# Leadership Attributes of Physician Assistant Program Directors

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## Dedication

To my daughters, Lauren and Devon, who might be proud that their daddy has now finished, but that does not nearly compare to how proud I am of them. Thank you, Lauren and Devon. I love you both more than I can ever express in writing.

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**Abstract of the Dissertation**

Leadership Attributes
of Physician Assistant Program Directors

Physician assistant (PA) program directors perform an essential role in the initiation, continuation, and development of PA education programs in the rapidly changing environments of both health care and higher education. However, only limited research exists on this academic leader, discussing their managerial roles (Muma, Smith, & Somers, 2006) and turnover and burnout (Forister & Blessing, 2007). This study examined the leadership roles of PA program directors in the context of full-range leadership theory (Avolio & Bass, 2004), describing transformational, transactional, and passive/avoidant attributes of the program director from the perspectives of leader and follower. This study also examined leadership outcomes.

Data were collected via an electronic survey administered to PA program directors and other members in the same academic unit. The survey, the Multifactor Leadership Questionnaire (MLQ), was developed by the authors of the theory and is considered a valid and reliable instrument to measure the leadership attributes associated with full-range leadership. The electronic version of the MLQ was deployed to 82 academic units. The response rates for completed MLQ surveys were 43.2% (54) for program directors and 24.6% (228) for others associated with the PA academic unit.

The results of this study indicated that program directors use transformational leadership factors frequently in the execution of their responsibilities, and those program directors perceive favorable outcomes with these behaviors. However, discrepancies existed between leader perceptions and the perceptions of individuals in the same academic unit in regards to leadership and outcomes, with program directors having more

favorable perceptions. The results found for the survey align with results for other allied health professionals (e.g., Aaron, 2005; Firestone, 2010; Weissman, 2008; Zuest, 2003) and for a U.S. normative sample (Avolio & Bass, 2004). This research provides a foundation for future study of the PA program director and contributes towards professional development efforts and the measurement of associated outcomes.

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# CHAPTER 1:

# INTRODUCTION

Within higher education, much is expected from individuals who accept leadership roles, particularly those who lead academic departments. It has been repeatedly stated that up to 80% of all university decisions are made at the department level (Carroll & Wolverton, 2004; Roach, 1976; Woodburne, 1958). Unfortunately, the leader of the academic department is also one of the "least studied and most misunderstood management positions in America" (Gmelch, 2004, p. 69). Career pathways to these positions are inexact, and the individual who assumes a leadership position in an academic department encounters many complexities (Plater, 2006; Strathe & Wilson, 2006). One reason for the complexity is the many facets associated with a leadership role. In a large study where individuals in the department chairperson position self-reported their perceptions about the role, chairs identified their functions to include that of leader, manager, faculty developer, and scholar (Carroll & Wolverton, 2004). Each function provides its own set of challenges.

How program directors of physician assistant (PA) education programs, in public and private institutions, address the leader role in their unique cohort is an area that has yet to be studied. The purpose of this study was to determine the extent PA program directors exhibit leadership constructs in the context of full-range leadership theory (FRLT) as described by Avolio and Bass (2004).

This chapter provides the context for the problem, with a review of PA education, PA program directors, and the research that is available on this group of academic leaders. The theoretical framework that supports this study is presented, followed by the

rationale for the study, the research questions, the study's significance, assumptions, and a subjectivity statement. The chapter then provides a summary of the methodology, discusses the study's delimitations and limitations, and defines terms used in the study. The chapter concludes with a summary and overview of the dissertation.

## Context of the Problem

PA education programs play a unique role in training students, who upon graduation and successful completion of a national certifying exam provide many of the health care services frequently associated with physicians. Physician assistants are nonphysician clinicians, who with the supervision of a physician provide health care services in communities throughout the United States (American Academy of Physician Assistants [AAPA], 2013b). As leading health care organizations project an increased need for health care services in the future (Institute of Medicine, 2008), PAs are often discussed as one solution to meet this increasing demand (Nabors, 2009). They have been uniquely recognized as one solution in the Patient Protection and Affordable Care Act signed into law by President Barack Obama in March 2010 (AAPA, 2013a).

The future career outlook for PAs is positive. The Bureau of Labor Statistics (2012) projected a 30% increase in employment opportunities for PAs through the year 2020. In order to meet this anticipated demand, some existing programs have increased their student capacity or opened secondary distance campus program sites, but increasingly new programs are being developed by institutions to meet this projected need. The Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA), the sole accrediting organization for PA education programs, has projected a workload for itself that includes "an additional 74 new programs for

provisional accreditation consideration through July 1, 2017" (ARC-PA, 2013a). This infusion of new programs will stretch existing resources of available leadership within the profession to fill these new program director opportunities. Leadership training programs to develop and cultivate future program directors have been sporadic (Glicken, 2008).

**Physician Assistant Education**

The history of PAs and PA education has been well documented (Ballweg, Sullivan, Brown, & Vetrosky, 2008; Berg, 1966; Holt, 1998; Hooker & Cawley, 2003; Piemme, Sadler, Carter, & Ballweg, 2013). The first program was founded at Duke University with four students in 1965. PA program growth was measured and tentative during the profession's early years, with only three additional programs developed during the first 4 years (1965–1968). With the passage by Congress of the Comprehensive Health Manpower Act in 1971, federal training grant support provided the stimulus for the rapid development of PA programs. Between 1969 and 1976, 44 new programs were established; then over the next 12 years, from 1977 through 1988, only four additional programs were established. The growth of new PA programs then remained relatively flat through the early 1990s (Figure 1.1).

The next period of expansion began in 1995. Unlike the first expansion of PA programs that was supported through federal funding, this wave of development was largely privately funded. At that time, PAs were experiencing increased recognition as a result of the health care reform discussions initiated under the Clinton administration. Health care reform forwarded the concept of nonphysician clinicians providing primary care services. Higher education embraced these education programs as potential revenue

centers for their institutions, fueling program growth. By October 2013, accredited entry-level PA educational programs had increased in number to 181 programs (ARC-PA, 2013c). The *Twenty-Seventh Annual Report on Physician Assistant Educational Programs in the United States, 2010-2011* (Physician Assistant Education Association [PAEA], 2013a) reported a first-year class enrollment "of 6,422 new students" (p. 28), with programs graduating "approximately 5,889" (p. 33) in 2011, although that number is considered low due to incomplete survey responses from existing programs.

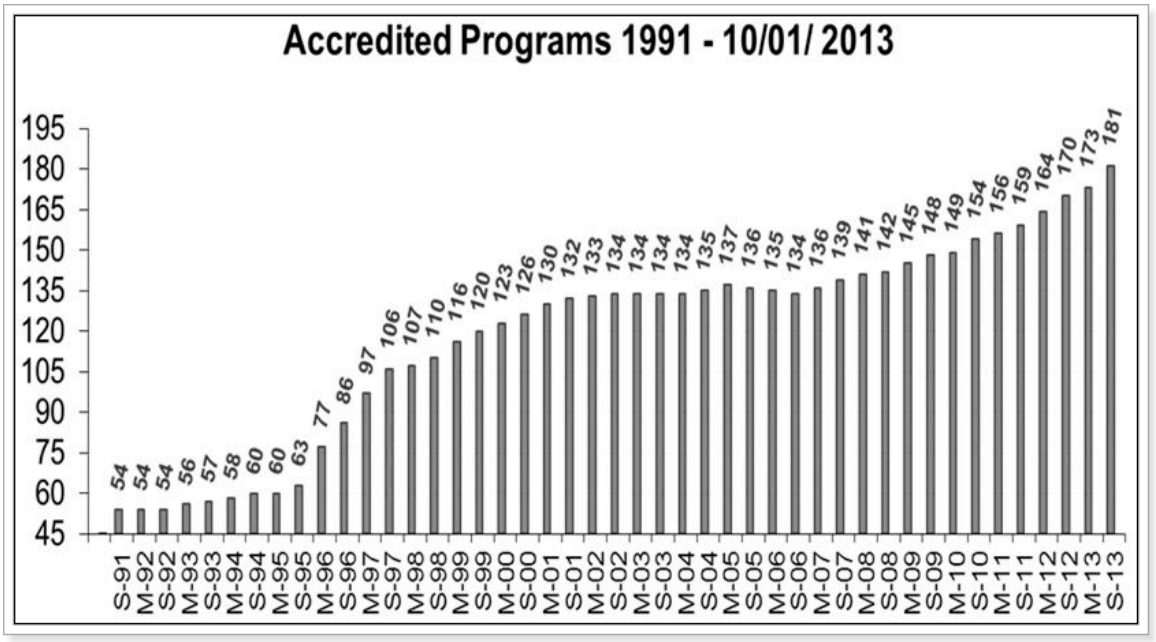


*Figure 1.1.* The growth of accredited physician assistant programs between 1991 and 2013 (ARC-PA, 2013b). Reprinted with permission from ARC-PA (Appendix F).

PA programs have their own unique challenges that program directors are required to address. Far from an inclusive list, these challenges include compliance with accreditation standards (ARC-PA, 2010) and working in an environment where faculty turnover and burnout are high (Forister & Blessing, 2007). Forister and Blessing (2007) surveyed 969 PA educators using the Maslach Burnout Inventory and found that 22%

were emotionally exhausted, 13% lacked personal satisfaction in their work, and 6% depersonalized their students. Programmatic issues alone provide adequate challenges for any program director. Couple these external requirements with the expectations of the environment of higher education, and it is quickly realized that more than managerial skills are needed to be an effective leader. In these complex, rapidly changing environments, transformational leadership styles are required (Kirkbride, 2006).

**Physician Assistant Program Directors**

PA educational programs are sponsored by a variety of higher education institutions, including community colleges, colleges, and universities. Considering this diversity, PA academic units are located in an assortment of departments, colleges, and schools depending on the complexity of the individual institution. As a result of this diversity, some institutions designate a department chairperson who participates in other responsibilities above and beyond duties associated with a department. In these instances, a program director, separate from the department chairperson, may also be identified. The term *program director* identifies the primary designate who provides "effective leadership and management" (ARC-PA, 2010, p. 7) for this academic unit. This study focused on the leadership attributes of those in the program director position.

Despite the vital role program directors play in the education of PA students, little is known about them beyond the cursory information collected from PA-specific organizations. The PAEA, the professional association for PA educational programs, provides salary data about program directors in its annual report (PAEA, 2010a), but little else. The ARC-PA, the accreditation agency for PA programs, provides a standard for minimum requirements and responsibilities for the program director (ARC-PA, 2010).

Finally, although doctoral-related research on PAs is plentiful, much of the research focuses on the training, utilization, professional identity, and clinical practice skills of either PA students or practicing clinicians. Only two studies have focused directly on the position of the PA program director in the context of leadership. Muma, Smith, and Somers (2006) reviewed program director duties in the context of Mintzberg's model of managerial roles. A second study by Lohenry (2010) evaluated the career pathways of program directors prior to their first leadership appointment to determine whether any particular career course prior to the initial appointment was more optimal in the transition to this leadership role. The results of these two studies are examined later in this chapter.

**The Program Director by the Numbers**

As the numbers of PA education programs have increased, so has the number of program directors. Institutions that sponsor PA education programs now total 181 (ARC-PA, 2013c). Accreditation standards require that "the program director must be a PA or a physician" (ARC-PA, 2010, p. 7). Additionally, program directors who are physician assistants *must* hold current certification from the National Commission on Certification of Physician Assistants (NCCPA) or *must* hold current licensure in the state where the program is located (ARC-PA, 2010). Accreditation standards describe a *must* designation as a mandatory requirement for an academic program to meet. The accreditation manual provided by the accrediting agency describes the use of the word *must* as "an absolute requirement" (ARC-PA, 2010, p. 26).

Other demographic data about this cohort are limited. Recent annual reports provided by the PAEA simply list salary aggregates for the program director. In the most recent annual report, the mean salary for the program director ($n$ = 58) was $113,122

(Scott, 2011). The last annual report that provided any additional information about the role was the *Twenty-Third Annual Report on Physician Assistant Educational Programs in the United States, 2006-2007*. In general, this report reflected survey data gleaned from program directors, and although the survey was a requirement for participation in the education association, not all programs actually completed the survey for this report. At the time the report was released, 134 education programs were accredited, and 109 programs had responded, for a response rate of 81.3%. The report indicated that 94% of program directors were physician assistants. Of this group, 94% remained current with their NCCPA credentials and 43% maintained an active clinical practice, averaging 7.4 hours per week providing patient care. In terms of the highest level of education held by a program director, 32 directors held an earned doctorate, including Ph.D., Ed.D., D.H.Sc., and M.D. degrees; 45 had master's degrees; and one program director held a baccalaureate degree (PAEA, 2007). The mean salary for program directors in this survey was $101,246, with male program directors reporting a higher average salary of $105,922 compared to $95,234 for female program directors (PAEA, 2007).

Finally, the *Twenty-Third Annual Report* described the mean length of service for male program directors as 83 months compared to 87 months for female program directors. Once an opening in this position category occurred, program director vacancies took 13.9 weeks to fill (PAEA, 2007, p. 34). Program director turnover is an issue that has periodically been raised at professional meetings. At the 2008 PAEA Annual Education Forum in Savannah, Georgia, the ARC-PA provided some insight into the program director turnover rate during an open session. Based on 5-year increments beginning in 1990, the turnover for individuals in the program director position has

continually been in double digits: 14% from 1990 to 1994, 16% from 1995 to 1999, 19% from 2000 to 2004, and 18% from 2005 to 2008 (ARC-PA, 2008). Most recently, the ARC-PA distributed a document called *Notes to Programs* (ARC-PA, 2013a) to existing program directors and acknowledged 17 new program directors and 10 new interim program directors during the previous 6 months.

**The Role and Responsibilities of the Program Director**

Although institutions that offer PA educational programs have additional expectations and responsibilities of their program directors, the ARC-PA (2010) developed "minimum requirements to which an accredited program is held accountable" (p. 1). These requirements, known as the *Standards*, are an evolving, dynamic set of requirements that were initially adopted in 1971 and have since been formally revised six times with several updates for clarifications. The current *Standards* outline the responsibilities of the program director as follows:

1) The program director must be a PA or a physician. If the program director is a PA, s/he must hold current NCCPA certification or current PA licensure by the state in which the program exists.
2) The program director must provide effective leadership and management.
3) The program director must be knowledgeable about and responsible for program: (a) organization, (b) administration, (c) fiscal management, (d) continuous review and analysis, (e) planning, (f) development and (g) participation in the accreditation process.
4) The program director must supervise the medical director, principal and instructional faculty, and staff in all activities that directly relate to the PA program. (ARC-PA, 2010, p. 7)

Also, in conjunction with the core faculty, the program director must actively participate in the following processes:

1) developing, reviewing and revising as necessary the mission statement for the program,
2) selecting applicants for admission to the PA program,

3) providing student instruction,
4) evaluating student performance,
5) academic counseling of students,
6) assuring the availability of remedial instruction,
7) designing, implementing, coordinating, evaluating curriculum, and
8) evaluating the program. (ARC-PA, 2010, p. 7)

The information provided by the ARC-PA in the *Standards* provides some insight into the complexity of the role of the program director but little else regarding specifics. In some instances, annotations are provided for individual standards to provide operational clarity for the program (ARC-PA, 2010). The *Accreditation Manual* (ARC-PA, 2012b), however, does offer suggestions as to how a program might meet a standard.

**Research on the Physician Assistant Program Director**

Little is known about the PA program director. A search of the ProQuest database, Dissertations & Theses Online, using the words "physician assistant" identified more than 200 documents that have examined some aspect of the PA phenomenon. Most of the documents focus on the training, utilization, professional identity, clinical practice skills, and competencies of PAs.

A closer evaluation of these available documents identified a handful of studies that address how PA program directors respond to aspects external to their role. For example, Dryer (2006) utilized a web-based survey to measure PA program directors' perceptions of the acceptance of cross-disciplinary competency recommendations by the Institute of Medicine. Shipman (2004) surveyed 133 PA program directors about the processes PA programs had in place to evaluate student learning outcomes. Bowlin (1998) surveyed program directors about the strategies their programs utilized to retain minority students through graduation. In these and other studies, program directors were

identified and included as the point of primary contact in evaluating how different aspects of their institutions' programs addressed unique challenges facing PA programs today. Only two studies, those of Muma et al. (2006) and Lohenry (2010), have evaluated the role of PA program directors.

Muma et al. (2006) utilized quantitative and qualitative methods to measure the administrative activities of PA program directors and compared these activities to Mintzberg's model of managerial roles. This model has three categories: interpersonal, managerial roles involved with providing information; informational, managerial roles involved with processing information; and decisional, managerial roles associated with utilizing and incorporating the information. At the time this study was conducted, 127 programs were accredited, and the author received responses from 77 program directors, for a 61% response rate.

In reporting the demographic information on the program directors, Muma et al. described this sample as a relatively homogenous group. The mean reported age was 47.9 years, with 7.9 years of experience as a program director. Only 21% of respondents, about 16 program directors, had any prior administrative experience in higher education. Others had faculty experience (26.3%) but not in PA education. More than half of the program directors were men (53%). Their ethnicity was identified as White (88.3%), African American (6.5%), and Hispanic/Latino (2.6%), with Asian Americans and others rounding out the remainder of the sample. The authors noted that at a time when PA programs were undergoing additional growth, many directors did not see themselves serving in their current capacity for more than 5 years. Specifically, of the respondents,

"more than 30 percent indicated that within the next five years they will either retire or move to a higher position in the same or different institution" (Muma, 2004, p. 44).

Using Mintzberg's model, Muma et al. (2006) identified the 10 distinct managerial roles within the previously described categories that PA program directors utilized. The interpersonal category included the roles of figurehead, leader, and liaison; the informational category, monitor, disseminator, and spokesperson; and the decisional category, entrepreneur, negotiator, resource allocator, and disturbance handler. Program directors perceived using interpersonal roles more than decisional roles or informational roles, yet actual use of interpersonal roles was 39.2%, compared to 34.2% for decisional roles and 23.9% for informational roles. Faculty perceived the managerial roles of program directors slightly differently, perceiving decisional roles to be used more frequently than interpersonal or informational roles (37.9% compared with 36.3% and 25.8%, respectively) (Muma et al., 2006). However, in looking past the aggregate categories, both groups perceived the leader role as the role used most often: program directors actually used this role 12.3% of the time, and faculty perceiving its use 9.5% of the time. Muma et al. stated that this perception of the leader role by program directors was important and consistent with Mintzberg's description of the role—although Mintzberg provided only a general description of the leader role as providing one with the ability to "weld diverse elements into a cooperative enterprise" (Muma et al., 2006, p. 65).

In the second study focusing on PA program directors, Lohenry (2010) used quantitative methods to evaluate career pathways leading to a program director's initial appointment. Program directors were surveyed using a researcher-designed instrument

that gathered data in three distinct sections: PA program director demographics, PA program demographics, and preparedness for the PA program director role. Using the data from this last section of questions, the researcher created a "comfort score" (p. 74) to correlate preparedness with role assimilation. At the time this study was conducted, 145 programs were accredited. One program was excluded, as that program director was the researcher of the study. A total of 82 program directors responded to the survey for a response rate of 57%.

In the analysis of the personal demographic data for the study, the PA program director cohort was predominantly male (57%) and White (93.5%). Two thirds were currently at least 50 years old (ages: 30-39, 6.5%; 40-49, 27.2%; 50-59, 36.3%; 60-69, 30%), and most (43.6%) had assumed their initial program director appointment in their 30s, with 29.5% beginning in their 40s and 26.9% in their 50s. Sixty-two PA program directors (78.5%) held their professional credential, PA-C, as their terminal degree at the time of assuming their role. It was not defined whether their professional credential was associated with a certificate, associate's degree, bachelor's degree, or master's degree, but most respondents (68.4%) indicated that they held a master's degree.

No singular career path emerged in this study as optimal training for this cohort before their assumption of the program director role. In reviewing data correlations, only the respondents' age at the time of their appointment seemed to correlate with an easier transition into the program director role.

These two studies (Muma et al., 2006; Lohenry, 2010) provide some insight into the role and pathways taken by those in the PA program director position. As these academic leaders are the primary individuals responsible for leading these unique

academic units, a broader examination of the role is reasonable. This study examined the distinct attributes associated with the leadership role.

## Theoretical Framework of the Study

The theoretical framework for this study is FRLT (Avolio & Bass, 1991), an extension of earlier research on transformational leadership (Bass, 1985). Contributions to this model initially began with Burns (1978), who provided early insight into leadership theory by contrasting transformational leadership with transactional leadership. Burns viewed the transformational leader as one who "elevates the follower's maturity, ideals, and concerns for the well-being of others" (Bass & Bass, 2008, p. 619). Bass (1985) further developed the relationship between transformational and transactional leadership and empirically demonstrated that the two styles of leadership were positively correlated. In formulating a multidimensional theory of transformational and transactional leadership, Bass was able to provide distinctions about leadership that had not previously existed.

FRLT (Avolio & Bass, 1991) expands on the earlier model of transformational leadership (Bass, 1985) by providing a continuum of leadership factors that range from transformational leadership at one end to passive/avoidant at the other end. In moving across this continuum, transformational leadership is presented as being more active/participatory than transactional leadership, and transactional leadership is presented as being more active/participatory than passive/avoidant leadership. Leaders who exhibit transformational factors are able to "do more with colleagues and followers than set up simple exchanges or agreements" (Bass & Avolio, 1994, p. 3); they exhibit attitudes and behaviors that allow them to achieve exceptional results. These factors

include motivation to challenge the follower and influence over followers, as they are perceived to demonstrate high standards of conduct. Transformational leaders also encourage followers to approach "old situations in new ways" (Bass, 1998, p. 5) in an environment of personalized consideration for the follower. Bass (2008) stated, "Transformational leaders motivate their followers to do more than the followers originally intended and thought possible. The leader sets challenging expectations and achieves higher standards of performance" (p. 618).

Transactional leadership lacks the transformational aspects previously described and focuses more on traditional rewards (e.g., annual salary, hourly wage) in exchange for work completed by the follower. Transactional leaders are also less proactive than their transformational counterparts by monitoring followers' activities for "deviances, mistakes, and errors" (Bass, 1998, p. 7) instead of motivating followers to approach their work in challenging ways. Finally, leaders who exhibit passive/avoidant factors are the least effective in a leadership capacity. These leaders, or nonleaders, take a laissez-faire approach to their responsibilities where "necessary decisions are not made" and "actions are delayed" (Bass, 1998, p. 7).

The FRLT is best suited for this research for several reasons. First, it is a theory that provides an integrative approach towards the understanding of leadership. Second, it has "achieved unprecedented acceptance" (Antonakis & House, 2002, p. 4) in both management and leadership literature. Third, it is "supported by a large number of empirical findings" (p. 4). Bass (1997) stated that the FRLT is universal and noted additionally that although situational variables play a role in the type of leadership that emerges in any particular situation, the constructs of FRLT remain stable regardless of

the situational variables (Bass, 1998). The FRLT is measured using the Multifactor Leadership Questionnaire (MLQ), which is considered "the best validated instrument to represent the FRLT" (Antonakis & House, 2002, p. 18). The FRLT is described in detail in chapter 2.

