

___6.   I like my manager very much as a person.

___7.   I do work for my manager that goes beyond what is expected of me in my job.

___8.   I admire my manager's professional skills.

___9.   My manager defends (would defend) my work actions to a superior, even without complete knowledge of the issue in question.

___10.   My manager is a lot of fun to work with.

___11.   I am willing to apply extra efforts, beyond those normally required, to meet my manager's work goals.

___12.   I am impressed with my manager's knowledge of his/her job.

*For scale development details on this scale, please refer to Liden, R.C., & Maslyn, J.M. (1998). Multidimensionality of leader-member exchange:  An empirical assessment through scale development. **Journal of Management**, *24*, 43-72. Be sure to read the "Addendum" on page 68 of this article.

Item #7 was modified because some respondents no longer have or know about formal job descriptions.

**Scoring**

Unit weighting should be used. So simply add all 12 of the scale scores for each respondent if you wish to have an overall LMX value. If you plan to analyze each dimension separately, add the 3 items for each dimension together. For ease in interpretation, we recommend dividing by the number of items (12 for overall LMX, and 3 for each dimension). Doing this allows direct comparisons of the means with the scale anchors (1 to 7)

Respect: 1, 8, 12
Loyalty: 2, 5, 9
Affect: 3, 6, 10
Contribution: 4, 7, 11

Appendix F: Physician-Leader Request to Participate

Doctor –

My name is Tony S. Reed, MD, a physician-leader like you. Three years ago, I embarked on a journey to learn more about us as physicians and as leaders. I am asking for your help as I complete my dissertation study to earn my PhD in Management with a concentration in Organizational Leadership from Walden University.

As you know, physicians greatly influence the safety and quality of care delivered to our patients. But we don't work alone. Our team members provide extraordinary support to our efforts and extend our reach significantly. My goal is to uncover factors that lead to high performance healthcare teams. These factors include empowerment, personality, and the relationship between a leader and their followers.

I invite you to take the Myers-Briggs Type Indicator (MBTI), a personality assessment tool. The link below will take you to the informed consent page where you will learn more about the study. You will then be asked to provide the names and emails of 10 team members, or followers, with whom you work. Once those steps have been completed, you will receive a link to the MBTI assessment portal. After you complete your MBTI assessment, your followers will be asked to complete a brief survey about their team interactions and your leadership style. Completing the survey and assessment will take you approximately 30 minutes and will provide valuable information. At the conclusion of the assessment, you will be eligible to receive your type results by completing an online education session about the use of the MBTI in leadership.

Both your responses and the responses of your followers will be held confidential and the information will be deidentified once your responses are paired to those of your followers. Should you have questions about the procedures, please do not hesitate to reach out to me directly. Thank you in advance for your participation in this study.

Sincerely,

Tony

<insert link to SurveyMonkey for physician-leaders>

<insert signature stamp>

Appendix G: Follow-Up Letter to Physician-Leaders

Dr. _____

  Thank you for agreeing to participate in this study. Below is the link to the Myers-Briggs Company's Elevate portal. Once there, follow the instructions to complete your Myers-Briggs Type Indicator (MBTI) assessment.

  If you chose to receive your type results through the online education, at the conclusion of the assessment, you will be asked to complete the tutorial. The tutorial runs for approximately 30 minutes and does not need to be completed in one session.

  If you chose to not receive your results, I thank you for your participation. Please know that you can change your mind about participation and about the receipt of your results at any time by contacting me directly.

Thanks again,

Tony

<Insert appropriate Elevate link here>

<Insert signature stamp here>

Appendix H: Follower Request to Participate

Hello –

My name is Tony S. Reed, MD. Your name and contact information was provided to me by Dr. _____. I am asking for your help as I complete my dissertation study to earn my PhD in Management with a concentration in Organizational Leadership from Walden University.

Physicians greatly influence the safety and quality of care delivered to patients. But they don't work alone. Team members like you provide extraordinary support to their efforts and extend their reach significantly. My goal is to uncover factors that lead to high performance healthcare teams. These factors include empowerment, personality, and the relationship between a leader and their followers.

I invite you to take a 15-minute survey about your thoughts on the physician-leader identified above. Your responses will be held confidential and not returned to the physician at any time. The link below takes you to the informed consent page where you will learn more about the study. Your effort in completing the survey will provide valuable information to help grow physicians as participants of interprofessional clinical teams.

Your responses will be deidentified once they are paired to the responses of the physician who recommended you for participation. Should you have questions about the procedures or if you wish to complete the assessment live rather than online, please do not hesitate to reach out to me directly. Thank you in advance for your participation in this study.

Sincerely,

Tony

<insert link to survey for followers>

<insert signature stamp>