## Rationale and Purpose of the Study

Most program directors in an academic department in higher education have had no prior experience in their newfound role (Tucker, 1993). Other than the previously discussed studies (Lohenry, 2010; Muma et al., 2006), no other studies exist that explore the attributes or effectiveness of this academic leader. A number of factors are coming together to support the need for this study. First, there is a growing demand for primary health care services as the U.S. population continues to age, with PAs identified as one solution to meet this need. Second, the recent and projected increase in new and developing PA educational programs extends the need for effective leaders beyond existing supply. Third, turnover and burnout in this cohort of academic leaders have been identified as problematic (Forister & Blessing, 2007; Muma et al., 2006), and a better understanding about the leadership attributes of PA program directors may assist in the professional development and training of these individuals.

As the current body of research on this cohort of leaders is extremely limited, this study provided foundational insight into the program director position. Its purpose was to determine to what extent PA program directors exhibit leadership attributes as described in the FRLT (Avolio & Bass, 2004). This study described the perceptions of these leadership attributes from two perspectives: that of the program director through self-report and that of others closely associated with the program director (i.e., faculty, staff,

and direct supervisors). This research also sought to compare the different perceptions between these two groups.

## Research Questions

This study utilized quantitative methods to describe the leadership attributes of the program director responsible for the PA education program. The study had one overarching question with four subquestions:

RQ: How do faculty, administrative staff, the program director, and the program director's direct supervisor perceive the PA program director's full-range leadership attributes as described by Avolio and Bass (2004) in public and private institutions that confer a master's-level graduate degree?

1. What are the leadership behaviors of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors?
2. What are the differences in perceptions of leadership behaviors between PA program directors and their faculty, staff, and direct supervisors?
3. What are the leadership outcomes of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors?
4. What are the differences in leadership outcomes of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors?

## Significance of the Study

A study on the leadership styles of PA program directors is important for several reasons. PA program directors provide leadership within their institution as well as within

their program, which trains future health care providers. At the institutional level, their role is many-faceted, with responsibilities defined by the accreditation agency, ARC-PA. The program director must be knowledgeable about institutional as well as external accreditation requirements, being responsible for a program's (a) organization, (b) administration, (c) fiscal management, (d) review and analysis, (e) planning, (f) development, and (g) personnel supervision (ARC-PA, 2010, p. 7). At the professional level, program directors, as a cohort, must continually analyze trends and adjust the course of the academic movement to meet future needs. Considering these institutional and professional responsibilities, little information exists on PA program directors.

This study provided information in several areas. This study identified the leadership attributes of PA program directors from the perspectives of the program director and others associated with the academic department. The study explored relationships between leadership attributes and leadership outcomes as described by Bass and Avolio (1995). This study provided information that may help administrators in the recruitment and retention of PA program directors, but more importantly may serve as a basis for leadership training and professional development.

## Assumptions

This study was based on three assumptions:

1. The MLQ accurately and consistently measures each attribute within FRLT.
2. Program directors would accurately describe their perceived leadership behaviors in response to the questions on the MLQ Leader Form.
3. Individuals who rated the program director with the MLQ Rater Form would provide accurate perceptions of the leader's behavior.

## Statement of Subjectivity

This researcher has been a certified PA for over 15 years. Initially in clinical practice and currently in education, this researcher has served as an assistant professor in a PA education training program for 7 years and currently serves as an academic coordinator for a developing PA program in Australia. As faculty, the researcher taught in a graduate program that conferred a graduate degree, like programs studied in this research. During this time as faculty, the researcher observed an increase in new programs across the country, the rapidity of new program director and faculty hires, as well as turnover among program directors, as evidenced through the online career postings through the PAEA website. Although this list is not all-inclusive, the researcher's perspective on the topic was influenced by these observations.

To mitigate the influence of these past experiences, the researcher initially returned to clinical practice before conducting this study. The researcher utilized a third-party provider to deploy the MLQ survey instrument. This third-party provider suppressed all identifying information regarding the identities of individuals who were invited to participate in this survey research in an effort to minimize perceptions of bias from survey participants.

## Summary of the Methodology

This quantitative study described leadership attributes of PA program directors as perceived by the program directors and others associated with the academic unit and compared the responses of the program directors and others. Similarly, leadership outcomes in PA program directors were described, as well as the different perceptions between program directors and others. Data were collected using the 45-question MLQ

instrument, which measures the nine factors associated with FRLT as well as three leadership outcomes. The validity and reliability of the MLQ survey have been previously established.

The population for this quantitative study was PA educators and staff employed by institutions that confer a master's degree in PA studies. Master's degree programs were chosen because the "PAEA endorses the master's degree as the entry-level and terminal degree of the profession" (PAEA, 2010b). A list of institutions that met these inclusion requirements was culled from the PAEA database at the time this study was approved in July 2011 (Appendix A).

Program directors from each eligible institution were contacted by email and invited to participate in this research study. Program directors were informed that with their acceptance to participate in the study, other members of their academic unit would also be invited to participate in the study. These other members included the direct supervisor, faculty, and staff associated with the academic unit. The MLQ was deployed by a third-party provider to email addresses provided from the PAEA database. Personal data for all participants were suppressed by the third-party provider prior to its release to the researcher. The data was sight inspected for missing responses, and only completed MLQs were used in the data analysis. Data were analyzed using the Statistical Programs for the Social Sciences (SPSS), version 20.

## Delimitations and Limitations of the Study

Delimitations "narrow the scope of a study" (Creswell, 2003, p. 148). The delimitation for this study was the focus on PA program directors, as little research exists on this cohort. Limitations identify "potential weaknesses of the study" (Creswell, 2003,

p. 148), which weaken the ability to generalize the results of the study. Several limitations for this study exist. First, the cohort was limited to PA program directors from programs accredited and considered in good standing by the ARC-PA. Program directors from programs with provisional or probationary accreditation status were not included.

Second, the PAEA database, which provided the contacts for the recruitment of subjects, is dynamic. This database does not identify whether a program director is new to the role, acting in an interim capacity, or is long established in this leadership role. Consequently, only limited demographic data were collected for this study, and only aggregate data were reported; this factor is a limitation.

Third, programs that did not confer a minimum of a graduate degree were not included in the study. In 2007, AAPA adopted a policy "that PA education is conducted at the graduate level and supports awarding the master's degree for new PA graduates" (AAPA, n.d., p. 2). The AAPA (2009a) reiterated this position and went further by not only endorsing the master's degree as the entry-level degree to practice but also stating that it should be the terminal degree for the profession.

Finally, the primary survey instrument that was used for this study, the MLQ, has been used primarily in industry and military settings (Avolio & Bass, 2004). Although it has become accepted and increasingly used in a variety of different environments, it is still rarely utilized in higher education.

## Definition of Terms

*Accreditation Review Commission on Education for the Physician Assistant, Inc (ARC-PA)* refers to the recognized accrediting agency that protects the interests of the public, including current and prospective PA students, and the PA profession by defining

the standards for PA education and evaluating PA educational programs within the territorial United States to ensure their compliance with those standards.

*American Academy of Physician Assistants (AAPA)* refers to the only national organization representing PAs in all medical specialties.

*Department chairperson* refers to the chief administrator of a programmatic unit (i.e., a department or division) representing one or more disciplines. In many cases in PA education, the department houses only one discipline.

*Direct supervisor* refers to the individual who directly supervises the program director of the PA program. Depending on an institution's organizational structure, this individual may be a department chair, dean, or vice president.

*Full-range leadership theory (FRLT),* within the context of this study, refers to a model developed by Avolio and Bass (1991) that denotes three distinct categories of leadership behavior: transformational, transactional, and passive/avoidant. Earlier literature also broadly described this theory as simply *transformational leadership*.

*Leader Form* refers to the type of MLQ survey that measures the leadership attributes of the designated group leader as perceived and completed by the group leader. It is also referred to as the *self-rater* form.

*Leadership outcomes* refers to the three items measured by the MLQ to assess the leader's performance as perceived by others (faculty, peers, and supervisors):

1. *Extra effort* describes the extent to which followers exert effort beyond the ordinary as a consequence of leadership (Bass & Avolio, 1997).
2. *Effectiveness* describes the leader's ability to meet the job-related needs of the followers and their contribution to the work unit (Bass, Avolio, & Atwater, 1996).

3. *Satisfaction* refers to the degree that others are pleased with the leader's styles and methods (Bass & Avolio, 1997).

*Multifactor Leadership Questionnaire (MLQ)* is a survey that is considered the best validated and most popular instrument for measuring transformational leadership (Antonakis & House, 2002). This survey has evolved through several earlier versions to the current Form 5X-Short used in this research. This version of the MLQ consists of two distinct types of survey, the *Leader Form* and the *Rater Form*.

*Passive/avoidant leadership,* a component of FRLT, refers to a style of nonleadership or the avoidance of leadership. Individuals exhibiting this leadership style procrastinate, refuse to make decisions, avoid conflicts, and do not involve themselves in the development of their followers (Bass & Avolio, 1993a; Bass et al., 1996). This category includes the factors of (a) management by exception (passive) and (b) laissez-faire. This component has previously been broadly described in the literature as *laissez-faire leadership*.

*Physician assistant (PA)* refers to health care professionals licensed or credentialed to practice medicine with physician supervision. Their responsibilities include conducting physical exams, diagnosing and treating illnesses, ordering and interpreting tests, counseling patients on preventive health care, assisting in surgery, and writing prescriptions. Within the physician-PA relationship, PAs exercise autonomy in medical decision making and provide a broad range of diagnostic and therapeutic services. A PA's practice may also include education, research, and administrative services (AAPA, n.d.).

*Physician Assistant Education Association (PAEA)* refers to the only national organization representing PA educational programs in the United States. PAEA provides services for faculty at its member programs, as well as to applicants, students, and other stakeholders. Prior to January 2006, this organization was known as the *Association for Physician Assistant Programs*.

*Physician assistant program* refers to an educational program that provides didactic and clinical educational components that lead to a certificate or degree necessary to take a board certification examination.

*Program director* refers to the chief administrator responsible for the leadership of the academic unit providing the educational program in PA studies. Depending on the institution, the unit may be housed in a department or be a standalone program.

*Probationary accreditation* is a temporary status of accreditation assigned when a program does not meet the Standards and when the capability of the program to provide an acceptable educational experience for its students is threatened (ARC-PA, 2011b).

*Provisional accreditation* refers to the initial status "granted for a limited, defined period of time to a new PA program that, at the time of the site visit, has demonstrated its preparedness to initiate a program in accordance with the Standards" (ARC-PA, 2011b).

*Rater Form* refers to the type of MLQ survey that measures the leadership attributes of the designated group leader as perceived and completed by other members within the group associated with a particular leader. These individuals may be a level above, at the same level, or a level below the group leader. The form is also referred to as the *Other-rater* form.

*Standards of Accreditation* "constitute the requirements to which an accredited program is held accountable and provide the basis on which the ARC-PA will confer or deny program accreditation" (ARC-PA, 2010, p. 1). These are commonly referred to simply as the "Standards."

*Transactional leadership,* a component of FRLT, refers to a style of leadership in which the leader promises and/or provides suitable rewards and recognition if followers achieve the objectives or execute the tasks as required (Bass, 1985). This category includes the factors of (a) contingent reward and (b) management by exception (active).

*Transformational leadership,* a component of FRLT, refers to a style of leadership that influences followers by getting them to transcend their self-interests for the good of the group, organization, or society, while also enhancing followers' expectations and abilities and their willingness to take risks (Bass & Avolio, 1994; Burns, 1978). This category includes the factors of (a) idealized influence (attributed); (b) idealized influence (behavior); (c) inspirational motivation; (d) intellectual stimulation; and (e) individualized consideration.

*Transformational leadership theory* is the precursor to FRLT developed by Bass (1985).

## Chapter Summary

PA program directors provide the core leadership for PA education programs. They provide the impulse to develop new programs and maintain and improve existing programs. PA education programs are undergoing a period of growth that will require new leadership, either through recruiting from existing faculty ranks or transitioning clinicians into the higher education environment. This chapter has provided background

on the PA program director with data gleaned from annual reports of the PAEA (2007, 2010a, 2013a), notes from the ARC-PA (2013a), and limited published (Forister & Blessing, 2007; Muma et al., 2006) and unpublished (Lohenry, 2010) research. This background has presented a generalized picture of an environment where change is occurring rapidly and where turnover and burnout in leadership and faculty ranks is a concern. Yet little is known about the PA program director who leads this academic unit.

This chapter has also provided an introduction into FRLT (Avolio & Bass, 2004). This theory posits that the use of transformational leadership factors creates "a fundamental shift in orientation" (Avolio & Bass, 2004, p. 20) for employees with positive long-term and short-term implications for the organization. With little information available on the PA program director, this study examined the leadership attributes of this cohort of academic leaders from the perspectives of both the PA program directors and other individuals associated with their academic unit, including direct supervisors, faculty, and staff. The research questions addressed leadership perceptions and leadership outcomes measured by the MLQ, as perceived by, and contrasted between, the program directors themselves and others in their academic unit. Information obtained through the course of this study may contribute towards leadership training and professional development of the PA program director.

# CHAPTER 2:

# REVIEW OF LITERATURE

The purpose of this study was to assess the self-perceptions of leadership attributes in physician assistant (PA) program directors, as well as the perceptions of direct supervisors, faculty, and support staff in the context of full-range leadership theory (FRLT) as defined by Bass and Avolio (1997). The following review of literature examines leadership in higher education from several perspectives. This chapter begins by reviewing the characteristics and role of the department chair in higher education. It then presents a summary of the different historical approaches to leadership to provide context for the underlying theory of FRLT. The third section reviews the history and development of the FRLT, its current application in practice, and the implications for use. The chapter closes by discussing studies conducted on other related health professions as they relate to FRLT.

## The Program Director

PA program directors serve as the primary leader for PA education programs, and the program director accepts the primary leadership role in this academic unit. Hancock (2007) wrote that all aspects of the university "intersect at the office of the department chair" (p. 306). Whether the institutional interest relates to the mission of the university, the vision of higher administrators, or the desires of faculty members, the role of the program director remains central.

An initial review of the characteristics of the individual who accepts the role may be as important as the role itself. Four characteristics are shared by academic program directors:

1. They are drawn from the faculty ranks.
2. They lack the preparation necessary for what is a major change in their professional role.
3. They enjoy, at best, limited financial rewards.
4. They have a relatively short tenure (Hecht, Higgerson, Gmelch, & Tucker, 1999, pp. 6-8).

Traditionally, the program director is a "mid-career faculty" member who is "often motivated by a sense of duty or a desire to help a department grow and improve" (Carroll & Wolverton, 2004, p. 8). Although PA program directors may have been accomplished as clinicians providing health care services or as educators training students, their administrative skills may not have had an opportunity to develop. Although not specific to PA education, surveys administered to a group of program chairs attending a national workshop for chairs sponsored by the American Council on Education "found that more than two-thirds of chairs had no prior administrative experience" (Hecht et al., 1999, p. 7). New department chairs are often overwhelmed by the number of tasks associated with the position, and this inexperience can be "a source of frustration for both chairs and deans" (p. 7).

Varying motivations attract individuals to the role of program director. Gmelch and Miskin (1993) identified both extrinsic and intrinsic motivators underlying an individual's path to a program director position. Extrinsic reasons for serving may

include the coercion of deans or colleagues convincing individuals to take on the position; the individual may feel forced, as no one else was willing to take on the responsibility. In contrast, intrinsic reasons can range from duty and altruism to personal development and even financial gain. Individuals who accept the role out of duty usually stay in the position longer than their counterparts (Wolverton & Gmelch, 2002).

**The Role of the Department Chair**

The role of the department chairperson has evolved in tandem with the role of the academic department in higher education. Universities were not initially organized into different discipline departments. In the history of higher education, "academic departments do not show up until the second half of the 1700s" (Tucker, 1993, p. 14). The academic department, "the basic administrative unit of a college or university" (Booth, 1982, p. 4), was initially formed to provide a basic structure for institutions of higher education. Departments were created out of the need to (1) accommodate the fragmentation of coursework that came with the end of the prescribed classical curriculum, (2) provide a structure for new and developing disciplines, and (3) create a manageable unit for faculty (p. 4). This early organization of academic departments created a model for institutional and departmental life that remains generally intact today (p. 5).

As the academic department has changed, so have the expectations of its leadership. Whereas chairs in the past "presided over departments in an almost ceremonial manner" (Hecht et al., 1999, p. 22), today's chairs wrestle with a larger, and at times overwhelming, variety of tasks. It is estimated that 80,000 individuals hold the leadership role of department chair in colleges and universities (Gmelch & Miskin, 1993,

p. xi). Also, since department chairpersons are drawn from faculty ranks, few have experience in the administrative duties associated with running a department, with "over two-thirds of them" (Tucker, 1993, p. 27) having "had no prior administrative experience." This section begins to describe the complexity of the role of the department chairperson.

In providing an overview of research done on the role of the chair, Seagren, Creswell, and Wheeler (1993) stated that "the duties, tasks or responsibilities in these studies range from a list of 27 to a list of 98" (p. 5). Seagren et al. went on to state that when considering the roles an academic chair utilizes in performing his or her duties, "as few as two to as many as 28" (p. 5) have been identified.

Several sources (Gmelch & Miskin, 1993; Hecht et al., 1999; Lees, 2006; Tucker, 1993) have identified a variety of roles that a program director must be competent in to be effective. Often, these sources develop laundry lists of duties so long that the meaning of any one responsibility is diminished simply by the enormity of obligations listed.

Gmelch and Miskin (1993) listed four primary roles of the program director that emerged from their evaluation of current literature. Listed from most important to least important, these roles were (a) faculty developer, (b) manager, (c) leader, and (4) scholar. The first three roles focused on the managerial role of the program director. As a faculty developer, the program director is involved with "recruitment, selection and evaluation of faculty" (p. 10) and the informal mentoring of existing faculty to enhance morale and professional development. In the manager role, the role "least liked by chairs," program directors perform the routine functions required for a department to run effectively. Some of these functions include maintaining records, assigning faculty duties, supervising

support staff, and preparing budgets. The leader role is “the most critical role” in achieving departmental success. The chair provides “long-term direction and vision for the department” and “the external leadership for their departments by working with their constituents to coordinate department activities.” While the role of scholar is a departure from the managerial roles already listed, it is the area “chairs enjoy and feel most comfortable” with, yet “86 percent of department chairs significantly reduce their scholarly activities while serving as chair” (p. 11).

More than listing roles of the department chair, Gmelch and Miskin (1993) identified the role transition that occurs for the faculty member who chooses to move into administration. The transition required of the individual making the shift to a department chair is just as important as the responsibilities themselves and requires a period of adjustment. These transitions, listed in Table 2.1, reflect the shift the individual goes through, not only in direct responsibilities but in work style. Where a professor’s role is generally characterized as “autonomous, private, stable, solitary, austere, and a client of the department” (p. 15), the department chair’s role is much the opposite. The administrator’s profile is more “social, fragmented, accountable, public, mobile, prosperous, and custodial” (p. 16).

Table 2.1
*Role Characteristic Transitions*

| Faculty | | Department chairperson |
|---|---|---|
| Solitary | → | Social |
| Focus | → | Fragmented |
| Autonomy | → | Accountability |
| Manuscripts | → | Memoranda |
| Private | → | Public |
| Professing | → | Persuading |
| Stability | → | Mobility |
| Client | → | Custodian |
| Austerity | → | Prosperity |

*Note.* Adapted from *Leadership Skills for Department Chairs* by W. H. Gmelch and V. D. Miskin, pp. 14-15, 1993, Anker Publishing.

Hecht et al. (1999) presented a perspective of the program director that is more intertwined. They identified the department chair's roles with terms such as "front-line manager," "primary spokesman," and "the essential link between administration and department members" (p. 21) and defined these roles in the context of an increasingly complex academic environment. In addition, they indicated that the individual who accepts the position generally "has little, if any, previous administrative experience to match the nature and magnitude of their new roles and responsibilities" (Hecht et al., 1999, p. 27).

Hecht focused on the underlying duality that all academic chairs encounter, which is the paradoxical role of the department chair. This is a "distinctive characteristic" (p. 22) unique to department chairs, where they command a leadership role "yet seldom are given the scepter of undisputed authority." Compared with deans or vice presidents within the university, it is the department chair "who must live with his or her decisions everyday." Gmelch and Burns (1994) likened the individual who takes on this role to Janus, a god in Roman mythology (p. 79). Depicted by two faces, with one face turned to

the front and the other turned to the back, Janus represents the duality of the department chair where one face is that of administrator and the other is that of faculty. Consequently, "department chairs are both managers and faculty colleagues, advisers and advisees, soldiers and captains, drudges and bosses" (Gmelch & Burns, 1994, p. 22).

To add to the understanding of this leadership role, Lees (2006) identified characteristics that the department chair should have in order to navigate this unique position. "Deans are looking for cooperative chairs who have vision and are able to look beyond their own interests," stated Lees (2006, p. 21). Lees presented three essential traits that the academic chair should have in order to manage the complexities of the role: credibility, equity, and honesty. A credible chair "can instill confidence in others that the department can solve its own problems, meet its challenges, and achieve its goals" (p. 23). Although there exists a certain "assumed credibility" for the new chair, an enduring credibility is earned by being "visible, dependable" and "hardworking." Chairs need to be perceived as fair to their different constituencies. This does not mean "treating everyone the same way" (p. 24). It does mean that any aspect—from programmatic to personnel—associated with the department will be evaluated according to the same guidelines. A well-defined department mission with associated values and expectations will assist in ensuring that the chair is perceived as equitable with institutional resources. Finally, honesty is important in dealing with faculty and administration; overstating or exaggerating needs or withholding pertinent information from different constituencies will not enlist trust from the different groups the chair must work with.

Another listing of responsibilities for department chairs was provided by Tucker (1993). Tucker identified eight broad role categories and used them to collect and

organize a variety of responsibilities that are linked to the program chair. Within these eight categories, more than 50 specific responsibilities were identified. The categories and examples of their related duties are as follows:

- Departmental governance: Conducting department meetings, serving as an advocate for the department to others, and developing and implementing long-term department programs, plans, goals, and policies
- Instruction: Scheduling classes and supervising, scheduling, monitoring, and grading departmental examinations
- Faculty affairs: Recruiting and hiring new faculty, assigning faculty teaching assignments, monitoring faculty service contributions, and evaluating faculty performance
- Student affairs: Recruiting and selecting students, advising students during their participation in the program, and working with student government
- External communication: Communicating department needs to administration, maintaining and improving the department's image and reputation
- Budget and resources: Preparing, proposing, and administering the department's budget, seeking outside funding, and preparing annual reports
- Office management: Managing department facilities, monitoring maintenance and security, and maintaining essential department records, including student records
- Professional development: Overseeing faculty development, stimulating faculty research and publications, and representing the department in professional organizations and at meetings

These categories provide a comprehensive template for current and future department chair responsibilities.

The complexities associated with management and leadership of the academic department are many. Adding to this complex environment is the fact that "most department chairpersons are drawn from faculty ranks and have had, at best, very little administrative experience" (Tucker, 1993, p. 27). This aspect adds to the difficulty associated with this role, as department chairs may find themselves inadequately prepared to handle the variety of aspects associated with the position.

**Stress and the Program Director**

Considering the department chair's numerous roles and responsibilities, one might conclude that a significant amount of stress is associated with the position. Rasch, Hutchinson, and Tollefson (1986) listed five categories of stressors that may be found in the workplace. Considered intrinsic factors to the workplace environment are one's role in the organization, interpersonal relationships, career development, and the structure of the organization. Although all contribute to workplace stress, the self-perception of one's role in the organization aligns with the variety of roles and responsibilities the program director is assigned. "Role ambiguity, role conflict, and boundary spanning cause role-based stress" (p. 420). Role ambiguity is present when individuals are unsure about the scope and responsibilities of their job, the objectives associated with the position, or the expectations of colleagues. Rasch et al. (1986) evaluated department chairs using the University Administrative Concerns Questionnaire, which defined four different sources of stress that department chairs encounter. The sources of stress were role-based, task-based, social confidence, and conflict-mediation. Role-based stress was found to be the

highest source of stress for program directors. Examples of this type of stress included being able to settle conflicting demands of personnel, resolving differences with superiors, a self-perception that they held too little authority to carry out their responsibilities, lack of clarity about the scope and responsibilities associated with their job, and dealing with the conflicting demands of the personnel they work with. A situation in which individuals are unsure about the scope of their job and/or the responsibilities associated with it creates role ambiguity.

Another cause of department chair stress is a lack of time (Gmelch & Burns, 1993). Using the Department Chair Stress Index instrument, the authors identified four emerging themes of stressors that department chairs faced: (1) time pressures, (2) confrontation with colleagues, (3) organizational constraints, and (4) faculty pressures. Activities associated with how the program chair divided his or her time included having too heavy a workload, completing paperwork on time, telephone and visitor interruptions, and balancing work time with personal time, with the former often intruding on the latter. Without changing the conditions that are involved with chairing a department, higher education will continue to experience a "leadership crisis" (p. 265).

However, the role of the department chair is more complex than simply the responsibilities associated with the role. Gmelch and Burns (1994) conducted a second survey of department chairs to identify the multiple dimensions associated with stress. The role of the chair was not simply singular. The authors presented the role of the academic department chair as "the Janus job" (p. 79), since like the Roman god Janus, a department chair also holds two faces, those of administrator and faculty. To capture this dual role that the department chair holds, the authors combined the Administrative Stress

Index and the Faculty Stress Index into a single survey instrument. Their results showed that conflict mediation responsibilities caused program directors the highest concern. Within the category of conflict mediation were responsibilities such as complying with rules and regulations, obtaining program approval and support, and resolving differences with and among employees. Existing program chairs indicated that conflict mediation was the single factor that would make them unwilling to serve again in this capacity. In considering these factors in the context of "the Janus job," the authors noted that directors "are caught in the middle and stressed by their need to mediate the constraints of the institution and the differences among faculty" (p. 85).

The literature on department chairs provides an understanding of the complexities associated with the position. The responsibilities are many and may be affected by contextual variables across different institutions and disciplines. Carrying out these responsibilities requires strong leadership skills. Yet, department chairs have little training for the role they assume, which may contribute to the stress associated with the position.

## Leadership

Leadership has been a topic of study for much of the 20th century (Northouse, 2004), yet there is no mutually accepted definition of leadership (Bass & Bass, 2008). Burns (1978) stated that "leadership is one of the most observed and least understood phenomenons on earth" (p. 2). The fact that many different leadership theories have proliferated during the 20th century suggests that there is some truth to the statement. Fleishman et al. (1991) described 65 different classifications that have been used to define the different dimensions of leadership. The range of leadership theory runs

"between the often-simplistic popular approaches to . . . the more abstract theoretical approaches" (Northouse, 2004, p. xi).

Since no standard definition of leadership exists, Bass (2008) offered that "the choice of an appropriate definition should depend on the methodological and substantive aspects of leadership in which one is interested" (p. 23). Bass (2008) continued by offering the experience of the Globe Project and its effort to define leadership in 1994:

> 84 social scientists from 56 countries, . . . despite their linguistic and cultural diversity, could agree on a combination of elements regarded as universal. . . . They concluded that *leadership was the ability to influence, motivate, and enable others to contribute to the effectiveness and success of the organizations of which they are members*. (p. 23)

In the context of the academic environment, Tucker (1993) framed the leadership role of the department chairperson as "chief architect of the department's future" (p. 35), implying that at the department level the chairperson is the one who directs the department to specific goals.

A review of the literature presents a wide variety of approaches that have been used to examine leadership. A complete and exhaustive review of all of the approaches is beyond the scope of this review. However, it has been generally established (Northouse, 2004; Vecchio, 1995) that the study of leadership has historically involved three primary models: trait approaches, behavioral approaches, and situational approaches.

## Trait Approaches

One approach that persisted throughout the 20th century is the trait approach, considered to be the first systematic approach in the study of leadership. Grounded in the great-man theory proposed by Thomas Carlyle (1841, as cited in Bass & Bass, 2008), this

research approach attempted to identify specific traits of individuals who were good leaders (Bass & Bass, 2008, p. 49). These qualities were considered to be innate, and "it was believed that people were born with these traits and that only 'great' people possessed them" (Northouse, 2004, p. 15).

In conducting an extensive review of the literature on leadership that had been completed prior to 1948, involving 128 published trait studies, Stogdill (1948) attempted to identify and catalog the personal factors associated with leadership. He presented the following summary of the work:

> The following conclusions are supported by uniformly positive evidence from 15 or more of the studies surveyed: (a) The average person who occupies a position of leadership exceeds the average member of his group in the following respects: intelligence, scholarship, dependability in exercising responsibilities, activity and social participation, and socioeconomic status. (b) The qualities, characteristics, and skills required in a leader are determined, to a large extent, by the demands of the situation, in which he is to function as a leader. (p. 63)

The findings of this early survey identified that not only are traits important to leaders, but the traits must be relevant to the situation in which the leader functions. Stogdill repeated a second survey in 1974 that included 163 research studies that had been completed since the initial survey. The second survey validated that the leader traits initially presented were a part of leadership (Northouse, 2004).

Some of the criticisms associated with trait approaches to the study of leadership include that it fails to limit what appears to be an endless number of traits to a more definitive list and that it does not take into account the situational aspect of the position. This approach also fails to link traits with outcomes such as productivity. Finally, the trait approach was not found to be useful in training and developing leaders, even if a definitive list of traits could be identified, as traits are not easily changed (Northouse,

2004). As the results of trait studies were inconsistent in identifying qualities necessary for leadership, this line of inquiry began to lose favor (Day & Zaccaro, 2007).

The search for a universal set of leadership traits that could be applied to all settings and situations declined with the realization that "the evidence suggests that leadership is a relation that exists between persons in a social situation, and that persons who are leaders in one situation may not necessarily be leaders in other situations" (Stogdill, 1948, p. 65). Although diminished, trait leadership research continues (Zaccaro, 2007). However, Stodgill's insight provided the impetus to search for other approaches that would provide a more comprehensive view of the leader and leadership.

**Behavioral Approaches**

By the end of the 1940s, leadership research was shifting away from trait-oriented approaches and shifting towards behavioral approaches (Bass & Bass, 2008; Lussier & Achua, 2010). In 1948, Stogdill concluded:

> The personality-traits approach had reached a dead-end for several reasons: (1) attempts to select leaders in terms of traits had had little success; (2) numerous traits differentiated leaders from followers; (3) the traits demanded from a leader varied from one situation to another; and (4) the traits approach ignored the interaction between the leader and his or her group. Attention was shifted to what the leader did. (Bass & Bass, 2008, p. 539)

In addition to Stogdill, other researchers (Blake & Mouton, 1964; Hemphill, 1955; Hemphill & Coons, 1957; Katz & Kahn, 1951) began to study the behaviors associated with those in leadership positions. Among the researchers using the behavioral approach, those associated with the Ohio State studies, the Michigan studies, and studies of Blake and Mouton had the strongest methodologies (Northouse, 2004).

One group of behavioral studies, the Ohio State Leadership Studies, began to analyze how individuals acted when they were leading a group or organization. The Leadership Behavior Description Questionnaire was developed to measure leadership effectiveness (Hemphill, 1955). Subordinates rated a leader on 150 different items, grouped around two general types of behavior: consideration and the initiation of structure. Consideration was described as "the extent to which a leader exhibits concern for the welfare of the other members of the group" (Bass & Bass, 2008, p. 539). Consideration leader behaviors are relationship behaviors that the leader has with subordinates (i.e., friendship, mutual trust, and interpersonal warmth). Initiation of structure was described as "the extent to which a leader initiates activity in a group, organizes it, and defines the way the work is to be done" (Bass & Bass, 2008, p. 540). Initiating structure behaviors are task behaviors (i.e., organizing work, creating and maintaining work standards, and defining role responsibilities). Completed studies using the Leadership Behavior Description Questionnaire identified these two behaviors as distinct and independent, and studies that followed were mixed in determining if one behavior was more effective than the other (Northouse, 2004). Situational conditions within the leaders' environment often determined which behavior set was more effective. Again, as with the trait approach to leadership, the behavioral approaches did not encompass all of the aspects of leadership.

Instead of focusing on a leader's ability to solve common group needs, the Michigan State studies used objective group productivity to measure leadership effectiveness. These studies found effective leaders to exhibit task-oriented behaviors, relations-oriented behaviors, and participative leadership (Northouse, 2004; Yukl, 2006).

Task-oriented behaviors and relations-oriented behaviors were similar to the Ohio State constructs of initiating structure and consideration, respectively. The Michigan State studies added the participative aspect of leadership, indicating that an effective leader relied on group supervision instead of supervising each subordinate separately.

Blake and Mouton created a managerial grid in the early 1960s (Northouse, 2004). This grid focused on two factors used by leaders to reach organizational goals, with the horizontal axis representing a concern for production and the vertical axis representing a concern for people. Each axis was drawn as a 9-point scale, in which 1 represented minimum concern and 9 represented maximum concern. By plotting the scores from each axis, five leadership styles could be illustrated: authority-compliance, country club management, impoverished management, middle-of-the road management, and team management. These studies representing the behavioral approach to leadership provided an early framework for assessing leadership in a broad fashion by describing the major elements of leaders' behavior.

This period of behavioral approaches towards leadership, regardless of the researcher, repeatedly revolved around the concepts of personalized interest in the worker by the leader and workplace outcomes. In general, leaders' show of concern for their employees and development of genuine relationships with them have a positive correlation with measures of production as they relate to a specific industry. This period advanced leadership research beyond the simple description of traits to a focus on the importance of relationships in the work environment.

**Situational/Contingency Approaches**

In his review of behavioral research, Korman (1966) stated, "There is . . . no evidence of the predictive validity" (p. 360) of the two primary factors associated with behavioral research, consideration and initiating structure, in predicting leadership effectiveness. Korman noted that there are conditions within each situation that contribute to the success of the leader. Another perspective offered by Bass (2008) was that "the leader is a product of the situation and circumstances, not self-made and not a product of personality, drive, or ability" (p. 52). The foundation of the situational approach to the study of leadership centers on the basic premise that different situations require different kinds of leadership (Northouse, 2004).

One of the earliest views on situational leadership theory was developed by Hersey and Blanchard (1969). Initially called the *life-cycle theory of leadership*, the authors "formulated a situational theory of leadership in which the primary situational determinant of leader behavior is the task-relevant maturity of the subordinates" (Graeff, 1983, p. 285). The theory assumes that employees can have both job maturity and psychological maturity. To maximize these varying maturity levels, the leader incorporates two distinct aspects with situational leadership: a directive aspect, in which the leader evaluates the skills and competencies of the employee, and a supportive or relational aspect, in which the leader provides social and emotional support to the employee. In initially explaining their model, Hersey and Blanchard (1969) stated, "As the level of maturity of one's followers continues to increase, appropriate leader behavior not only requires less and less structure (task) but also less and less socio-emotional support (relationships)" (p. 29). Stated another way, with hindsight:

> The theory and its name were inspired by the changing leadership style needed by parents as a child grows from infancy through adolescence to adulthood. An infant certainly needs a different leadership style than an adolescent, and certainly a different style as a young adult. (Blanchard, Zigarmi, & Nelson, 1993, p. 22)

A situational leader is able to adapt the levels of directive and supportive behaviors exhibited in the workplace according to the changing needs of his or her employee resources (Northouse, 2004, p. 87).

Other leadership theories that incorporate situational aspects include contingency theory and path-goal theory (Northouse, 2004). Contingency theory, which "dominated much of the research on leadership during the 1970s and 1980s" (Bass & Bass, 2008, p. 61), was initially developed by F. E. Fiedler and described in 1967 (Bass & Bass, 2008; Northouse, 2004). Northouse (2004) stated that "it is called *contingency* because it suggests that a leader's effectiveness depends on how well the leader's style fits the context, . . . matching a leader's style to the right setting" (p. 109). The performance of a group or organization is dependent (or contingent) "on the degree to which the leadership situation was 'favorable'—that is, gave the leader influence over the group process and outcome" (Fiedler, 1995, p. 455). This *situational favorableness* identifies "the degree to which the situation itself provides the leader with potential power and influence over the group's behavior" (Fiedler, 1971, p. 129).

Two different leadership styles are included within the contingency theory, one that is task motivated and one that is relationship motivated. These leadership styles are measured using the Least Preferred Coworker (LPC) scale. In 16 questions, the employee is asked to score an individual whom they consider to be their least preferred coworker. The least preferred coworker is an individual the rater has had great difficulty working with, either currently or in the past. Bass (2008) stated, "A relatively high LPC score

(favoring the LPC) was most generally conceived by Fiedler to indicate a relations-motivated person" (p. 522). These individuals are motivated by having positive work relationships. Leaders perform best in situations with these employees when their influence and level of control is moderate (Fiedler, 1995). Employees with a low LPC are thought to be a more "task-oriented person" (Bass & Bass, 2008, p. 522), and leaders perform best in these situations "in which their control is either very high or relatively low" (Fiedler, 1995, p. 455).

Another situational approach to leadership is the path-goal theory. The premise of this approach is based on how leaders motivate employees in their workgroup or organization to accomplish assigned goals (Northouse, 2004). As House (1971) described:

> The motivational functions of the leader consist of increasing personal pay-offs to subordinates for work-goal attainment, and making the path to these pay-offs easier to travel by clarifying it, reducing road blocks and pitfalls, and increasing the opportunities for personal satisfaction en route. (p. 324)

Thus, an effective leader is one who assists subordinates through paths that ultimately lead to outcomes that are valued by both the organization and the employee (Schriesheim & Neider, 1996). In this approach, the leader utilizes different styles and adapts his or her skills to the present situation.

The situational approaches provide leaders with a variety of methods that can be used in different situations. These approaches suggest that it is the situation that prescribes the type of leadership necessary for a leader to be effective. As with both trait and behavioral approaches, the situational approaches also have limitations and do not consider all of the aspects of leadership.

As this section has outlined, the study of leadership has evolved through three distinct paradigms. The "trait approaches of the 1930s, the behavioral approaches of the 1950s, and the contingency approaches of the 1970s" (Antonakis & House, 2002, p. 4) provided stepwise and evolutionary approaches to the study of leadership. Each of these theories dissected different aspects of the individual in the leadership position, but none were comprehensive in capturing the real meaning of leadership. Hunt (1999) stated that in the 1970s and early 1980s, leadership research had entered a period of "doom and gloom" (p. 133); leadership models were not integrated, and much of the research was "fragmentary, unrealistic, trivial or dull." In fact, these sentiments were echoed by Antonakis and House (2002): "Leadership research was threatened in its early stages by seemingly inconsistent results and marginal advances in theory" (p. 3).

## Transformational Leadership and Full-Range Leadership Theory

The late 1970s began a period that would usher in a new paradigm in the understanding and study of leadership (Hunt, 1999). The seminal text by Burns (1978) framed leadership as a relationship that occurs between leaders and followers. This relationship requires the leader to identify what is important to the follower so that the goals of the leader and the follower are attained. Burns placed leadership on a continuum, with transactional leadership on one end and transformational leadership on the other. Transactional leadership focuses on the exchanges, or transactions, that occur between leaders and their followers. For example, in a transactional setting, a leader could give followers some control over their income by using incentives to encourage higher standards or gain higher productivity. Kirkbride (2006) stated that transactional leadership approaches encompass "fairly traditional managerial styles" and went on to

posit that this approach is "useful for stable situations but . . . less useful for organizations undergoing environmental turbulence or rapid change" (p. 23).

The other end of the spectrum, transformational leadership, refers to a process in which "an individual engages with others and creates a connection that raises the level of motivation and morality in both the leader and the follower" and in doing so motivates and helps the "followers reach their fullest potential" (Northouse, 2004, p. 170). Burns (1978) pointed to Mohandas Gandhi as the classic example of a transformational leader. Others described transformational leaders as "inspirational, intellectually stimulating, challenging, visionary, development oriented, and determined to maximize performance" (Avolio & Bass, 2004, p. 3). In presenting transformational leadership, Burns offered a "moral high road of leadership . . . that is individually considerate, intellectually stimulating, inspirationally motivational, visionary, and of high ethical standards" (Avolio & Yammarino, 2002, p. xvii).

Burns (1978) provided a two-dimensional model with transactional and transformational leadership on a single continuum. Bass (1985) further developed the work of Burns and expanded the theory of transformational leadership. In defining transformational leadership, Bass (1985) stated:

> To sum up, we see the transformational leader as one who motivates us to do more than we originally expected to do. This original performance expectation is based on our original level of confidence in reaching desired, designated outcomes by means of our performance.
>
> Such a transformation can be achieved in any one of three interrelated ways:
>
> 1. By raising our level of awareness, our level of consciousness about the importance and value of designated outcomes, and ways of reaching them.
> 2. By getting us to transcend our own self-interest for the sake of the team, organization, or larger polity.

3. By altering our need level on Maslow's (or Alderfer's) hierarchy or expanding our portfolio of needs and wants. (p. 20)

Bass (1985) differed from Burns (1978) in three respects. First, Bass emphasized an "expansion of the followers' portfolio of needs and wants" (p. 20), realizing that followers had needs for personal growth and development. Second, Bass (1985) allowed for transformations to be both positive and negative. This was a departure from Burns' premise that transformation was for "furthering what was good rather than evil," and as Bass further wrote, "for Burns, Hitler was not a transformational leader" (p. 20). Bass viewed Hitler as a transformational leader who energized and mobilized Germany but at the same time "was immoral, brutal, and extremely costly in life, liberty, property, and the pursuit of happiness to his victims" (p. 20). The third difference between Bass (1985) and Burns (1978) was Bass's belief that transactional leadership and transformational leadership were not opposite ends of the same continuum. Bass believed "that leaders will exhibit a variety of patterns of transformational and transactional leadership," clarifying that "most leaders do both but in different amounts" (p. 22).

Bass's (1985) initial theory of transformational leadership "is perhaps the most widely cited comprehensive theory of leadership that encompasses a range of leader behaviors" (Tejeda, Scandura, & Pillai, 2001, p. 32). This theory, which underwent continued refinement, was the precursor to the current FRLT (Antonakis & House, 2002, p. 4). The label "full range" was assigned to the model to challenge researchers in the leadership field to consider "a much broader range of leadership styles than the paradigms of initiation of structure and consideration" (Avolio & Bass, 2004, p. 1).

In its current form, the theory comprises three dimensions. In addition to the transactional and transformational dimensions, the dimension of laissez-fair or avoidance

leadership was added to account for nonleadership (Paul, Costley, Howell, & Dorfman, 2002, p. 196). The model "holds substantial promise to explain leadership and render its multidimensional nature into tangible and empirically measured behaviors useful for predicting leadership outcomes" (Antonakis & House, 2002, p. 4).

The primary instrument used to measure the nine distinct factors associated with FRLT is the Multifactor Leadership Questionnaire (MLQ) (Antonakis, Avolio, & Sivasubramaniam, 2003; Tejeda et al., 2001). The MLQ measures the constructs of the FRLT by asking both the leader within a group and the followers of that group to respond to 45 descriptive statements that measure the nine factors associated with the theory.

**The Factors of Full-Range Leadership Theory**

Bass (1985) posited that transactional and transformational leadership are conceptually separate and independent dimensions that appear simultaneously in leader behavior. Bass viewed transformational leadership attributes as augmenting transactional leadership attributes. Each of the basic constructs, transformational and transactional leadership, is multidimensional. An understanding of the factors that comprise each of these constructs forms a foundation for understanding FRLT. The FRLT described by Bass and Avolio (2004) consists of nine factors that make up the three broader classifications of behaviors: transformational, transactional, and laissez-faire leadership. This section outlines the factors related to the FLRT.

**Transformational leadership behaviors.** Transformational leaders look beyond the day-to-day routine that occurs in many workplaces by maintaining and communicating "a vision of where their group, department, or organization should be heading" (Avolio, Waldman, & Yammarino, 1991, p. 9). Transformational leadership

comprises five factors: idealized influence (attributed), idealized influence (behavior), inspirational motivation, intellectual stimulation, and individualized consideration (Avolio & Bass, 2004).

The factor of idealized influence was derived from the study of charismatic leadership (Yukl, 1999b) and is characterized by exceptional leaders who usually emerge in the context of crisis or major change (Hinkin & Tracey, 1999). There are two types of idealized influence: attributed and behavioral. Leaders that exhibit idealized influence "are admired, respected, and trusted," will share risk with their followers, and are "consistent in conduct with underlying ethics, principles, and values" (Avolio & Bass, 2004, p. 96). Attributed idealized influence refers to a follower's perception of "a leader's power, confidence, and transcendent ideals" (Antonakis & House, 2002). Examples of leading by idealized influence (attributed) may include going beyond one's self-interest for the good of the group, self-display of confidence and power, or acting in ways that earn respect from followers (Avolio & Bass, 2004). Behavioral idealized influence refers to "specific leader behaviors that reflect the leaders' values and beliefs, their sense of mission and purpose, and their ethical and moral orientation" (Antonakis & House, 2002). Examples of leading by idealized influence (behaviors) may include articulating important beliefs and values, expressing to others the ethical consequences of decisions, and emphasizing a "collective sense of mission" (Avolio & Bass, 2004, p. 96). In either case, idealized influence show followers "that they can accomplish objectives that they thought impossible, [and] builds the leader's influence for future missions and objectives" (Avolio et al., 1991, p. 15).

Inspirational motivation is a leader's ability to motivate and inspire followers "to reach ambitious goals that may have been previously unreachable" (Antonakis & House, 2002, p. 9). Inspirational motivation may be easily observed in the upper levels of an organization, but is a quality that is shared in varying degrees by individuals at all levels. An inspirational leader raises employee expectations and communicates confidence that employees can achieve extraordinary goals (Avolio et al., 1991, p. 15). Leader behaviors that exemplify this style of leadership include speaking confidently about the future, articulating a vision for the future, and speaking enthusiastically about goals (Avolio & Bass, 2004).

The final two factors associated with transformational leadership are intellectual stimulation and individualized consideration. A leader who is intellectually stimulating "helps people to think about old problems in new ways" (Avolio et al., 1991, p. 14) by stimulating followers to question assumptions and reframe problems. This is not always a one-way process; "a good leader not only stimulates the thinking of followers, but is also open and stimulated by their reasoning and ideas" (Avolio et al., 1991, p. 14). As an example, an intellectually stimulating leader would seek alternative ideas when solving problems and suggest new ways to approach assignments (Avolio & Bass, 2004).

The final behavioral factor associated with the transformational leader, individualized consideration, reflects leaders' ability to pay attention to the individual needs of each member in the group rather than treating everyone the same. The behavior assumes "that each employee has different needs and, that for a specific employee, those needs will change over time partially based on the influence of the leader" (Avolio et al., 1991, p. 13). In some instances this behavior may present as a mentoring relationship

where the leader takes the time to learn the strengths and weaknesses of employees in an effort to develop their strengths. At other times the behavior may be symbolic. Consider the CEO of a company "who takes the time to learn as many employee names as possible so that conversations, as infrequent as they may be, can be more personal" (Avolio et al., 1991, p. 13). Table 2.2 summarizes the behavioral components of transformational leadership of the FRLT.

Table 2.2
*Factors of Transformational Leadership Behavior*

| Theme | Definition | |
|---|---|---|
| Transformational | A style in which a leader influences and increases associates' awareness to strive for higher levels of potential. | |
| ` | Factors | Definition |
| | Idealized influence (attributed) | A leader who is admired, respected, trusted, and perceived by associates as being confident and ethical. |
| | Idealized influence (behavior) | A leader who is admired, respected, and trusted and whose actions are perceived by associates as being centered on values, beliefs, and a sense of mission. |
| | Inspirational motivation | A leader's motivation of followers by providing meaning to their work. |
| | Intellectual stimulation | A leader's action that stimulates followers' effort to be innovative and creative by questioning assumptions. |
| | Individualized consideration | A leader who pays attention to each individual's need for achievement and growth. |

*Note.* Adapted from *Developing Potential Across a Full Range of Leadership,* by B. J. Avolio and B. M. Bass, 2002, Mahwah, NJ: Lawrence Erlbaum Associates.

**Transactional leadership behaviors.** Burns (1978) viewed transactional leadership as an exchange of reward for compliance. In the FRLT, transactional leadership is defined in broader terms, including the components of contingent reward and management by exception (active) (Avolio & Bass, 2004). Transactional leadership is also "a necessary precondition for transformational leadership to be effective as it serves to develop the relationship between the leader and the follower" (Hinkin &

Schriesheim, 2008, p. 501). The factors presented here provide focus and direction for followers and "if lacking, would result in confusion and ambiguity from the use of transformational behaviors" (Hinkin & Schriesheim, 2008, p. 501).

Contingent reward is a factor that is based on economic and emotional exchanges between the leader and the follower. The leader clarifies expectations and requirements and rewards successful accomplishments with reward and praise (Antonakis & House, 2002). This factor, considered to be one of the most widely studied subdimensions of the MLQ (Hinkin & Schriesheim, 2008), is generally perceived as "a constructive transaction and reasonably effective in motivating followers, but to a lesser degree than is transformational leadership" (Antonakis & House, 2002, p. 10). Examples of leader behavior using contingent reward may include identifying specific individuals responsible for achieving performance goals, clarifying rewards associated with goal achievement, and expressing gratitude and satisfaction when expectations are met (Avolio & Bass, 2004).

The second transactional behavior, management by exception, is broken down into two distinct factors: active and passive. Unlike contingent reward, management by exception involves corrective transaction and is less effective than contingent reward (Bass, 1998). Active management by exception requires a leader to actively monitor deviations from expected standards. Mistakes, errors, or other items that constitute ineffective performance by followers result in corrective action "as quickly as possible when they occur" (Avolio & Bass, 2004, p. 97). Although this factor may appear pejorative, there are situations when it is useful (e.g., when safety is a high priority) and if management by exception is used excessively, perceptions about ineffective leader

behavior from followers are minor (Hinkin & Schriesheim, 2008). Examples of this type of leader behavior include focusing attention on and maintaining records of all mistakes. Table 2.3 summarizes the behavioral components of transformational leadership within the FRLT.

Table 2.3
*Factors of Transactional Leadership Behavior*

| Theme | Definition | |
|---|---|---|
| Transactional | A style based on an exchange process rooted in contractual obligations. | |
| | Factors | Definition |
| | Contingent reward | A leader who clarifies expectations and provides recognition when goals are achieved. |
| | Management by exception (active) | A leader who is actively vigilant and provides close monitoring to ensure that standards are met. |

*Note.* Adapted from *Developing Potential Across a Full Range of Leadership,* by B. J. Avolio and B. M. Bass, 2002, Mahwah, NJ: Lawrence Erlbaum Associates.

**Passive/avoidant leadership behaviors.** Avolio and Bass (2004) defined these factors as being more passive and "reactive" (p. 98) than the other behaviors. These types of responses are less systematic, as followers are not made aware of them early in the process. Leaders who exhibit these behaviors do not specify agreements, clarify expectations, or provide goals to their followers. In FRLT, the components of passive/avoidant leadership include management by exception: passive and laissez-faire behaviors, both of which have negative effects on desired outcomes. Although the operational definitions of these behaviors are quite different, there is theoretical overlap between them (Hinkin & Schriesheim, 2008). First consider their unique definitions: Passive management by exception occurs when leaders "only intervene after noncompliance has occurred" (p. 508). Laissez-faire behavior is an absence of leadership. When those who are charged with leading avoid making decisions and abdicate responsibility, the nonresponse to situations may merit attention. Examples of

management by exception: passive behaviors include failing to interfere until problems become too serious to ignore or waiting to intervene until things go wrong. Laissez-faire behaviors are even less active in their approach and may be exhibited by avoiding getting involved or making decisions. Hinkin and Schriesheim (2008) offered two explanations for this overlap in understanding. First, leaders who tend to use behaviors that are management by exception: passive also tend to use laissez-faire behaviors. Second, "respondents have a difficult time perceptually distinguishing between the two measures since their items tap the same general domain (passive leadership)" (p. 508). Table 2.4 summarizes the behavioral components of passive/avoidant leadership within the FRLT.

Table 2.4
*Factors of Passive/Avoidant Leadership Behavior*

| Theme | Definition | |
|---|---|---|
| Passive/avoidant | A style that is reactive only after problems have become serious. | |
| | Factors | Definition |
| | Management-by-exception (passive) | A leader who only intervenes after mistakes occur. |
| | Laissez-faire | The avoidance or absence of leadership. |

*Note.* Adapted from *Developing Potential Across a Full Range of Leadership,* by B. J. Avolio and B. M. Bass, 2002, Mahwah, NJ: Lawrence Erlbaum Associates.

FRLT examines leadership as a total system and includes the behavioral factors of transformational, transactional, and passive/avoidant leadership. One of the underlying constructs essential to this theory "is that every leader displays each style to some amount" (Bass, 1998, p. 7). Bass and Avolio (1994) also proposed that transformational leadership correlates with effectiveness. The more frequently a leader demonstrates transformational leadership, the more effective the leader is perceived to be. As a leader relies on transactional and passive-avoidant behaviors, his or her effectiveness diminishes. By adding this third dimension to the theory, the theory can be viewed

beyond a simple two-dimensional continuum. An optimal profile of a transformational leader is shown in Figure 2.1.

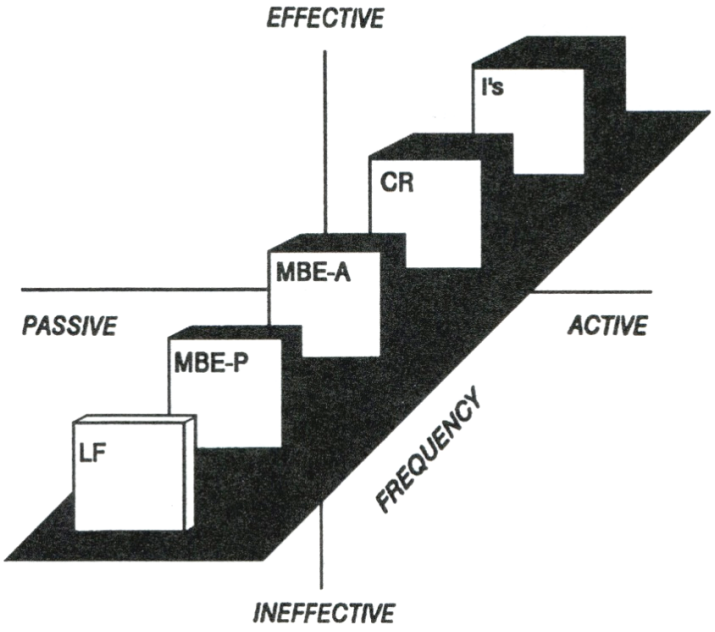


*Figure 2.1.* The optimal profile of full-range leadership theory. LF indicates laissez faire; MBE-P, management by exception-passive; MBE-A, management by exception-active; CR, contingent reward; I's, idealized influence (attributed and behavior), inspirational motivation, intellectual stimulation, and individualized consideration. From *Improving Organizational Effectiveness Through Transformational Leadership* by B. M. Bass and B. J. Avolio, 1994, p. 5. Reprinted with permission from Sage Publications (Appendix F).

The added dimension of depth represents how frequently a leader displays a particular leadership behavior as perceived by self and others. In the optimal profile, the leader frequently exhibits the transformational behaviors of idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration and rarely the passive/avoidant behavior of laissez-faire leadership.

The opposite exists in a situation of the poorly performing leader, where the leader profile gravitates towards passive/avoidant behaviors. Figure 2.2 presents a suboptimal profile where the leader is heavily perceived as using laissez-faire leadership.

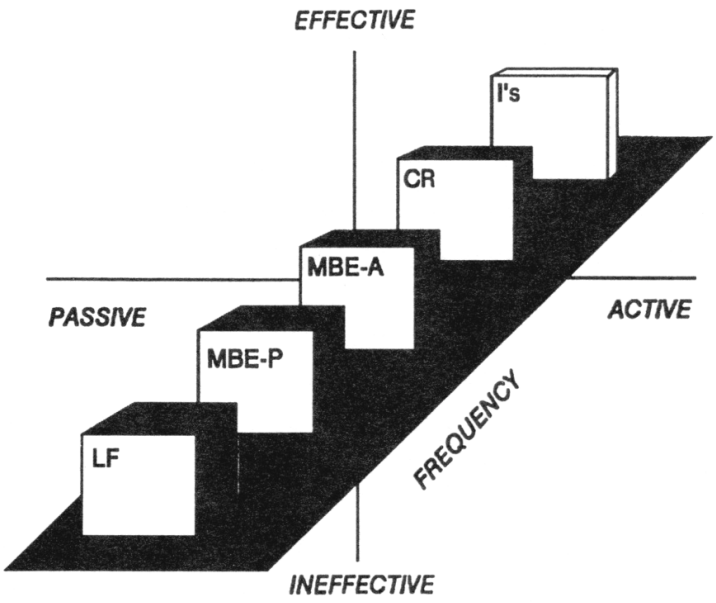


*Figure 2.2.* Suboptimal profile of full-range leadership theory. LF indicates laissez faire; MBE-P, management by exception-passive; MBE-A, management by exception-active; CR, contingent reward; I's, idealized influence (attributed and behavior), inspirational motivation, intellectual stimulation, and individualized consideration. From *Improving Organizational Effectiveness Through Transformational Leadership* by B. M. Bass and B. J. Avolio, 1994, p. 6. Reprinted with permission from Sage Publications (Appendix F).

FRLT provides an understanding about the constructs that individuals use in leadership positions. By recognizing and describing transformational, transactional, and passive/avoidant leader behaviors, a pathway exists to identify and train future leaders.

**Leadership outcomes associated with FRLT.** The attributes associated with FRLT are measured using the MLQ, a survey instrument developed by Bass and Avolio (1994). The MLQ has gone through several revisions since it was originally introduced (Bass, 1985), and in one of the earlier iterations, the MLQ R5 (Avolio & Bass, 2004), questions were embedded into the survey that were generally associated with desired organizational outcomes and success of the group. These outcomes include extra effort, effectiveness, and satisfaction. Extra effort describes the extent to which an employee exerts himself or herself in the workplace as a consequence of the workplace leadership.

Effectiveness describes the leader's effectiveness as seen by both self and others in four areas: "meeting the job-related needs of associates; representing associates' needs to higher-level managers; contributing to organizational effectiveness; and performance by the leader's work group" (Bass & Avolio, 1997, p. 37). The last outcome, satisfaction, describes how satisfied both the leader and the associates are with the leader's methods and style.

Avolio and Bass (2004) provided correlations with leadership factor scores and the outcomes in their review of independent empirical studies. An additional meta-analysis by Lowe, Kroeck, and Sivasubramaniam (1996) also supported these correlations. In considering the leadership attributes of an organizational unit's effectiveness, the FRLT has been found to be "hierarchically related to the outcomes of leadership" (Antonakis & House, 2002, p. 10). The transformational factors and the transactional factor of contingent reward are positive predictors of effectiveness, and the remaining passive constructs are negative predictors. The management by exception: active construct "has been found to be a weak positive predictor in some instances and a zero or negative predictor in other instances" (Antonakis & House, 2002, p. 11). Avolio and Bass (1998) suggested that in situations in which risk is common, management by exception: active may be necessary to ensure successful outcomes. All of the passive/ avoidant factors are considered to be ineffective, and although there may be occasion to use them, their overuse can generate stress or anxiety in followers (Bass, 1998).

**Critiques of Full-Range Leadership**

In examining FRLT, Hunt (1999) provided a historical analysis of the leadership field and described three stages necessary for the development of a theoretical construct:

introduction, evaluation, and consolidation. After assessing the state of leadership theory in the context of these three stages, he placed the current state of the field in the second stage, evaluation. In the evaluation stage, ideas are evaluated and critically reviewed using existing literature, and suggestions are offered to improve the construct and its associated measures. This generalized progression of theory development would appear to be consistent with the current state of FRLT. While many positives have been associated with FRLT, there have also been criticisms about the approach. Criticism about this theory includes weaknesses associated with the theory (Hunt, 1999; Yukl, 1999a, 1999b) and the MLQ measurement instrument (Antonakis et al., 2003; Tejeda et al., 2001; Yukl, 1999b) of the FRLT.

Yukl (1999a) described two-factor models that have been historically used to define leadership as having a tendency to "oversimplify a complex phenomenon and encourage stereotyping of individual leaders" (p. 34). Distilling theories to two factors, for example, task versus relations or autocratic versus participative, tends to obscure important underlying notions within the contrasting factors. The transformational model of Bass (1985) has evolved into the FRLT, adding more component behaviors along the way, but still relies on the basic process of leadership occurring at the dyadic level. Only the interaction between a leader and one individual follower is examined at this level, and the larger context of group and organizational processes is missed or underestimated. The FRLT, like other transformational theories, also reflects "implicit assumptions associated with the 'heroic leadership' stereotype" (Yukl, 1999a, p. 39). This premise assumes that the leader has influence enough to get followers to "make self-sacrifices and exert exceptional effort" to meet group or organizational goals. This assumption also directs

leadership studies towards "identifying the essential traits, skills, and behaviours of individual leaders for motivating subordinates, rather than toward understanding reciprocal influence processes in dyads and groups" (p. 39). In a separate critique, Yukl (1999b) identified additional areas where ambiguity within the FRLT exists. For example, within the context of the FRLT, five factors of behavior are identified as transformational, yet "the theoretical rationale for differentiating among the behaviors is not clearly explained" (p. 288). This, as well as overlapping content between the factors, creates ambiguity within the model.

Antonakis et al. (2003) reiterated these early concerns about the initial versions of the MLQ and the variability of results. They noted that with "the expert judgment of six leadership scholars who recommended additions or deletions of items" (p. 265), revisions were made to the initial version of the MLQ. Studies completed with the initial version of the MLQ lacked discriminate validity, as some factors were not distinguishable. This was attributed to the initial use "of nonhomogenous samples to test the construct validity of this instrument" (p. 283). Early revisions included replacing the original charisma scale with idealized influence and splitting management by exception into active and passive components. Antonakis et al. (2003) answered many of these criticisms in their examination of the factor structure of the current MLQ (Form 5X-short), concluding that the MLQ "can be used to represent the full-range model of leadership and its underlying theory" (p. 283).

## Full-Range Leadership in the Health and Medical Professions

The purpose of this study was to determine the leadership styles and outcomes of PA program directors using FRLT as described by Avolio and Bass (2004). Current

literature provides little understanding about the leadership styles and outcomes within PA education programs. Only two studies (Lohenry, 2010; Muma, 2004) have been done on this unique cohort of academic leaders. Muma (2004) described the role of PA program directors through the taxonomy of managerial roles as described by Mintzberg. Mintzberg identified 10 managerial roles that account for all managerial activities that a leader might perform. In applying this corporate model to the education setting, Muma et al. identified Mintzberg's leader role as the one viewed as most important by PA faculty and department chairpersons. While an extensive body of knowledge on leadership theory exists (Bass & Bass, 2008), with the exception of the research by Muma, no other studies on leadership have been completed with this cohort of academic leaders.

The FRLT, using the MLQ as the measurement instrument, has been studied extensively at all levels of organizations and in a variety of settings, including "production, service and military organizations" (Avolio & Bass, 2004, p. 4). While studies examining transformational leadership in health care exist (Snodgrass & Shachar, 2008), very few (Aaron, 2005; Firestone, 2010; Shaver, 2003; Snodgrass & Shachar, 2008; Weissman, 2010; Zuest, 2003) are available that have studied FRLT in program directors of allied health education programs. This section reviews the leadership studies completed on allied health program directors using the FRLT and the MLQ. Table 2.5 presents a summary of the research presented in this section.

Table 2.5
*Studies Examining Full-Range Leadership Theory in Allied Health Program Directors*

| Author/s | Subject/s | Variables studied | Major findings |
|---|---|---|---|
| Aaron (2005) | Radiologic technology program directors of certificate, associate, and baccalaureate programs | Full-range leadership and program director responsibilities | Program directors perceived themselves using transformational leadership skills frequently. A significant relationship existed between leadership skills and responsibilities, except office management. |
| Firestone (2010) | Allied health program directors and faculty | Full-range leadership and organizational outcomes | Chairpersons primarily demonstrated leadership behaviors associated with transformational leadership factors and the contingent reward factor of transactional leadership. |
| Shaver (2003) | Radiology program faculty of associate degree programs | Full-range leadership and program outcomes | Program directors were perceived by faculty to primarily use transformational leadership behaviors. Positive correlations were demonstrated between all transformational factors and the contingent reward factor of transactional leadership. |
| Snodgrass & Shachar (2008) | Occupational therapy faculty of graduate degree programs | Full-range leadership and organizational outcomes | Faculty perceptions of program director performance identified transformational leadership as having a significant positive predictive relationship with leadership outcomes, whereas transactional leadership had a negative predictive relationship. |
| Weissman (2008) | Respiratory care program directors and faculty | Full-range leadership and organizational outcomes and program outcomes | Significant relationships existed between the organizational outcomes of satisfaction, extra effort, and effectiveness and full-range leadership attributes. No relationship was found between the program director leadership style and program outcomes. |
| Zuest (2003) | Athletic training education program directors in undergraduate and graduate institutions | Full-range leadership and organizational outcomes | Program directors perceived themselves as utilizing the five transformational leadership behaviors and the transactional leadership behavior contingent reward to a greater degree than the transactional leadership behaviors of management by exception: active and passive and the nonleadership behavior laissez-faire. |

In radiology technology education, two separate studies (Aaron, 2005; Shaver, 2003) have utilized the MLQ. In a published study (Aaron, 2006), the MLQ was used as an assessment tool to assess leadership styles of program directors. Once identified as either a transformational or transactional leader, the author deployed additional surveys to determine program director satisfaction with different responsibilities associated with the role. Other than identifying transformational and transactional leaders, the published study offered little in regards to the MLQ data that underpins this study.

The larger foundational study (Aaron, 2005) did present the MLQ data. In a study that used a mixed-methods approach, Aaron (2005) studied the leadership behaviors of program directors of radiologic technology academic programs. Incorporating the MLQ survey, program directors self-described their style of leadership and, utilizing a leadership matrix instrument developed by the author, identified their responsibilities and duties associated with those responsibilities. Utilizing a stratified purposeful sampling method, 590 programs were identified to take part in the study. The programs sampled offered either a baccalaureate degree (4.7%), an associate's degree (56.7%), or a certificate (38.6%). A total of 284 program directors responded, for a 48% response rate.

Using the MLQ Form 5x-Short, Aaron described the program directors' self-perceptions in terms of FRLT. Program directors of radiologic technology programs viewed themselves primarily as transformational leaders, with a mean value of 3.28 across the five transformational variables. All transformational variables were above 3.0, with individualized consideration having the highest mean (mean = 3.51). A value above 3 indicates that these leadership skills are used fairly often to frequently (Bass & Avolio, 1997). Program directors perceived using transactional attributes less frequently than

transformational variables (mean = 2.01) and using laissez-faire the least (mean = .53). Table 2.6 summarizes the self-ratings of program directors using the MLQ.

Table 2.6
*Leadership Attributes Reported by Radiologic Technology Program Directors (Aaron, 2005)*

| Factors | M | SD | *n* |
|---|---|---|---|
| Inspirational motivation | 3.35 | .515 | 284 |
| Intellectual stimulation | 3.18 | .469 | 284 |
| Individualized consideration | 3.51 | .400 | 284 |
| Idealized influence (behavior) | 3.24 | .524 | 284 |
| Idealized influence (attributed) | 3.13 | .553 | 284 |
| Contingent reward | 3.26 | .493 | 284 |
| Management by exception (active) | 1.78 | .878 | 284 |
| Management by exception (passive) | 1.00 | .639 | 284 |
| Laissez-faire | .53 | .543 | 284 |

Aaron (2005) also presented the reliability for each of the MLQ scales. Nunnally (1978) recommended that survey instruments used in basic research have a reliability of .70 or better. The reliability of the transformational variables ranged from .512 to .747, with only inspirational motivation above .70 reliability. The reliability of the transactional variables ranged from .447 to .749, with only management by exception (active) above .70 reliability. The reliability of laissez-faire leadership was .505. These differed from the reliabilities reported for the factors by Avolio and Bass (2004, p. 48) of .74 to .94. However, the reliability factors reported by Avolio and Bass did not include self-raters, whereas the Aaron study (2005) included only self-raters.

An unpublished study by Shaver (2003) surveyed radiology technology faculty members in associate degree programs to determine subordinate perceptions of their chairperson and whether these perceptions had any impact on program outcomes. Program directors from all associate-degree radiography programs ($N = 321$) were initially surveyed for demographic data and program outcomes. A list of full-time and

part-time faculty members ($N = 352$) was obtained from the program directors; this group received the MLQ Form 5x-Short. Table 2.7 summarizes faculty perceptions of leadership attributes held by their program director.

Table 2.7
*Leadership Attributes of Program Directors as Reported by Radiology Technology Faculty (Shaver, 2003)*

| Variable | M | SD | *n* |
|---|---|---|---|
| Inspirational motivation | 3.25 | .788 | 174 |
| Intellectual stimulation | 2.96 | .802 | 175 |
| Individualized consideration | 3.05 | .781 | 174 |
| Idealized influence (behavior) | 3.06 | .787 | 173 |
| Idealized influence (attributed) | 3.16 | .880 | 174 |
| Contingent reward | 3.17 | .782 | 174 |
| Management by exception (active) | 1.90 | .990 | 173 |
| Management by exception (passive) | 1.19 | .907 | 174 |
| Laissez-faire | .72 | .774 | 175 |

Shaver (2003) identified reliability values ranging from .65 to .87. The reliability of the transformational variables ranged from .65 to .87, with inspirational motivation holding the highest value. The reliability of the transactional variables ranged from .74 to .78. The reliability of laissez-faire leadership was .65. These values are more consistent with those reported by Avolio and Bass of .74 to .94, as they reflect ratings from those other than the program directors.

Shaver (2003) also incorporated the leadership outcomes portion of the MLQ in the results to identify the impact of leadership style (transformational, transactional, and laissez-faire) in predicting program director effectiveness, faculty satisfaction, and faculty willingness to exert extra effort. The results of this analysis in radiology technology faculty showed that leadership style was a significant predictor of all three leadership outcomes. Program director effectiveness and faculty satisfaction correlated higher with transformational leadership than transactional leadership. The third outcome

measure, extra effort, correlated slightly higher with transactional leadership than with transformational leadership. However, none of these correlations was statistically significant ($p > .05$).

The perceptions of occupational therapy faculty members about program director leadership styles were the focus of a study by Snodgrass and Shachar (2008). This study surveyed faculty members of graduate-level occupational therapy programs to determine the effects of transformational and transactional leadership on the leadership outcomes of extra effort, effectiveness, and satisfaction. The sample for this study was 500 randomly selected occupational therapy faculty members from a pool of ~1,077 (according to available data from the American Occupational Therapy Association in 2005). From this group, 184 (37%) faculty responded from 98 (65%) institutions providing accredited occupational therapy programs. In this article, the faculty perceptions of leadership attributes of program directors were presented in the aggregate. The average (mean) score for program directors as perceived by faculty members was 3.8 for transformational leadership and 2.8 for transactional leadership. The transactional attribute of contingent reward scored a mean score of 3.7, similar to the transformational attribute ratings and raising the transactional aggregate score upward. The mean score for laissez-faire attributes was 2.0, although in this study laissez-faire was incorporated into the transactional attributes.

Snodgrass and Shachar (2008) compared each leadership style individually to the outcomes and then combined the styles and compared them to the outcomes in the aggregate. The following observations, all statistically significant ($p < 0.001$), were presented. In considering only transformational leadership attributes, three of the five

individual transformational leadership attributes (idealized attributes, intellectual stimulation, and individualized consideration) were found to have a strong positive predictive relationship with all three leadership outcomes. Idealized behavior was not a significant predictor for any of the leadership outcomes. Inspirational motivation was not a significant predictor for the outcomes of extra effort and satisfaction. The failure of these attributes to align with these outcomes is not consistent with FRLT and "may be explained by the notion that university faculty expect to manage their own research and teaching efforts" (p. 233). Faculty members "are typically expected to be self-motivated, self-initiating, and autonomous professionals, all leading to their placing less value on the leader's ability to act consistently and inspire others in order to be perceived" (p. 233) as an effective leader. In regards to transactional attributes and leadership outcomes, the study's findings showed a statistically significant negative predictive relationship.

When both transformational and transactional attributes, in their aggregate values, were viewed in the context of leadership outcomes, again significant relationships existed. Transformational factors demonstrated a statistically significant positive impact on all outcomes, and transactional factors had a negative impact on leadership outcomes. This finding is consistent with Bass's (1985) assertion that transactional leadership is an important prerequisite to effective leadership and when augmented with transformational leadership will yield greater performance levels.

In a published study, Weissman (2010) studied perceptions about FRLT among respiratory care program directors and faculty with the MLQ, using a template and framework similar to those of Shaver (2003). In this paper, the author reported the results

only for faculty satisfaction and extra effort; to fill in additional information, the foundational dissertation (Weissman, 2008) was accessed.

Weissman deployed the electronic version of the MLQ to assess program director and faculty perceptions. Program directors from all accredited programs in the United States ($n$ = 350) were invited to participate in the study, and 78 responded, providing the names and e-mail addresses for 172 faculty members. A web link to an online version of the MLQ was forwarded to these individuals by Mind Garden, Inc., the publication company that holds the distribution rights for the survey, and 151 completed the survey. Mind Garden, Inc., then matched program director responses with faculty responses. In the end, 55 institutions had responses from both the self-rater (program director) and other-rater (faculty only). The average (mean) scores for the leadership styles for both program directors and faculty are shown in Table 2.8.

Table 2.8
*Leadership Styles of Program Directors as Perceived by Respiratory Care Leaders and Faculty Raters (Weissman, 2008)*

| | Mean (standard deviation) | | |
|---|---|---|---|
| Theme | Director | Faculty | *n* |
| Transformational | 3.13 (.44) | 3.31 (.51) | 55 |
| Transactional | 2.45 (.51) | 2.59 (.41) | 55 |
| Passive/avoidant | .71 (.48) | .48 (.50) | 55 |

Significant relationships were found between all of the leadership outcomes and the leadership styles associated with the FRLT. Transformational and transactional behaviors had significant positive relationships with all of the leadership outcomes. Passive/avoidant behaviors had a significant negative correlation with all of the leadership outcomes.

In an unpublished study, Zuest (2003) surveyed only program directors of athletic training programs using the MLQ. The purpose of this study was to determine the leadership behaviors of athletic training program directors in the context of the FRLT and the relationships of these behaviors to the leadership outcomes of program director effectiveness, faculty satisfaction, and faculty willingness to exert extra effort. This study utilized a hard copy of the survey. A total of 182 surveys were mailed to 184 accredited education programs (two institutions had undergraduate and graduate programs led by the same program director), and 106 surveys were returned, 103 with complete data. Table 2.9 summarizes program director perceptions of their leadership attributes.

Table 2.9
*Athletic Training Program Director Leadership Attributes (Zuest, 2003)*

| Variable | Mean | Standard deviation | *n* |
|---|---|---|---|
| Inspirational motivation | 3.23 | 0.56 | 103 |
| Intellectual stimulation | 3.12 | 0.49 | 103 |
| Individualized consideration | 3.38 | 0.53 | 103 |
| Idealized influence (behavior) | 3.20 | 0.48 | 103 |
| Idealized influence (attributed) | 3.02 | 0.53 | 103 |
| Contingent reward | 3.14 | .782 | 103 |
| Management by exception (active) | 1.78 | 0.77 | 103 |
| Management by exception (passive) | 1.35 | 0.69 | 103 |
| Laissez-faire | .77 | 0.51 | 103 |

Based on the data in Table 2.9, the author simply stated that the profile of athletic training program directors was generally consistent with Bass's "optimal" profile (Bass, 1998, p. 7). The exception to this "optimal" profile is that the transactional attribute of consistent reward was used more frequently than the transformational attributes of intellectual stimulation and idealized influence (attributed).

Zuest (2003) also examined the relationships between program directors' perceptions about their leadership attributes and the leadership outcomes of program

director effectiveness, faculty satisfaction, and faculty willingness to exert extra effort. Regression equations for each of the leadership outcomes were developed. Program director perceptions did yield some significant correlations with leadership outcomes. The correlations included the leadership attribute of inspirational motivation with follower extra effort; the attributes of inspirational motivation and contingent reward with leader effectiveness; and the leadership attributes of idealized influence (attributed) and inspirational motivation with follower satisfaction. In addition, the author added four selected measures of leadership experience into these equations to determine if experience contributed significantly towards leadership outcomes. These four measures included (a) years served as a faculty member in an athletic training program, (b) years served as program director at the current institution, (c) years served as program director at any institution, and (d) years served as an administrator in any higher education institution.

In an attempt to capture the use of FRLT across the entire spectrum of allied health professions, Firestone (2010) chose to deploy the MLQ across a variety of health profession programs and institutions. Firestone identified institutions that were designated within the Carnegie Classification of Institutions of Higher Learning as offering an undergraduate and/or graduate degree in the allied health professions. These professions were identified using a directory published by the American Medical Association. Finally, the author defined the Northeast United States as the area to be sampled. These states included Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Washington, DC.

Using these parameters, 477 chairs were identified spanning 36 separate health professions. Of this group, 179 chairs initially agreed to participate in the study; however, after eliminating programs where the chair did not complete the MLQ or withdrew from the study, a final group of 138 chairs participated for an overall response rate of 29%. This group of 138 chairs represented 21 different health professions. Individual profession data was not broken out, and all responses were presented as an aggregate. The professions included in this group were athletic training, audiology/speech pathology, clinical laboratory sciences, counseling, cytotechnology, dental hygiene, diagnostic medical sonography, dietetics/nutrition, occupational therapy, perfusion, physical therapy, physician assistant, respiratory therapy, and therapeutic recreation.

Table 2.10 presents the mean data for each cohort surveyed and then compares allied health chairpersons' self-perceptions to perceptions of faculty in those same allied health programs. Reviewing the mean scores for individual leadership factors for chairpersons presents a pattern similar to that presented by Aaron (2005) and expected by Bass and Avolio (1997), where transformational factors are used more frequently than transactional factors and laissez-faire leadership is used least. However, when chair perceptions were compared to faculty perceptions of the chair, differences exist. These differences were significant in the transformational behaviors of inspirational motivation ($p < 0.05$), idealized influence (behavior) and intellectual stimulation ($p < 0.01$), and individualized consideration ($p < 0.001$). In all of the transformational leadership attributes, the chairpersons' mean scores were higher than scores from faculty. There were no statistically significant differences between transactional leadership behaviors or laissez-faire behaviors.

Table 2.10
*Mean Scores for Leadership Factors and Organizational Outcomes Among Allied Health Education Programs (Firestone, 2010)*

| | Chairpersons ($n$ = 138) | | Faculty ($n$ = 327) | | $p$ |
|---|---|---|---|---|---|
| Factor | M | SD | M | SD | value |
| Idealized influence (attributed) | 3.13 | 0.59 | 3.07 | 0.88 | 0.418 |
| Idealized influence (behavior) | 3.24 | 0.52 | 3.05 | 0.83 | 0.004 |
| Inspirational motivation | 3.28 | 0.52 | 3.15 | 0.88 | 0.037 |
| Intellectual stimulation | 3.13 | 0.47 | 2.93 | 0.96 | 0.003 |
| Individualized consideration | 3.41 | 0.42 | 2.98 | 1.01 | 0.000 |
| Contingent reward | 3.09 | 0.58 | 2.96 | 0.98 | 0.088 |
| Management by exception (active) | 1.59 | 0.77 | 1.76 | 1.07 | 0.059 |
| Management by exception (passive) | 0.89 | 0.64 | 0.96 | 0.91 | 0.331 |
| Laissez-Faire | 0.49 | 0.50 | 0.59 | 0.75 | 0.087 |
| Organizational Outcomes | | | | | |
| Effectiveness | 3.29 | 0.50 | 3.11 | 0.95 | 0.011 |
| Extra effort | 2.84 | 0.59 | 2.75 | 1.16 | 0.270 |
| Satisfaction | 3.24 | 0.50 | 3.05 | 1.05 | 0.009 |

In the same study, the author looked for correlations between leadership attributes and organizational outcomes for both program directors and faculty. For program directors there was a statistically significant correlation ($p < 0.001$) between the transformational leadership factors of idealized influence (attributed), idealized influence (behavior), inspirational motivation, intellectual stimulation, individualized consideration, and the transactional factor of contingent reward with the organizational outcomes of effectiveness and extra effort. There was also a significant correlation with the outcome of satisfaction, but only with the transformational factors. In addition, program director data showed statistically significant negative correlations between management by exception (passive) and extra effort ($p < 0.01$) and between laissez-faire and effectiveness ($p < 0.05$). Significant correlations for leadership attributes and leadership outcomes for faculty responders existed between the transformational leadership factors of idealized influence (attributed), idealized influence (behavior), inspirational motivation, intellectual stimulation, individualized consideration, and the

transactional factor of contingent reward with all of the outcome measures—effectiveness, extra effort, and satisfaction. Statistically negative correlations existed for faculty between the factors of management by exception (passive) and laissez-faire with all three organizational outcomes.

Although not in the published work above, Firestone (2007) provided some discipline-specific data regarding some of the leadership attributes and organizational outcomes for PAs. As stated above, 138 program directors across 28 disciplines agreed to participate in this study, and most of this data was presented in aggregate form. However, some information specific to the PA cohort can be gleaned from this dissertation. In breaking out the PA cohort, 38 PA program directors were invited, and 12 chose to participate. Also, 56 PA faculty were invited, and 35 completed the MLQ survey. A further breakdown of the faculty to chair responses lists nine PA program directors with one to three faculty responses and three program directors with four to six responses. Although no optimal size group is delineated for the MLQ-Rater group, a minimum of three raters is recommended (Avolio & Bass, 2004, p. 13). Although incomplete, Table 2.11 presents the mean data for several of the transformational leadership attributes and two of the organizational outcomes as perceived by PA program directors and PA faculty.

Table 2.11
*Comparison of Transformational Leadership Attributes and Outcomes in PA Education (Firestone, 2007)*

| | Program director | | | Faculty | | |
|---|---|---|---|---|---|---|
| Factor | M | SD | *n* | M | SD | *n* |
| Inspirational motivation | 3.42 | 0.40 | 12 | 3.26 | 0.85 | 35 |
| Intellectual stimulation | 3.29 | 0.38 | 12 | 3.01 | 0.86 | 35 |
| Individualized consideration | 3.38 | 0.43 | 12 | 2.89 | 1.0 | 35 |
| Idealized influence (behavior) | 3.31 | 0.50 | 12 | 3.0 | .80 | 35 |
| Organizational outcomes | | | | | | |
| Effectiveness | 3.46 | 0.44 | 12 | 3.26 | 1.00 | 35 |
| Satisfaction | 3.38 | 0.27 | 12 | 3.23 | 0.16 | 35 |

**Additional Observations**

Response data specific to MLQ results and organizational outcomes for both program directors and faculty have been presented across a variety of allied health disciplines. Only one study (Firestone, 2007) cast a net wide enough to begin to capture some data about full-range leadership and leadership outcomes in PA program directors and faculty. In addition to the straightforward correlations between leadership behaviors and leadership outcomes already presented, some of the studies (Aaron, 2005; Firestone, 2007; Shaver, 2003; Snodgrass & Shachar, 2008; Zuest, 2003) utilized additional demographic data or measurement instruments in an effort to provide additional correlations to leadership attributes. These additional correlations include program director satisfaction with managerial skills and leadership attributes (Aaron, 2005) and relationships between personal and program demographic data and self-perceived leadership attributes (Firestone, 2007; Shaver, 2003; Snodgrass & Shachar, 2008; Zuest, 2003).

Aaron (2005) developed a leadership matrix instrument that identified program directors' satisfaction with their leadership skills as related to the different responsibilities associated with the daily management of their department. Program directors were asked to rate their satisfaction with a predefined list of leadership skills on a scale of 1 to 4, with 1 corresponding to *low satisfaction* and 4 corresponding to *very satisfied*. A regression analysis was performed with the variables from this survey and the leadership attributes of the MLQ. All of the factors associated with transformational leadership and the transactional attribute of contingent reward displayed a significant relationship with program director satisfaction and departmental governance, instruction,

faculty affairs, student affairs, external communication, professional development, and budget and resources. The only responsibility without a significant relationship was office management. On the other end of the spectrum, the passive/avoidant attribute of laissez-faire leadership had a significant negative relationship with the program director's level of satisfaction with all of the factors except professional development.

In considering demographic data associated with the program director, the remainder of the studies (Firestone, 2007; Shaver, 2003; Snodgrass & Shachar, 2008; Zuest, 2003) rarely found significant relationships with the leadership behaviors associated with the FRLT. Shaver (2003) was unable to demonstrate any significant relationships between the program directors' leadership style and the variables of the directors' age, number of years in the current position, highest academic degree earned, the discipline associated with the highest degree earned, or leadership training. Similarly, Snodgrass and Shachar (2008) found no significant relationships between age, gender of rater, gender of leader, highest degree earned, current faculty rank, current faculty appointment, length of faculty employment, total years of teaching graduate school, and number of years working for the director who was rated. Although the findings of Snodgrass and Shachar found no differences in gender roles in FRLT, other studies have suggested gender differences. A meta-analysis by Eagly, Johannesen-Schmidt, and van Engen (2003) commented:

> Female leaders were more transformational than male leaders and are also engaged in more of the contingent reward behaviors that are a component of transactional leadership. Male leaders were generally more likely to manifest the other aspects of transactional leadership (active and passive management by exception) and laissez-faire leadership. (p. 569)

Zuest (2003) also found no significant relationships between leadership attributes and four different measures of leadership experience (years served as a faculty member in an athletic training program, years served as a program director at the current institution, years served as a program director at any institution, or years served as an administrator in a higher education institution). Firestone (2007) was able to show a significant correlation for program director age and the use of the transformational attributes of idealized influence (behavior), inspirational motivation, intellectual stimulation, individualized consideration, and the organizational outcomes of effectiveness and satisfaction. No significant relationships were found with the variables of academic rank, ethnicity, gender, highest degree earned, tenure status, and either years at the institution or years in the position of chair.

## Chapter Summary

Many leadership theories have evolved over the past century in an effort to identify the characteristics of a leader. Leadership is fundamental when considering the responsibilities of the department chair. The department chair is likely one of the most important positions within the organizational structure of higher education. It is also the most likely to be filled by someone without the skills necessary to be successful. The literature presented in this chapter has provided background on leadership theory development and a context for the FRLT. To date, little leadership research has been done in the allied health sciences and even less has been conducted in PA education. It is essential that the leadership needs of PA educational programs be addressed in order to prepare current and future program directors for the rapidly changing education and health care environments. The current study filled a void in the literature by examining

current perceptions of the PA program director leadership role from the perspectives of program directors, administrators, faculty, and staff, as well as the organizational outcomes of extra effort, effectiveness, and satisfaction with the leadership. The next chapter discusses the methodology for this study.

# CHAPTER 3:

# METHODOLOGY

The purpose of this study was to assess the leadership attributes of physician assistant (PA) program directors in the context of the full-range leadership theory (FRLT) as described by Avolio and Bass (2004). This study addressed one research question with four subquestions:

RQ: How do faculty, administrative staff, the program director, and the program director's direct supervisor perceive the PA program director's full-range leadership attributes as described by Avolio and Bass (2004) in public and private institutions that confer a master's-level graduate degree?

1. What are the leadership behaviors of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors?
2. What are the differences in perceptions of leadership behaviors between PA program directors and their faculty, staff, and direct supervisors?
3. What are the leadership outcomes of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors?
4. What are the differences in leadership outcomes of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors?

To answer the research question, data were collected directly from the program director (self-rater) as well as from faculty, staff, and direct supervisors (other-raters) associated with these programs using the Multifactor Leadership Questionnaire (MLQ) Form 5X-Short (Avolio & Bass, 2004). This survey instrument allowed for the

quantitative measurement of PA program directors' FRLT factors from these different perspectives.

This chapter presents the research design, sampling process, survey instrument, data collection procedures, and analysis methods applied to the data.

## Research Design

Research methods are strategies that are used to examine research questions. However, the strategy used to address the research questions incorporates more than simply which research tool is utilized to collect data. The methods of inquiry are extensions of the underlying paradigm that supports the research. This study employed a postpositivist paradigm, applying a quantitative, survey-based methodology with a theoretical framework of FRLT.

### Paradigm of Inquiry: Postpositivism

The core paradigm that was used in the development of this study is postpositivism (Creswell, 2003; Phillips & Burbules, 2000). Postpositive knowledge claims, or postpositivism, follow a perspective of inquiry that challenges traditional notions of the *absolute truth* of knowledge. This traditional absolute truth was born from an earlier paradigm known as positivism. These two paradigms, positivism and postpositivism, are related, and understanding the background of one provides a context for the other. This section describes these paradigms and their interconnected relationship, distinctions between the two, and finally justification for the use of postpositivism in this study.

Both positivism and postpositivism are considered scientific methods of inquiry. A hypothesis is considered, research questions are drawn up, and data are collected to test the hypothesis. The knowledge claims (Creswell, 2003) of positivism and postpositivism have unique sets of assumptions used by researchers to describe how the researcher will learn and what the researcher will learn. Positivism is a method of inquiry that assumes the existence of an objective reality (Clark, 1998), a reality that is independent of the researcher. It assumes that factual sciences are a "positive" knowledge that replaces "religion, metaphysics, and philosophical speculation as valid knowledge" (Bentz & Shapiro, 1998, p. 27). In contrast, postpositivism refers to a knowledge claim that arose after positivism, "recognizing that we cannot be positive about our claims of knowledge when studying the behavior and actions of humans" (Creswell, 2003, p. 7). Postpositivism reflects a way of thinking in which causes influence outcomes. "Postpositivism is a nonfoundationalist approach to human knowledge that rejects the view that knowledge is erected on absolutely secure foundations," and "the postpositivist sees knowledge as conjectural" (Phillips & Burbules, 2000, p. 29). A researcher utilizing a postpositivist approach to research uses "careful observation and measurement of the objective reality that exists out there in the world" (Creswell, 2003, p. 7).

Several criteria were met that allowed the incorporation of a postpositivist paradigm for this study. Postpositive research is done in the scientific method. The researcher "begins with a theory, collects data that either supports or refutes the theory, and then makes necessary revisions before additional tests are conducted" (Creswell, 2003, p. 7). The researcher doing postpositive research makes five assumptions:

1. Knowledge is conjectural and absolute truth can never be found; thus, evidence established in research is always imperfect and fallible.

2. Research is the process of making claims and then refining or abandoning some of them for other claims more strongly warranted.
3. Data, evidence, and rational considerations shape knowledge. In practice, the researcher collects information on instruments based on measures completed by the participants or observations recorded by the researcher.
4. Research seeks to develop relevant true statements, ones that can serve to explain the situation that is of concern or describe the causal relationships of interest.
5. Being objective is an essential aspect of competent inquiry, and researchers must examine methods and conclusions for bias. (Creswell, 2003, pp. 7-8)

This study relied on the direct self-reporting of PA program directors as well as the reporting of perceptions by program faculty, administrative staff, and direct supervisors. In collecting data associated with perceptions of human behavior, this study relied on judgments about how the program director should act or behave. These perceptions cannot be considered absolute truths. For both of these reasons, this study assessed leadership attributes from a postpositivist perspective.

**Quantitative, Survey-Based Approach**

For this study, a quantitative, survey-based approach was used. Survey methodology allows for the "sampling of a small proportion of the population to estimate the views of many" (Dillman, Smyth, & Christian, 2009, p. 1) and has changed over time. Survey research may be conducted by mail, telephone, a live interview, or, more recently, the Internet (Czaja & Blair, 2005); "no one best survey method" (p. 33) exists. Each of these methods presents its own set of challenges, strengths, and weaknesses. Choosing a method of deployment requires consideration of aspects unique to each. The researcher juggles aspects of cost, the window for data collection, the length and complexity of the questionnaire, the sensitivity of the survey questions, participant time involvement, the geographic distribution of eligible participants, response rates, and perceived control by

the respondent, to name a few (Dillman et al., 2009; Czaja & Blair, 2005). Metrics exist (Czaja & Blair, 2005) to assist the researcher in choosing methods that best meet the goal of the study.

The advantages and disadvantages associated with survey research are well documented and have changed over the decades as tools to collect people's opinions and behaviors have changed (Alreck & Settle, 2004; Dillman et al., 2009). The main advantages of survey research are that it (1) provides an inexpensive method of gathering data and (2) allows for a standardized measuring instrument that is given to all eligible participants in the same way (Sapsford, 2007). Two main drawbacks are respondent interpretation and proclivity for low response rates (p. 109).

In this study, data regarding the frequency with which PA program directors exhibit leadership attributes were collected through the MLQ Form 5X-Short given to two groups: self-raters (the program directors) and other-raters (those associated with the program directors' academic unit, including their direct supervisor, faculty, and administrative staff). A web-based survey methodology was used, as described in detail later in the chapter.

**Theoretical Model: Full-Range Leadership Theory**

The underlying theory used for this study was the FRLT as described by Avolio and Bass (1991). In using this full-range model, a continuum of leadership factors was evaluated, from factors of transformational leadership on one end of the scale to passive/avoidant leadership at the other end of the scale. The MLQ evaluates nine unique factors that measure the behaviors and attitudes from the primary themes of transformational, transactional, and passive/avoidant leadership (Table 3.1). The

transformational leadership theme includes the components of idealized influence (attributes and behaviors), inspirational motivation, intellectual stimulation, and individualized consideration. The transactional leadership theme includes the components of contingent reward and management by exception (active). Lastly, the passive/avoidant theme includes the components of management by exception (passive) and laissez-faire.

Table 3.1
*Themes of Full-Range Leadership and Their Definitions*

| Theme | Definition | |
|---|---|---|
| Transformational | A style in which a leader influences and increases associates' awareness to strive for higher levels of potential | |
| | Idealized influence (attributed) | A leader who is admired, respected, trusted, and perceived by associates as being confident and ethical |
| | Idealized influence (behavior) | A leader who is admired, respected, and trusted and whose actions are perceived by associates as being centered on values, beliefs, and a sense of mission |
| | Inspirational motivation | A leader's motivation of followers by providing meaning to their work |
| | Intellectual stimulation | A leader's action that stimulates followers' effort to be innovative and creative by questioning assumptions |
| | Individual consideration | A leader who pays attention to each individual's need for achievement and growth |
| Transactional | A style based on an exchange process rooted in contractual obligations | |
| | Contingent reward | A leader who clarifies expectations and provides recognition when goals are achieved |
| | Management by exception (active) | A leader who is actively vigilant and provides close monitoring to ensure that standards are met |
| Passive/avoidant | A style where the leader is more passive or reactive to situations | |
| | Management-by-exception (passive) | A leader who only intervenes after mistakes occur |
| | Laissez-faire | The avoidance or absence of leadership |

*Note.* Adapted from *Developing Potential Across a Full Range of Leadership,* by B. J. Avolio and B. M. Bass, 2002, Mahwah, NJ: Lawrence Erlbaum Associates.

Studies suggest that leaders use a combination of transformational and transactional leadership styles in a complementary approach (Bass, 1985; Lowe et al., 1996). Transformational leadership behaviors are "complementary to the transactional

style and likely to be ineffective in the total absence of a transactional relationship between leader and subordinate" (Lowe et al., 1996, p. 387). Lowe et al. (1996) continued by stating that "the skillful transactional leader is likely to be effective in stable, predictable environments," whereas the transformational leader "seeks new ways of working . . . [that] are less likely to support the status quo" (p. 387). Avolio and Bass (2004) also described the relationship as follows: "Transformational leadership does not replace transactional leadership, it augments transactional leadership in achieving the goals of the leader, associate, group, and organization" (p. 21). Transactional leadership provides a starting point for effective leadership, but when augmenting transactional leadership with transformational leadership, "a greater amount of Extra Effort, Effectiveness, and Satisfaction is possible from employees" (Avolio & Bass, 2004, p. 22).

## Research Population and Sample

Public and private institutions were identified through the listing of accredited programs in good standing available from the Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA) website in July 2011, when the initial proposal for this study was approved. At that time, there were 159 accredited PA programs in the United States (ARC-PA, 2011a). The institutions that sponsor these programs range from community colleges to doctoral research universities. Considering the variety of institutions that offer these programs, the final credential offered by any given institution may range from a certificate to a master's degree. Since the Physician Assistant Education Association (PAEA, 2010b) "endorses the master's degree as the

entry-level and terminal degree of the profession," only public and private institutions that offered this degree option were included in this study.

Of the 159 PA programs in the continuing accreditation category as of March 2011, 127 met the inclusion criteria for this study; they are listed in Appendix A. The program offered by the U.S. military, known as the Interservice program, was excluded since it was not offered through a traditional public or private institution of higher education. An additional 32 programs were excluded because they (a) did not offer a graduate degree, (b) held a provisional accreditation status and had not graduated any student cohort since beginning operation, (c) were omitted in error, or (d) were operating under a probationary accreditation at the time this study was conducted. Programs with provisional accreditation are fully accredited programs that have not yet graduated their first class of students. Once these programs graduate a cohort of students, a follow-up site visit is performed by the accrediting agency. A successful follow-up visit to a program by an ARC-PA representative team removes the provisional designation and designates the number of years a program will operate until the next accreditation site visit.

Individual contacts for all of the eligible institutions were provided by the membership office of the PAEA. In order to access the membership database, a request was made to the director of data and research at PAEA. This request was then forwarded to members of the PAEA Research Institute Committee, which comprises faculty members of accredited member programs. Due to the sensitive nature of the information to be collected, committee members requested a letter from Mind Garden, Inc., the third-party administrator of the survey, stating that mechanisms were in place to suppress and destroy any identifying information prior to its release to the researcher. An email

communication was obtained from Mind Garden, Inc. to this effect, and written approval from PAEA for database access was also obtained (Appendix F).

The PAEA database is a dynamic database that changes throughout the year; as with most databases, it is as current as the program director is diligent with updating information. No association policy requires the program director to keep this information current. The association asks program directors to update this information before annual association projects, and the database tends to be most current during November of each year (D. Donovan, personal communication, August 22, 2011). This database identified the program director and the individuals that report to the director (i.e., medical director, faculty, and staff). The program director's direct supervisor is not always a part of this database and was requested of each program director in the initial email contact.

The number of individuals associated with each program varies. The ARC-PA (2010) mandates minimum standards of staffing for programs; this includes "the program director, medical director and at least three FTE principal faculty" (p. 6) and one full-time position "to provide administrative support for the program" (p. 9). This is the common grouping for most new programs; however, as programs mature and student cohorts increase in number, there is typically, but not always, an increase in these resources. Avolio and Bass (2004) made no distinctions about the participation from different organizational levels and only made a general recommendation that individuals from the different groups associated with the leader participate (p. 13). Other than the exception of "a minimum of three raters, no specific optimal size for the rater group can be suggested for evaluating a single leader" (p. 13), and no other guidelines for deployment of the survey were offered by the authors. The minimum of three raters is intended to protect

participants from being singled out by any leader. For this study, a response rate of 50% from other-raters was required for an institution's response to be included in this study.

**Sample Size**

In order to generalize the results about this population, an adequate survey sample size was determined based on two factors. The first factor was the degree of accuracy required for the sample, based on considerations related to sampling error and confidence intervals (de Vaus, 2002). The second factor was the extent to which variation exists in the population (de Vaus, 2002, p. 80).

Dillman et al. (2009) provided a formula that can be used to determine the sample size needed to make generalizations about the population (Equation 1):

$$N_s = \frac{(Np)(p)(1-p)}{(Np-1)\left(\frac{B}{C}\right)^2 + (p)(1-p)} \quad (1)$$

This formula (Dillman et al., 2009, p. 56) takes into account the different variables that must be considered—the margin of error ($B$), confidence level ($C$), and population split ($p$)—to determine the sample size ($N_S$) necessary for the desired level of precision. This study accepted the parameters for a margin of error of ±5%, a confidence level of 95%, and a population split of 80/20. Inserting the variables in the formula, the sample size necessary to generalize the data was 84 graduate academic programs (Equation 2):

$$N_s = \frac{(127)(.8)(.2)}{(126)\left(\frac{.05}{1.96}\right)^2 + (.8)(.2)} \quad (2)$$

If the final sample size did not meet this 84 program minimum to generalize the results, inferential statistics would be used to identify a subset representative of the population.

## Instrumentation

The current version of the MLQ, 5X, is available in two formats, one short and one long. The long form (5X-Long) is a 63-item survey intended to be used for training and development purposes. The short form (5X-Short) is a 45-item survey designed to be used for research purposes (Avolio & Bass, 2004) and is the version that was utilized in this study. Within the 45 questions of the MLQ, multiple questions are assigned to each of the leadership themes to ascertain the frequency with which leaders exhibit full-range leadership. In the first 36 questions, there are four questions to address each of the nine factors. The final nine questions address the leadership outcomes of extra effort, effectiveness and satisfaction with the leader. The question numbers and their aligned factors are listed in Table 3.2.

Table 3.2
*Full-Range Leadership Factors and Associated Questions from the Multifactor Leadership Questionnaire*

| Factors | Questions |
|---|---|
| Idealized influence (attributed) | 10, 18, 21, 25 |
| Idealized influence (behavior) | 6, 14, 23, 34 |
| Inspirational motivation | 9, 13, 26, 36 |
| Intellectual stimulation | 2, 8, 30, 32 |
| Individualized consideration | 15, 19, 29, 31 |
| Contingent reward | 1, 11, 16, 35 |
| Management by exception (active) | 4, 22, 24, 27 |
| Management by exception (passive) | 3, 12, 17, 20 |
| Laissez-faire | 5, 7, 28, 33 |
| Effectiveness | 37, 40, 43, 45 |
| Satisfaction | 38, 41 |
| Extra effort | 39, 42, 44 |

Respondents are asked to rate statements on a 5-point scale: 0 *(Not at all),* 1 *(Once in a while),* 2 *(Sometimes),* 3 *(Fairly often),* and 4 *(Frequently, if not always).* This 5-point scale has two unique aspects. First, each item response ranges from 0 to 4, and second, it "bears a magnitude estimation based ratio of 4:3:2:1:0" (Avolio & Bass, 2004, p. 15). As these responses contain "the existence of an arbitrary zero point and an arbitrary unit of measurement that is constant throughout the scale" (Knapp, 1990, p. 121), these response scales should be considered interval. Whether a scale is ordinal or interval and how this determination drives the statistical analysis has been frequently discussed (Jamieson, 2004; Knapp, 1990; Stevens, 1946). There are "no agreed-upon rules for determining whether a particular scale is ordinal, less than ordinal or more than ordinal" (Knapp, 1990, p. 121), but early recognition of this difference is important as it allows the researcher to consider the treatment of data and whether to use nonparametric or parametric statistics during analysis. Although these differences exist, the use of nonparametric analysis procedures with ordinal data is commonly accepted (Jamieson, 2004; Knapp, 1990).

This study utilized both the MLQ's Leader Form, for administrative leaders to complete, and the Rater Form, for others associated with the unit leader to complete. The questions on the survey were personalized for the leader, with all of the questions beginning with "I." Sample questions from the Self-Rater Form are as follows: "I provide others with assistance in exchange for their efforts," "I re-examine critical assumptions to question whether they are appropriate," "I fail to interfere until problems become serious," "I display a sense of power and confidence," "I heighten others' desire to succeed," and "I work with others in a satisfactory way." Sample questions from the

Other-Rater form are as follows: the person I am rating "is absent when needed," "seeks differing perspectives when solving problems," "talks optimistically about the future," "considers me as having different needs, abilities, and aspirations from others," "uses methods of leadership that are satisfying," "gets me to do more than I expected to do," and "is effective in representing me to higher authority."[1] No modifications were made to the MLQ survey.

Since the MLQ solicits no demographic data, four demographic data questions were added to the beginning of the survey addressing gender, race/ethnicity, age, and years in current position. A mean score for each leadership factor was calculated for each respondent. These means provided aggregate values for the different subgroups within the target population.

**Validity and Reliability of the MLQ**

The original survey that eventually became known as the MLQ was first utilized by Bass (1985) to operationalize the concepts of transformational leadership as described by Burns (1978). Early versions of the MLQ were faulted for mixing "behaviors, impact and outcomes within a single leadership scale" (p. 46), but through an improvement process described by the authors (Avolio & Bass, 2004, p. 48), these faults were addressed. Bass indicated that the questionnaire "underwent continuing official revisions and special revisions from MLQ 1 to MLQ 11 and countless unofficial ones" (Bass, 1995, p. 472), as reviewed elsewhere (Avolio, Bass, & Jung, 1999; Bass & Avolio, 1990b, 1993a; Yammarino, Spangler, & Bass, 1993). The revisions to the MLQ

[1] The complete Self-Rater Form and Other-Rater Form could not be reprinted because of copyright restrictions.

demonstrate a progression in the measurement of FRLT; however, "such modifications make it more difficult to compare the results to previous research" (Tejeda et al., 2001, p. 35).

While the MLQ appears to dominate research on transformational and transactional leadership (Judge & Piccolo, 2004) and the current version of the MLQ, Form 5X, is regarded as "the most popular instrument in measuring transformational leadership" (Antonakis & House, 2002, p. 18), it is not without its critiques. Although reliabilities for the items in each leadership attribute measured by the MLQ range from .74 to .94 (Avolio & Bass, 2004, p. 48), there is concern as to whether the data the MLQ collects align with the constructs of the theory. Although there is little debate about FRLT at the theoretical level, there is an increasing recognition of the importance of ensuring alignment between theory and data. This concern has been well documented (Antonakis et al., 2003; Avolio & Bass, 2004; Schriesheim, Wu, & Scandura, 2009; Tejeda et al., 2001).

The current nine-factor model of the MLQ (Form 5X-Short) was evaluated using available U.S. normative data collected through the year 2000 (Antonakis et al., 2003). In this study, confirmatory factor analysis was used to evaluate each factor to determine whether "the model actually fits the data" (Antonakis et al., 2003, p. 272). The study used data sets from business organizations that were collected by the publisher of the MLQ, Mind Garden, Inc., from a 5-year period. The pooled data set represented 3,368 respondents of a contextually homogenous group. All factor loadings for this group were significant and had an average reliability of .65 across the 36 items; 17 of the 36 items had a loading of .70 or better (p. 277). The authors concluded, "Our results indicate that

the current version of the MLQ (Form 5X) is a valid and reliable instrument that can adequately measure the nine components comprising the full-range theory of leadership" (p. 286). Presenting similar data from the Mind Garden, Inc. database, Avolio and Bass (2004) reviewed studies of 4,600 leaders in the United States through 2003 using confirmatory factor analysis. Results here also demonstrated "strong and consistent support for the full range 9-factor model" (p. 79).

**Criteria for Completed Surveys and Missing Data Management**

Some degree of missing data or nonresponse by participants is common in survey research (Raaijmakers, 1999). Missing data occur when an instrument is lost or when participants skip questions or refuse to answer a question they deem sensitive (Creswell, 2008, p. 189). Missing data reduces statistical power and may cause selection bias. Kline (as cited by Tsikriktsis, 2005) listed three ways missing data can be treated: "(a) to delete them, (b) to replace (impute) the missing data with estimated scores and (c) to model the distribution of missing data and estimate them based on certain parameters." For this study, incomplete surveys were deleted in alignment with the practice of listwise deletion. Regularly employed (Davey & Savia, 2009, p. 51), listwise deletion omits surveys that do not have data for all questions. Enders (2010) stated that advantages associated with listwise deletion include convenience, elimination of the need for specialized software or statistical techniques to handle missing data, and creation of a "common set of cases for analyses" (p. 39). Disadvantages associated with this technique include "a dramatic reduction in the total sample size" and the fact that it "can dramatically reduce statistical power, especially with small to moderate samples" (p. 40). Listwise deletion procedures may result in a loss of statistical power ranging between

35% and 98% (Raaijmakers, 1999, p. 727). So as not to presume the response of participants, only completed surveys were included in this research.

## Data Collection Procedures

Data collection for this study required the integration of standard email communication, third-party database access, and third-party web-based survey deployment. Third-party database access was obtained from PAEA (Appendix F). Once approval from the George Washington University institutional review board was received, the data collection process was initiated. This section describes the process for collecting data from the identified population for this study.

A web-based deployment was used to capture MLQ survey data from program directors and others associated with that program director. Mind Garden, Inc., the independent publisher that maintains the rights to the MLQ survey, provides an online tool to create and deploy a multirater campaign. This tool, called the Transform System (Mind Garden, Inc., 2011), provides a confidential method to deploy and collect data. The system allows for customization by the researcher to add individual raters and stagger the deployment of the survey instrument and allows for the remote downloading of data. Downloaded reports identify participants only in terms of whether they are a self-rater or a rater from another category. The organizational position of other-raters associated with the program is identified at either a level above or a level below the program director's position.

The study used a tailored design method (Dillman et al., 2009), which is a process of survey design that incorporates a variety of features intended to maximize response rates regardless of how the survey is deployed (e.g., mail or electronic delivery). In

developing an upfront set of procedures, the researcher defines a way to "interact and work together to encourage all people in the sample to respond to the survey" (p. 16). Although representative of a mail-based deployment, Dillman et al. stated that "a response rate of 71%" (p. 235) has been achieved when using this method in the general population. In order to reach these types of response rates, Dillman et al. offered implementation strategies for both mail and web-based survey deployment. Although the strategies vary slightly depending on the delivery mode chosen by the researcher, several overarching principles are consistent between delivery modes and were incorporated into the process (Dillman et al., 2009, p. 297). These common principles include

1. Personalizing all participant contacts
2. Defining a process for multiple contacts
3. Providing clear instructions to mail/access the survey
4. Using incentive tokens to increase survey response

This study employed the first three strategies. Regarding the instructions, the personalized email generated by the Transform System provided a link directly to the Mind Garden, Inc. website where the multirater campaign was located. No incentives were included in this research.

**Personalized Contacts**

Personalization of contacts to survey participants provides a relatively modest increase in survey responses, ranging from 3.1% to 11.9% (Dillman et al., 2009, p. 642). This study utilized the membership database available through the PAEA, which lists more than 2,000 individuals for the 159 existing programs (D. Donovan, personal

communication, June 1, 2011). The Transform System, offered by Mind Garden, Inc., allowed for the personalization of all email contacts.

**Use of Multiple Contacts**

This study also used a technique of multiple contacts to increase response rates. However, unlike with mail-based contacts, "very little research has been done on the optimal combination of contacts to use" (Dillman et al., 2009, p. 275) in web-based survey deployment. Dillman et al. suggested the use of two follow-up emails with additional emails to participants if "significant gains" are realized with prior reminders. If follow-up emails yield few responses, then additional emails may not be warranted. Also, in a web-based survey deployment, the prenotice used in a mail campaign is deleted; however, this study used a prenotice email only in its initial contact to the program directors.

This research involved a tiered roll-out of contacting eligible participants including (1) the initial contact with the program director, (2) survey deployment to the program director and other-raters, (3) follow-up/reminder emails to all participants, and (4) thank you emails. The letters used for all participant communication appear in Appendix B.

**Initial contact with the program director**. Initiation of the contact process began with a personalized email to the program director of each eligible institution. This email, sent from the George Washington University–issued email address of the researcher, invited the program director to participate in this study and noted that his/her acceptance to participate also served as permission to contact other members of the

academic unit as listed in the PAEA database. This email also requested the name and email of the program director's direct supervisor.

**Survey deployment to the program director and other-raters**. Once the program director responded with contact information for the direct supervisor, a copy of the email was forwarded to PAEA for release of contact information for that unique academic unit. The contact information provided by PAEA was entered into the online Transform System, which sent an email that introduced the study and invited eligible participants to complete the online survey. The e-mail included a uniform resource locator (URL) link that directed participants immediately to the survey. The initial page of the survey was an informed consent page. An affirmative response on this page by the participant opened the survey. If an individual declined informed consent and participation, the Transform System utilized a skip-logic function to direct the individual out of the survey to an exit page with a thank you note for their consideration. Once a participant declined involvement, no further email invitations were sent to that individual. The informed consent text is available in Appendix C.

**Follow-up/reminder contacts**. Additional contacts to eligible participants occurred at 14-day intervals following the initial deployment of the survey. The Transform System allowed for additional survey deployments without incurring additional permission fees. A program unit was considered complete when a program director and at least 50% of the eligible participants in his or her unit responded to the survey. Although the Transform System allowed for the suppression of personal data associated with completed surveys, the researcher was able to view the number of participants who had not completed the survey. Follow-up contacts only went to those

who had not completed the survey, alleviating duplicate emails to individuals who had already completed their unique survey and to those with inactive email accounts. As the deployment of the survey to the other-raters in the department depended on the completion of the initial request by the program director, a follow-up phone call was made to the program director after a nonresponse to the second invitation.

**Thank you emails**. Once an academic unit met the requirement of 50% participation, a thank you email was sent to the program director (Appendix B).

Table 3.3 summarizes the contacts and the tiered roll out of surveys with their associated time frames.

Table 3.3
*Summary of Contacts for Data Collection*

| Group | Contact | Type | Method | Recipient | Timing |
|---|---|---|---|---|---|
| Self-raters | 1 | Prenotice | Email | All | T – 3 days |
| | 2 | Invitation with URL | Email | All | T |
| | 3 | Second invitation with URL | Email | Selected | T + 14 days |
| | 4 | Phone call | Phone | Selected | T + 28 days |
| | 5 | Third invitation with URL | Email | Selected | T + 42 days |
| | 6 | Thank you | Email | All | Varies |
| Other-raters | 1 | Invitation with URL | Email | All | T |
| | 2 | Second invitation with URL | Email | Selected | T + 14 days |
| | 3 | Third invitation with URL | Email | Selected | T + 28 days |
| | 4 | Fourth invitation with URL | Email | Selected | T + 42 days |

## Data Analysis

Data collected using the MLQ Form 5x-Short were downloaded from the secure Mind Garden, Inc. website as a .csv file and analyzed using Statistical Program for Social Sciences (SPSS) Version 20 computer software. Data from the MLQ were analyzed for two groups of respondents: the program directors who completed the Leader Form and the faculty, staff, and immediate supervisors who completed the Rater Form.

The item scores from the MLQ surveys correspond with the different factors associated with FRLT (Table 3.1). Once a final .csv document of all completed surveys was settled, the item scores were clustered together into their thematic groups. The grouped data were then averaged to form a scale score for each respondent. These scores indicated the prevalence of each theme across the FRLT. An overall profile of PA program directors and their use of transformational leadership was determined by calculating each of the item scores from respondents.

This study intended to use descriptive statistics in the analysis of data. In order to adequately describe the population, the full participation of 84 academic programs was needed. However, this number was not achieved, and inferential statistic techniques were substituted for the analysis of data. Table 3.4 describes the statistical analyses that were utilized with the corresponding research question.

Table 3.4
*Research Subquestions and Corresponding Data Analysis*

| Research subquestion | Statistical procedure(s) |
|---|---|
| 1. What are the leadership behaviors of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors? | Descriptive statistics: Frequency |
| 2. What are the differences in perceptions of leadership behaviors between PA program directors and their faculty, staff, and direct supervisors? | Independent t-test |
| 3. What are the leadership outcomes of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors? | Descriptive statistics: Frequency |
| 4. What are the differences in leadership outcomes of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors? | Independent t-test |

## Validity and Reliability

Issues associated with research design may "threaten the experiment so that the conclusions reached from the data may provide a false reading" (Creswell, 2008, p. 307)

about the outcomes of the study. Threats to both external and internal validity exist; however, the latter are considered "most severe because they can compromise an otherwise good experiment" (p. 308). In presenting experimental situations where groups are compared, Creswell (2008) described the general threats to internal validity being associated directly with the participants, how the participants are treated, and the procedures associated with the study.

Abbott and McKinney (2013) identified items specific to the validity and reliability of survey research. Reliability issues with survey research include the respondent's level of knowledge, refusal of the respondent to participate, and nonresponse. Respondent knowledge refers to the difficulty of the questions being answered. Is the question clear, with a finite number of response choices, or is the question open-ended, allowing an unlimited number of answers? A second consideration is the respondents' refusal to answer questions, as "some questions simply cannot be answered" or include questions that "people feel . . . are too personal and . . . will not answer at all" (p. 224). "Questions regarding age, income, or sexual behaviors tend to be ones that respondents are least likely to answer, either at all or honestly" (p. 224). Finally, participant nonresponse refers to the amount of nonresponse items "that respondents cannot or will not answer" (p. 224).

Issues of validity were also addressed by the authors. Does a question measure what it is supposed to measure? Survey research items may confuse "beliefs with items that measure behavior and vice versa" (p. 225). Given these issues associated with research design, the authors (Abbott & McKinney, 2013; Creswell, 2008) both agreed that the development and deployment of the survey instrument is vital to the process.

For this study, validity and reliability were improved by using a validated instrument with a limited number of answers, ensuring anonymity to participants, and using only completed surveys.

**Validity of the Self-Report Process**

In addition to issues associated with survey design, concerns regarding the validity of the self-report process also exist. Surveys are meaningful to the extent that they glean valid measures from respondents (Kleck & Roberts, 2012). "The most important threat to the validity of self-report measurements is probably social desirability bias" (p. 417), where respondents have the predisposition "to present themselves in a desirable light" (p. 417). Phillips and Clancy (1972) expanded on that notion and stated that social desirability refers to the respondent's tendency to "deny socially undesirable traits or qualities and to admit to desirable ones" (p. 923). The need for social approval is presented as a personality construct, which focuses "on people's tendency to endorse statements on the basis of their implicit social desirability" (p. 923), "where people will attempt to give responses in a favorable light" (p. 924). In this study, where PA program directors were asked to self-examine their leadership abilities, it was possible for them to overestimate their responses to survey questions.

Strategies for mitigating social desirability bias exist (Nederhof, 1985). Methods include "the use of forced-choice items, the randomized response technique, the bogus pipeline, self-administration of the questionnaire, the selection of interviewers, and the use of proxy subjects" (p. 263). Although no one technique provides a fail-safe against this bias, the MLQ instrument does incorporate the self-administration strategy. In using

this strategy, "social cues" (p. 272) associated with the presence of an interviewer are eliminated.

**Limitations Associated with Web-based Survey Methodology**

Further considerations need to be addressed when moving a traditionally paper-based methodology to a web-based methodology. As discussed, the Transform System assisted this research with email contact to participants, participant monitoring, targeted follow-up to nonrespondents, secure collection of participant data, and a reduction of potential error associated with transferring paper-based data into an electronic database. Even with these benefits, web-based survey methodology does need to be managed "somewhat differently than mail" (Dillman et al., 2009, p. 271). This section identifies some of these fundamental differences and how they were addressed in the course of this research.

Dillman et al. (2009) identified several of the limitations common to web-based survey administration. The primary underlying limitation is the use of technology that the participant may be unfamiliar with. All participants in this survey were employed in a higher education environment and had personal email addresses; it would be unlikely that any potential participant would be uncomfortable with the technology aspect associated with this survey. More problematic are bounced emails and emails captured in an institution's web server as spam (e.g., unsolicited bulk messages, emails with the word "survey" in the subject line).

**Bounced email.** Bounced email refers to an email message that gets as far as the recipient's mail server but is returned to the sender as undeliverable. To mitigate the problem of bounced emails, email addresses and names were gleaned from the PAEA

faculty directory maintained by the organization's department of membership services. This directory is updated in real time as updates are reported to the PAEA by program directors. This is also a potential limitation, as directories are only as current as program directors are vigilant. The Transform System did not provide a system to notify the researcher of bounced emails. After two failed attempts to enroll a program director by email contact, a phone call was placed to the program to confirm the PAEA directory data. If the contact data were correct, a phone call with a request to speak with the program director followed.

**Spam.** To minimize the likelihood of survey emails being identified as spam, Dillman et al. offered some guidance. Although not a complete list, some common strategies included the following:

1. Speaking with the survey vendor to determine that their Internet protocol (IP) address has not been flagged by major email providers as a source for spam.
2. Using text messages rather than HTML messages because many people, and spam filters, associate graphic use with spam.
3. Sending individual emails rather that bulk mailing options and refraining from using the "CC" or "BCC" fields.
4. Avoiding words such as *offer, free, cash, win, promo, prize,* and so on. (Dillman et al., 2009, p. 285)

The Transform System had not experienced any reports of their survey being filtered as spam (C. Smith, personal communication, May 26, 2011).

## Human Subject and Ethical Considerations

To protect all subjects, this study followed the requirements for conducting research involving human subjects as determined by the Office for Human Research Protection at The George Washington University. This office ensures compliance with federal regulations related to research. In compliance with these regulations, all participants were informed of the purpose of the study, the estimated time commitment, and the option not to participate or to withdraw from the study. The consent form (Appendix C) provided participants with the details of the study and information regarding their rights. At the bottom of the form the participant was instructed to click "I agree to participate" to confirm that he or she had read this information and agreed to voluntarily participate in the study. The participant was also provided with researcher contact information should questions or concerns arise.

All aspects of this research were kept confidential. All results were reported in terms of general findings. Participants and their respective institutions were not identified in any reports or publications of this study. All records associated with this study are in the sole possession of the principal researcher and maintained in a secure environment.

## Chapter Summary

This chapter has presented the methods used to employ a survey to examine full-range leadership in PA program directors, from the perspectives of both program directors and others associated with the educational unit. A modified version of the tailored design method (Dillman et al., 2009) and a web-based survey were employed as a strategy to maximize response rates. Ethical considerations were also discussed to ensure the privacy of all participants. Though limitations exist for any study, all efforts

were made to mitigate limitations and administer the survey in a manner to eliminate bias and provide objective results.

# CHAPTER 4:

# RESULTS

This study incorporated a nonexperimental, cross-sectional design using both descriptive and inferential statistics to assess leadership attributes of physician assistant (PA) program directors. A validated survey, the Multifactor Leadership Questionnaire (MLQ), deployed online and managed by a third-party provider, documented the responses from program directors on the Leader Form and documented responses from other members of the academic unit on the Rater Form. Data for this study were collected between April 2012 and August 2012.

This unique cohort of leaders is charged with the implementation of all aspects of PA academic programs and is responsible to a variety of stakeholders, including institutional leadership, external accrediting groups, faculty, and students. PA education programs are experiencing a robust period of growth, with 48 institutions of higher education exploring the development of new programs (ARC-PA, 2012a). This influx of new programs, combined with recent growth, will require new leadership to fill this void. This study was meant to provide insight into the leadership attributes of this cohort of academic leaders through the use of full-range leadership theory (FRLT).

The overarching research question for this study was as follows:

RQ: How do faculty, administrative staff, the program director, and the program director's direct supervisor perceive the PA program director's full-range leadership attributes as described by Avolio and Bass (2004) in public and private institutions that confer a master's-level graduate degree?

In addition to this central research question, the following subquestions were addressed:

1. What are the leadership behaviors of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors?
2. What are the differences in perceptions of leadership behaviors between PA program directors and their faculty, staff, and direct supervisors?
3. What are the leadership outcomes of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors?
4. What are the differences in leadership outcomes of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors?

This chapter is divided into seven sections. The first section of this chapter describes the sample population and the validity and reliability of the MLQ in this study. The second section presents demographic and descriptive statistics, comparing the sample population with the existing population of PA educators. Sections 3 through 6 answer the research questions associated with this study. The final section provides a summary.

## Description of the Sample

The sample for this study consisted of individuals who completed the MLQ online survey in its entirety between April 2012 and August 2012. Permission to conduct this study was obtained from 82 program directors of the 127 eligible programs, representing a response rate of 65.6%. The Leader Form was completed by 54 program directors for a response rate of 43.2%. The Rater Form, which included the perceptions of faculty, staff,

and direct supervisors, was completed by 228 individuals, for a response rate of 24.6%. A summary of the response rates can be found in Table 4.1.

Table 4.1
*Response Rate Summary*

| | Program directors | | Others | |
|---|---|---|---|---|
| | *N* | % | *N* | % |
| Eligible | 127[a] | | 1632[b] | |
| Invited | 125[c] | | 925 | |
| Accepted | 82/125 | 65.6 | NA | |
| Survey – None/no response | 2/125 | 0.02 | 450/925 | 48.6 |
| Survey – Partial | 26/125 | 20.8 | 247/925 | 26.7 |
| Survey – Complete | 54/125 | 43.2 | 228/925 | 24.6 |

[a] Includes graduate-level programs only as of July 2011.
[b] Estimate based on PAEA annual report data (2013); includes all programs, including undergraduate programs.
[c] Accounts for two programs omitted in error.

Only completed surveys were included in the analysis of results. Surveys with one or more missing response values were removed from the study using the statistical procedure of listwise deletion. Although easily implemented, listwise deletion is known to produce dramatic reductions in sample size and statistical power; however, it can also produce unbiased estimates when missing data are completely random (Enders, 2010).

## Instrumentation and Reliability Analysis

The MLQ 5X-Short was used in this study (Avolio & Bass, 2004). This 45-item survey, designed to be used for research purposes, consists of 36 items addressing the three primary leadership themes—transformational leadership, transactional leadership, and laissez-faire leadership—using subsets of questions aligned with associated factors (see Table 4.2). The remaining nine items of the survey gathered information on the leadership outcomes of extra effort, effectiveness, and satisfaction.

Table 4.2
*Full-Range Leadership Theory Themes and Associated Factors*

| Transformational | Transactional | Passive/avoidant |
|---|---|---|
| • Idealized influence (attributed)<br>• Idealized influence (behavior)<br>• Inspirational motivation<br>• Intellectual stimulation<br>• Individualized consideration | • Contingent reward<br>• Management by exception (active) | • Management by exception (passive)<br>• Laissez-faire |

The reliability of the MLQ survey instrument was assessed with Cronbach's alpha. Cronbach's coefficient alpha measures the internal consistency of items within a group—in other words, how closely related the items are in a given group. Cronbach's alpha "provides actual estimates of reliability" (Nunnally, 1978, p. 212) of the leadership constructs assessed with the MLQ. Measurement "instruments that have only modest, e.g., .70" (p. 265) Cronbach's alpha provide "a satisfactory level of reliability" (p. 264).

As shown in Table 4.3, all of the leadership factors and leadership outcomes in this study met the coefficient alpha benchmark of .70. Among the leadership factors, the highest reliability estimate was found for inspirational motivation (.887) and the lowest for management by exception (active) (.701). The final nine questions used in defining the outcomes associated these full-range leadership attributes had a reliability of .939, with a Cronbach's alpha of .869 for extra effort, .860 for effectiveness, and .853 for satisfaction. The values reported for the leadership factors in this research are consistent with those reported by the authors of the MLQ. Avolio and Bass (2004) reported that reliabilities "for each leadership factor scale ranged from .74 to .94" (p. 48).

Table 4.3
*Reliability Estimates for Each Factor* (*n* = 282)

| | Factor | Question numbers | Cronbach's alpha |
|---|---|---|---|
| Transformational leadership | Idealized influence (attributed) | 10, 18, 21, 25 | .754 |
| | Idealized influence (behavior) | 6, 14, 23, 34 | .733 |
| | Inspirational motivation | 9, 13, 26, 36 | .887 |
| | Intellectual stimulation | 2, 8, 30, 32 | .842 |
| | Individualized consideration | 15, 19, 29, 31 | .803 |
| Transactional leadership | Contingent reward | 1, 11, 16, 35 | .793 |
| | Management by exception (active) | 4, 22, 24, 27 | .701 |
| Passive/avoidant leadership | Management by exception (passive) | 3, 12, 17, 20 | .728 |
| | Laissez-faire | 5, 7, 28, 33 | .710 |
| Leadership outcomes | Extra effort | 39, 42, 44 | .869 |
| | Effectiveness | 37, 40, 43, 45 | .860 |
| | Satisfaction | 38, 41 | .853 |

## Demographics

### Program Directors

Of the 54 program director respondents, 28 (51.9%) were men and 26 (48.1%) were women. A transgender option was provided but not selected by any of the participants. Table 4.4 provides other demographic data for the program directors. Their average age was 51.5 years old, and the largest percentage of participants in this study was between the ages of 50 and 54 (12 participants, 22.2%). The majority (90.7%) of participants were White/Caucasian; 5.6% were African American/Black and 3.7% were Latino/Hispanic. Most program directors (13 participants, 24.1%) had 5 to 10 years of tenure in their current role, and 11 (20.4%) had been in their role more than 15 years.

Table 4.4
*Demographic Data for Program Director Participants* (*n* = 54)

| Category | Variable | Frequency | Percent |
|---|---|---|---|
| Age (years) | 30–34 | 2 | 3.7 |
| | 35–39 | 6 | 11.1 |
| | 40–44 | 5 | 9.3 |
| | 45–49 | 9 | 16.7 |
| | 50–54 | 12 | 22.2 |
| | 55–59 | 11 | 20.4 |
| | 60–64 | 7 | 13.0 |
| | >65 | 2 | 3.7 |
| Race/ ethnicity | Caucasian/White | 49 | 90.7 |
| | African American/Black | 3 | 5.6 |
| | Latino/Hispanic | 2 | 3.7 |
| Length in current position | <6 months | 7 | 13.0 |
| | 6 months to <1 year | 6 | 11.1 |
| | 1 year to <3 years | 8 | 14.8 |
| | 3 years to <5 years | 4 | 7.4 |
| | 5 years to <10 years | 13 | 24.1 |
| | 10 years to <15 years | 5 | 9.3 |
| | 15 years or more | 11 | 20.4 |

**Other-Raters**

Other-raters comprised those either organizationally above the program director (i.e., immediate supervisors) (*n* = 14) or organizationally below the program director (i.e., faculty, staff, medical directors) (*n* = 214). Among the 228 respondents, 83 (36.4%) were men, 144 (63.2%) were women, and a single faculty member self-identified as transgender (0.4%). The average age of respondents was 49.3 years old. As shown in Table 4.5, the largest percentage of participants completing the Rater Form was between the ages of 55 and 59 (36 participants, 15.8%); the majority of participants (88.6%) were White/Caucasian; and most other-raters (61 participants, 26.8%) had 5 to 10 years of experience in their current role.

Table 4.5
*Demographic Data for Other-Raters* (*n* = 228)

| Category | Variable | Frequency | Percent |
|---|---|---|---|
| Age | <30 | 4 | 1.8 |
| | 30–34 | 21 | 9.2 |
| | 35–39 | 21 | 9.2 |
| | 40–44 | 32 | 14.0 |
| | 45–49 | 35 | 15.4 |
| | 50–54 | 32 | 14.0 |
| | 55–59 | 36 | 15.8 |
| | 60–64 | 30 | 13.2 |
| | 65–69 | 14 | 6.1 |
| | ≥70 | 3 | 1.3 |
| Race/ ethnicity | Caucasian/White | 202 | 88.6 |
| | African American/Black | 7 | 3.1 |
| | Asian or Pacific Islander | 5 | 2.2 |
| | Latino/Hispanic | 5 | 2.2 |
| | Other | 4 | 1.8 |
| | Multiracial | 3 | 1.3 |
| | American Indian/Alaskan Native | 2 | 0.9 |
| Length of time in current position | <6 months | 10 | 4.4 |
| | 6 months to <1 year | 21 | 9.2 |
| | 1 year to <3 years | 41 | 18.0 |
| | 3 years to <5 years | 51 | 22.4 |
| | 5 years to <10 years | 61 | 26.8 |
| | 10 years to <15 years | 31 | 13.6 |
| | 15 years or more | 13 | 5.7 |

**Representativeness of Population**

A chi-square test of independence was conducted to determine if there were any statistically significant differences in gender, age, race, and longevity in current position between individuals who participated in this study and the larger PA education population as described in the *Twenty-Seventh Annual Report on Physician Assistant Educational Programs in the United States, 2010-2011* (PAEA, 2013a). As shown in Table 4.6, the data failed to show a statistically significant difference for gender or age. Therefore the study group and the general population of PA educators for these two demographic measures were similarly represented. This allowed for the results presented in this chapter to be generalized for these factors between the groups. However, there

were significant differences between the groups in terms of race and longevity in current position. In this study, white participants responded more frequently than African American, Asian, and American Indian members of the PA education community. Regarding longevity in their position, PA faculty who were less than a year in their position or between 4 and 7 years responded more frequently in this study than their peers. PA faculty with 1 to 3 years longevity or greater than 25 years longevity responded less frequently than their peers in PA education. This difference in representation of the groups may account for differences in the results. Complete demographic analysis appears in Appendix D.

Table 4.6
*Comparison of Demographic Variables of the Study Population with the Larger Physician Assistant Education Population*

| Demographic | Pearson chi-square | df | *p* |
|---|---|---|---|
| Gender | 2.91 | 1 | .088 |
| Age | 4.68 | 4 | .322 |
| Longevity in current position | 57.25 | 5 | .000 |
| Race | 9.86 | 3 | .020 |

## Research Question 1: Leadership Attributes

Research Question 1 addressed the perceptions of program directors and those associated with the program director. The Leader Form of the MLQ captured responses from the program director. The Rater Form of the MLQ captured data from the other-raters (i.e., faculty, staff, and direct supervisors). The MLQ measures nine unique factors associated with full-range leadership, grouped into the primary leadership themes of transformational, transactional, and passive/avoidant. The value for each factor is derived from a series of four questions within the MLQ survey, each question aligning with a specific factor. These questions were ranked on a 5-point scale used throughout the

MLQ: 0, *Not at all;* 1, *Once in a while;* 2, *Sometimes;* 3, *Fairly often;* and 4, *Frequently, if not always* (Avolio & Bass, 2004, p. 15). Descriptive statistics were used to report general tendencies in the data for this question.

**Transformational Leadership Factors**

Leadership factors associated with the transformational theme include idealized influence (attributed and behavior), inspirational motivation, intellectual stimulation, and individualized consideration. The first factor, idealized influence, generally describes "behavior that results in follower admiration, respect, and trust" (Tracey & Hinkin, 1998, p. 222). This factor describes two aspects of influence in which followers identify with the leader. Idealized influence (attributed) describes the influence assigned to the leader by the followers. Idealized influence (behavior) describes the behavior exhibited by the leader (e.g., whether the leader conducts himself or herself in an ethical and moral manner). Inspirational motivation addresses the ability of the leader to "articulate, in simple ways, shared goals and mutual understanding of what is right and important" (Avolio & Bass, 2004, p. 28) to the follower. Intellectual stimulation describes the leader's ability to create an environment "where followers learn to tackle and solve problems on their own by being creative" (Avolio, 2004, p. 29). Finally, the factor of individualized consideration describes the ability of the leader to "understand and share in others' concerns," to "satisfy their associates' current needs . . . and elevate those needs in an attempt to . . . develop their full potential" (p. 29).

Table 4.7 lists the mean scores for the transformational factors from both program directors and other-raters. All of the mean values reported by the program directors on the Leader Form were greater than 3, indicating a frequency of being used at least "fairly

often." The highest leader-rated scores were for inspirational motivation ($M$ = 3.46), idealized influence (behavior) ($M$ = 3.44), and individualized consideration ($M$ = 3.35). Other-raters had lower mean values for the transformational factors, from 2.79 for intellectual stimulation to 3.12 for inspirational motivation.

Table 4.7
*Mean Scores for Transformational Leadership Factors*

| | Program directors ($n$ = 54) | | Others ($n$ = 228) | |
|---|---|---|---|---|
| Factor | *M* | *SD* | *M* | *SD* |
| Idealized influence (attributed) | 3.19 | .646 | 3.04 | .933 |
| Idealized influence (behavior) | 3.44 | .664 | 2.93 | .922 |
| Inspirational motivation | 3.46 | .573 | 3.12 | .988 |
| Intellectual stimulation | 3.24 | .512 | 2.79 | 1.046 |
| Individualized consideration | 3.35 | .555 | 2.99 | .991 |
| 5 I's (composite score) | 3.28 | .492 | 2.98 | .857 |

*Note*. On a 5-point scale from 0 to 4.

These individual factors of transformational leadership are also reported as a single score. This *5 I's* composite score, referring to the first letter of each transformational factor, provides a measure of the "ideal leader" (Avolio, 1999, p. 58). Program directors reported an overall use of transformational factors as "fairly often" ($M$ = 3.28). Other-raters reported the use of transactional factors as "sometimes" ($M$ = 2.98) (Table 4.7).

**Transactional Leadership Factors**

The transactional leadership theme follows the transformational leadership theme on the full-range leadership continuum. Transactional leadership "occurs when the leader rewards or disciplines a follower depending on the adequacy of the follower's performance" (Avolio & Bass, 2002, p. 3). Two factors exist within the transactional leadership theme, ranging from most desirable to least desirable: contingent reward and

management by exception (active). Contingent reward is "found to be reasonably effective" (p. 49) and although not in the transformational cluster of factors, it is considered to correlate positively with transformational leadership. With contingent reward, the leader assigns or gets agreement on a particular task in exchange for the promise of some type of reward. The second factor, management by exception, is a corrective transaction that correlates negatively with transformational leadership and has two types. The active form involves leadership that actively monitors workers, with the intent to proactively intervene in follower performance before errors or mistakes are made.

Program directors reported their use of contingent reward to be fairly often ($M$ = 3.07) and management by exception (active) to be once in a while ($M$ = 1.80). Other-raters reported program directors' use of contingent reward to be sometimes ($M$ = 2.88) and management by exception (active) to be once in a while ($M$ = 1.87) (Table 4.8).

Table 4.8
*Mean Scores for Transactional Leadership Factors*

| | Program directors ($n$ = 54) | | Others ($n$ = 228) | |
|---|---|---|---|---|
| Factor | *M* | *SD* | *M* | *SD* |
| Contingent reward | 3.07 | .640 | 2.88 | .980 |
| Management by exception (active) | 1.80 | .711 | 1.87 | .976 |

*Note*. On a 5-point scale from 0 to 4.

**Passive/Avoidant Leadership Factors**

The passive/avoidant leadership theme is the most inactive form of leadership on the continuum and represents "the near avoidance or absence of leadership" (Avolio, 1999, p. 50). It includes two factors. The first, management by exception (passive) involves the leader waiting until an error occurs to take corrective action. The second,

laissez-faire leadership, encompasses behaviors where individuals in a group "don't care what happens, avoid taking responsibility, cannot make up their minds, and are satisfied to sit and wait for others to take the necessary initiatives" (Avolio & Bass, 2002, p. 68). This leadership factor correlates negatively with transformational leadership. Both program directors and other-raters perceived laissez-faire leadership to be used not at all, with mean values of 0.5 and 0.67, respectively; management by exception was reported to be used from not at all to infrequently, with mean values of 0.8 and 1.21, respectively (Table 4.9).

Table 4.9
*Mean Scores for Passive/Avoidant Leadership Factors*

| | Program directors ($n$ = 54) | | Others ($n$ = 228) | |
|---|---|---|---|---|
| Factor | *M* | *SD* | *M* | *SD* |
| Management by exception (passive) | 0.80 | .855 | 1.21 | .990 |
| Laissez-faire | 0.50 | .694 | 0.67 | .846 |

*Note*. On a 5-point scale from 0 to 4.

**Summary for Research Question 1**

The mean scores reported here provide a profile for both the program directors and the other-raters in PA education departments. Program directors reported using transformational behaviors fairly often ($M > 3.0$). The use of these behaviors correlates positively with transformational leadership. Program directors also reported less frequent use of behaviors that negatively correlate with transformational leadership (i.e., transactional and passive/avoidant behaviors). Other-raters reported the use of transformational behaviors being split between the categories of fairly often and sometimes and reported behaviors that correlate negatively with transformational

leadership being used once in a while or not at all. A rank ordering of the means of the factors reported by the program directors and other-raters is presented in Table 4.10.

Table 4.10
*Leadership Factors Rank Ordered by Means*

| | Program directors | | Others | |
|---|---|---|---|---|
| Rating scale | Factor | *M* | Factor | *M* |
| 3 = Fairly often | Inspirational motivation | 3.46 | Inspirational motivation | 3.12 |
| | Idealized influence (behavior) | 3.44 | Idealized influence (attributed) | 3.04 |
| | Individualized consideration | 3.35 | | |
| | Intellectual stimulation | 3.24 | | |
| | Idealized influence (attributed) | 3.19 | | |
| | Contingent reward | 3.07 | | |
| 2 = Sometimes | | | Individualized consideration | 2.99 |
| | | | Idealized influence (behavior) | 2.93 |
| | | | Contingent reward | 2.88 |
| | | | Intellectual stimulation | 2.79 |
| 1 = Once in a while | Management by exception (active) | 1.80 | Management by exception (active) | 1.87 |
| | | | Management by exception (passive) | 1.21 |
| 0 = Not at all | Management by exception (passive) | 0.80 | | |
| | Laissez-faire | 0.50 | Laissez-faire | 0.67 |

## Research Question 2: Different Perceptions of Leadership Attributes

Research Question 2 addressed the differences in perceptions about leadership behaviors between the two respondent groups: the program directors and other-raters (i.e., faculty, staff, and supervisors).

### Transformational Leadership Factors

Independent t-tests were conducted on each of the factors attributed to transformational leadership. Program directors reported higher mean values for each of

the transformational leadership factors compared to other-raters. Table 4.11 and Appendix E report the t-test results. Significant differences existed for the transformational factors of idealized influence (behaviors), inspirational motivation, intellectual stimulation, and individualized consideration between program directors and other-raters. There was no significant difference in the transformational leadership factor of idealized influence (attributed). For 5 I's, the composite of the transformational leadership factors of the full-range leadership model, there was also a significant difference between the means for the program directors ($M$ = 3.28) and other-raters ($M$ = 2.98), with program directors reporting significantly higher scores than other-raters.

Table 4.11
*Mean Score Comparisons for Transformational Leadership Factors*

| | Program directors ($n$ = 54) | | Others ($n$ = 228) | | | | |
|---|---|---|---|---|---|---|---|
| Factor | *M* | *SD* | *M* | *SD* | *t* | *df* | *p* |
| Idealized influence (attributed) | 3.19 | .646 | 3.04 | .933 | 1.12 | 280 | .264 |
| Idealized influence (behavior) | 3.44 | .664 | 2.93 | .922 | 3.87 | 280 | .000 |
| Inspirational motivation | 3.46 | .573 | 3.12 | .988 | 2.46 | 280 | .014 |
| Intellectual stimulation | 3.24 | .512 | 2.79 | 1.046 | 3.11 | 280 | .002 |
| Individualized consideration | 3.35 | .555 | 2.99 | .991 | 2.61 | 280 | .010 |
| 5 I's | 3.28 | .492 | 2.98 | .857 | 2.47 | 280 | .014 |

**Transactional Leadership Factors**

As shown in Table 4.12 and Appendix E, program directors reported more positive (i.e., either higher or lower) mean values for the two transactional leadership factors compared with the other-raters group, but the difference was not statistically significant. Program directors and other-raters reported contingent reward as a factor used fairly often, with mean values of 3.19 and 3.04, respectively. There was not a statistically significant difference between the program directors and other-raters for this factor, $t(280) = 1.38$, $p = .17$. Both groups, program directors and other-raters, reported the

negative factor of management by exception (active) being utilized once in a while, with mean values of 1.80 and 1.87, respectively. There was not a statistically significant difference between the program directors and other-raters for this factor, $t(280) = -.51$, $p < .61$.

Table 4.12
*Mean Score Comparisons for Transactional Leadership Factors*

| | Program directors ($n$ = 54) | | Others ($n$ = 228) | | | | |
|---|---|---|---|---|---|---|---|
| Factor | *M* | *SD* | *M* | *SD* | *t* | *df* | *p* |
| Contingent reward | 3.19 | .646 | 3.04 | .933 | 1.38 | 280 | .170 |
| Management by exception (active) | 1.80 | .711 | 1.87 | .976 | -.51 | 280 | .609 |

**Passive/Avoidant Leadership Factors**

Similar to the results for transactional leadership, program directors self-reported more positive values—that is, less use—for passive/avoidant leadership factors. The difference between the program director group and the other-raters group was significant for only one of the two factors: management by exception (passive) (Table 4.13 and Appendix E). Program directors reported the utilization of this factor as not at all, while other-raters reported this as a factor used once in a while, with mean values of 0.80 and 1.21, respectively; $t(280) = -2.86$, $p < .05$. Both program directors and other-raters reported laissez-faire leadership as not being used, with mean values of 0.50 and 0.67, respectively (not significant).

Table 4.13
*Mean Score Comparisons for Passive/Avoidant Leadership Factors*

| | Program directors ($n$ = 54) | | Others ($n$ = 228) | | | | |
|---|---|---|---|---|---|---|---|
| Factor | *M* | *SD* | *M* | *SD* | *t* | *df* | *p* |
| Management by exception (passive) | 0.80 | .855 | 1.21 | .990 | -2.86 | 280 | .005 |
| Laissez-faire | .50 | .694 | .67 | .846 | -1.38 | 280 | .169 |

**Summary for Research Question 2**

Significant differences between program directors existed for the mean values for the transformational factors of idealized influence (behavior), inspirational motivation, intellectual stimulation, and individualized consideration. For each of these factors, the program directors perceived their use as higher than other-raters in this study. The other factor with a significant mean difference was management by exception (passive). Unlike the factors previously identified, which correlate positively with transformational leadership, management by exception (passive) has a negative impact on transformational leadership. In this instance, other-raters perceived the use of this factor as more frequent than program directors.

## Research Question 3: Leadership Outcomes

Research Question 3 addressed outcomes associated with full-range leadership. Nine questions embedded within the MLQ survey assessed the outcomes of extra effort, effectiveness, and satisfaction. These questions were ranked on the same 5-point scale used throughout the MLQ, wherein 0 indicates *Not at all;* 1, *Once in a while;* 2, *Sometimes;* 3, *Fairly often;* and 4, *Frequently, if not always* (Avolio & Bass, 2004, p. 15).

Three questions addressed the outcome of extra effort; four questions addressed the outcome of effectiveness; and two questions addressed the outcome of satisfaction. Each outcome has been found to correlate positively with transformational leadership (Avolio & Bass, 2004). However, unlike the leadership factors, these outcomes are loosely defined. Extra effort provides an insight into the leader's ability to motivate employees to do more and heightens the desire of others to succeed. It is an outcome operationalized to statements such as "gets me to work more than I expected to do" (p.

107). Effectiveness offers an assessment of how well the leader interacts with different levels of the organization, operationalized through statements such as "is effective in representing me to higher authority" (p. 107). Finally, the outcome of satisfaction measures "how satisfied raters are with their leader's methods of working with others" (p. 98) and is operationalized through statements such as "uses methods of leadership that are satisfying" (p. 107). Descriptive statistics were used to report the mean responses for each outcome.

Table 4.14 presents the mean responses for these outcomes as perceived by the program director and the other-raters. Both groups reported outcomes of effectiveness ($M$ = 3.52 and 3.10, respectively) and satisfaction ($M$ = 3.26 and 3.11, respectively) occurring fairly often and the outcome of extra effort ($M$ = 2.91 and 2.89, respectively) as occurring sometimes.

Table 4.14
*Mean Scores for Leadership Outcomes*

| | Program directors ($n$ = 54) | | Others ($n$ = 228) | |
|---|---|---|---|---|
| Outcome | *M* | *SD* | *M* | *SD* |
| Extra effort | 2.91 | .680 | 2.89 | 1.068 |
| Effectiveness | 3.52 | .637 | 3.10 | 1.019 |
| Satisfaction | 3.26 | .757 | 3.11 | 1.071 |

*Note*. On a 5-point scale from 0 to 4.

**Summary for Research Question 3**

Program directors perceived themselves as achieving the outcome of effectiveness more frequently than the leadership outcomes of extra effort or satisfaction. Other-raters perceived program directors as achieving the outcome of satisfaction more frequently. Both groups perceive the outcome of extra effort being achieved least. A rank ordering of

the means of the outcome measures reported by the program directors and the others is presented in Table 4.15.

Table 4.15
*Leadership Outcomes Rank Ordered by Means*

| | Program directors ($n$ = 54) | | Others ($n$ = 228) | |
|---|---|---|---|---|
| Rating scale | Outcome | *M* | Outcome | *M* |
| 3 = Fairly often | Effectiveness | 3.52 | Satisfaction | 3.11 |
| | Satisfaction | 3.26 | Effectiveness | 3.10 |
| 2 = Sometimes | Extra effort | 2.91 | Extra effort | 2.89 |

## Research Question 4: Different Perceptions of Leadership Outcomes

Research Question 4 addressed the differences in perceptions between program directors and others associated with PA education regarding the leadership outcomes of extra effort, effectiveness, and satisfaction as measured by the MLQ. Independent t-tests were conducted on each of the leadership outcomes calculated by the MLQ. Program directors reported higher mean values for each of the leadership outcomes compared to the other-rater group. As shown in Table 4.16 and Appendix E, there was not a significant difference between the program directors and other-raters for the outcome of extra effort, $t(280) = 1.41$, *NS*, or satisfaction, $t(280) = .97$, *NS*. There was a significant difference between the two groups for the outcome of effectiveness, $t(280) = .2.90$, $p < .05$.

Table 4.16
*Mean Score Comparisons for Leadership Outcomes*

| | Program directors ($n$ = 54) | | Others ($n$ = 228) | | | | |
|---|---|---|---|---|---|---|---|
| Outcome | *M* | *SD* | *M* | *SD* | *t* | *df* | *p* |
| Extra effort | 2.91 | .680 | 2.89 | 1.068 | .141 | 280 | .888 |
| Effectiveness | 3.52 | .637 | 3.10 | 1.019 | 2.90 | 280 | .004 |
| Satisfaction | 3.26 | .757 | 3.11 | 1.071 | .97 | 280 | .333 |

### Summary for Research Question 4

There was a significant difference between program directors and other-raters in their perceptions regarding the outcome of effectiveness, with program directors perceiving the outcome more frequently than other-raters. Both program directors and other-raters reported the outcome of effectiveness and satisfaction fairly often, with no significant differences between the groups.

## Summary

This study revealed that PA program directors perceived their use of leadership factors associated with FRLT differently than other-raters who are also associated with PA education. Both transformational and transactional leadership factors are considered positive factors for leadership. Program directors reported more frequent use of transformational and transactional leadership factors than other-raters in their academic units, and some of the factor differences between the groups were statistically significant. For passive/avoidant factors, considered negative factors for leadership, program directors reported lower means scores than other-raters. A similar pattern was observed regarding the perceptions of the leadership outcomes. Program directors reported higher mean scores than other-raters for each of the leadership outcomes of extra effort, effectiveness, and satisfaction. The leadership outcome of effectiveness was statistically different. Discussion of these findings and their implications for research and practice is provided in chapter 5.

# CHAPTER 5:

# CONCLUSIONS AND RECOMMENDATIONS

This quantitative study examined the leadership behaviors of physician assistant (PA) education program directors. PA education programs, which began in the 1960s, have steadily increased in number over the past 45 years to the current number of 173. Accredited educational programs are the only pathway to train future PAs for a rapidly changing health care environment. The U.S. Department of Labor Bureau of Labor Statistics (2012) stated that employment for PAs is expected to increase "much faster than average," and more than 70 institutions of higher education have expressed an interest in commencing a program by 2017 (Accreditation Review Commission on Education for the Physician Assistant, Inc. [ARC-PA], 2012a). In this environment of increasing demand and growth, PAs are being culled from their natural clinical setting in medicine and placed into the setting of higher education with little preparation to meet the trials of their new role.

This change from the clinical role to the educational environment applies to PAs becoming both faculty members and the program director. Research indicates an attrition rate among PA faculty of 9% to 10% (Forister & Blessing, 2007). Reports also indicate a level of leadership turnover among program directors and the frequency with which interim program directors are called upon to step into the role (ARC-PA, 2013a). Studies such as these provide awareness about the environment a program director works in, but few studies exist about the individual who accepts this role in academic leadership. A review of the literature revealed a paucity of research on the role of the program director in PA education. One research study reported the managerial roles associated with the PA

program director (Muma et al., 2006), while another studied pathways taken by clinicians to the program director position (Lohenry, 2010), but none have focused on the leadership attributes of the program director in PA education.

The purpose of this study was to explore leadership attributes utilized by PA program directors in the context of full-range leadership theory (FRLT) (Avolio & Bass, 1991). FRLT is an extension of transformational leadership, which was initially described by Burns (1978) and refined into an early model of the theory by Bass (1985). FRLT has been used frequently in business and industry settings and has recently been applied to educational settings. The theory suggests that a leader who incorporates transformational leadership behaviors "goes beyond exchanging rewards for desired performance by developing, intellectually stimulating, and inspiring followers to transcend their own self-interests for a higher purpose, mission or vision" (Smith, Matkin, & Fritz, 2004, p. 54). The Multifactor Leadership Questionnaire (MLQ), developed specifically for the FRLT, assesses for the unique factors associated with the themes of transformational, transactional, and passive/avoidant leadership. The MLQ also assesses for perceptions of the leadership outcomes of extra effort, effectiveness, and satisfaction.

In the context of the current educational and health care environments, considering PA program director leadership is significant. Demands from internal groups (e.g., administration, students, and faculty) and external groups (e.g., accreditation and professional organizations) continue to increase, while professional development and training is limited and inconsistent. As only incomplete research on leadership attributes exists on this cohort of leaders, this study provides a reference for this cohort at this point in time of the development of the profession.

This study was designed to assess leadership attributes and outcomes in the context of FRLT for two groups, the program directors and other-raters associated with PA education academic units. The latter group included associates of the program director who were either organizationally above or below the program director and included immediate supervisors, faculty, and staff. The administration of the electronic version of the MLQ surveys was managed by a third-party vendor, MindGarden, Inc., who holds the permission rights for this assessment tool. The MLQ was deployed to 82 academic units. Descriptive statistics were reported and group mean data were compared for statistical differences. Data from the MLQ survey indicated that PA program directors reported both more frequent use of transformational leadership attributes and better leadership outcomes than other members in the academic unit attributed to them. Some of these differences between the two groups were statistically significant.

This chapter is divided into six sections. The first section summarizes the results. Sections 2 and 3 discuss these results in the context of earlier research using the MLQ and in the context of PA education. The fourth section provides a critique of the research, and the final two sections provide implications for research and practice.

## Summary of Results

During the study period of April 2012 to August 2012, 54 program directors and 228 other-raters submitted complete surveys, for response rates of 43.2% and 23.4%, respectively. The mean age of participating program directors was 51.5 years; 52% were men, and 91% were White/Caucasian. The mean age for the other-rater group was 50.8 years; 63% were women, and 89% were White/Caucasian. The study sample was representative of the overall PA education community in the demographic characteristics

of gender and age, but there were statistically significant differences in terms of race and longevity in current position.

One primary research question with four subquestions was formulated to explore leadership attributes and associated leadership outcomes as perceived by PA program directors and other-raters associated with PA educational programs. The MLQ provides a mechanism for collecting the responses of each group. A series of 36 questions assessed the frequency of transformational, transactional, and passive/avoidant leadership factors used by the program director; nine additional questions assessed leadership outcomes. Descriptive statistics were used to report perceptions by each group, and independent t-tests were performed to assess the relationships between these groups. The level of significance for the analysis of these relationships was at the .05 level. Results are summarized in Table 5.1.

## Discussion of the Results in the Context of Other Allied Health Studies Utilizing the Multifactor Leadership Questionnaire

The FRLT describes leadership across a continuum of factors. Beginning with the positive factors of transformational leadership and transactional leadership, and ending with the negative factors of passive/avoidant leadership, the FRLT posits that the use of transformational leadership factors creates "a fundamental shift in orientation" (Avolio & Bass, 2004, p. 20) for employees with positive long- and short-term implications for the organization. The survey instrument, the MLQ, also includes simple measures of outcomes frequently associated with full-range leadership. This section discusses the results and presents context for the leadership factors identified in PA program directors. Later, the discussion reviews the leadership outcomes associated with FRLT.

Table 5.1
*Summary of Results by Research Question*

| Question | Findings |
|---|---|
| 1. What are the leadership behaviors of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors? | • *Transformational:* Program directors perceived using transformational factors associated with full-range leadership fairly often. Other-raters reported only two transformational factors, inspirational motivation and idealized influence (attributed), as being used fairly often and the remaining factors being used sometimes.<br>• *Transactional:* Program directors perceived their use of contingent reward as fairly often and other-raters perceived it being used sometimes. Both groups perceived the use of management by exception (active) once in a while.<br>• *Passive/avoidant:* Both groups perceived the use of laissez-faire as not at all, but differences existed for management by exception (passive), with program managers perceiving it used not at all and other-raters as once in a while. |
| 2. What are the differences in perceptions of leadership behaviors between PA program directors and their faculty, staff, and direct supervisors? | • *Transformational:* There was a statistically significant ($p <$ .05) difference between mean scores for the use of the following transformational factors: inspirational motivation, intellectual stimulation, idealized influence (behavior), and individualized consideration. Program directors reported the use of these factors more frequently than other-raters.<br>• *Passive/avoidant:* There was a statistically significant ($p <$ .05) difference between mean scores for the use of the passive/avoidant factor of management by exception (passive). Program directors reported the use of this factor less frequently than other-raters. |
| 3. What are the leadership outcomes of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors? | • Program directors reported the outcomes of effectiveness and satisfaction occurring fairly often, with extra effort occurring sometimes. Other raters reported the same pattern for outcomes. |
| 4. What are the differences in leadership outcomes of PA program directors as perceived by PA program directors and their faculty, staff, and direct supervisors? | • There was a statistically significant ($p < .05$) difference between the mean scores for the leadership outcome of effectiveness. Program directors reported this outcome higher than other-raters. |

## Leadership Factors

This section describes the results for the leadership factors of the FRLT and examines the differences between PA program directors and other-raters associated with PA academic units. Transformational leadership factors are positive factors "that motivate associates to perform to their full potential over time, either for the good of the individual, leader, or larger collective" (Avolio & Bass, 2004, p. 18). "Transformational leadership can be thought of as a higher-order exchange process: not a simple transaction" (p. 20) that creates an elemental shift in the workplace and organizational environment for all of those associated with that leader. Transactional factors are viewed primarily as positive factors and recognize "the role and tasks required for associates to reach desired outcomes" (p. 21). A transactional leader is able to clarify the needs of the follower in exchange for a transactional reward. Finally, passive/avoidant factors are viewed as being negative towards transformational leadership in that they are reactions to problems and used only to correct behaviors.

**What program directors report.** ***Transformational factors.*** Program directors in this study reported a frequent use of transformational factors. The factors of inspirational motivation, idealized influence (behavior), idealized influence (attributed), individualized consideration, and intellectual stimulation were reported to be used fairly often, with mean values greater than 3.0. Each of these factors contributed towards an overall understanding of the transformational profile of the PA program director.

Inspirational motivation requires leaders to provide "meaning and challenge" (Avolio, 1999, p. 58) to those in their unit and to mold their expectations about what is possible in their work together. Idealized influence is initially attributed to leaders simply

due to their position in the organization; however, in the long term it is associated with behaviors that leaders exhibit in their daily performance. These behaviors include "creating in followers a sense of empowerment, showing dedication to 'the cause,' and creating a sense of a joint mission" (Avolio, 1999, p. 58) within the unit. Individualized consideration is expressed in leadership when leaders follow up with employee concerns and questions with a minimal delay or when they show concern for those within their unit. Finally, intellectual stimulation is associated with leaders' ability to question assumptions about processes associated with the way the group works, encouragement of followers to employ creative and imaginative solutions to problems, and encouragement and challenge for the reworking of previously solved problems.

In broad terms, self-perceptions reported by PA program directors differed little from data provided by Avolio and Bass (2004) in their manual on the MLQ. In that document, which presented leader data for a U.S. normative sample ($N$ = 3,375), leaders reported a higher use of transformational factors than other factors measured by the MLQ (Avolio & Bass, 2004, p. 69). When comparing PA program directors with other leaders in the allied health field, the results are similar. Athletic program directors (Zuest, 2003) rated their use of transformational factors with mean scores greater than 3.0, or "fairly often," the descriptor used by the MLQ. Radiology technician program directors (Aaron, 2005) also rated four of the five factors with a mean score greater than 3.0. Weissman (2008) reported a composite score for transformational factors greater than 3.0 for respiratory therapy program directors. Finally, Firestone (2010) presented a composite score for transformational leadership factors based on 28 allied health disciplines, and

mean values for the 28 disciplines were also reported to be greater than 3.0 for each of the transformational factors.

***Transactional factors.*** In examining transactional leadership in the context of FRLT, two factors were measured by the MLQ. The first factor, contingent reward, is also associated with good leadership practices. Contingent reward is considered a "reasonably effective" (Avolio, 1999, p. 49) construct in full-range leadership. It requires the leader to secure agreements with followers on the tasks that need to be done. In promising rewards or incentives, the leader enters a transactional agreement for the followers' satisfactorily completing or carrying out a particular task. The second factor, management by exception, is also a transactional leadership factor and is generally considered to be ineffective but may be required in certain situations. This factor is described in two different forms, the active form and the passive form. In its active form, management by exception is perceived to be transactional, as it requires the leader "to actively monitor deviances from standards . . . and to take corrective action as necessary" (Bass, 1998, p. 7). In high-risk settings (e.g., combat military operations), the active form of management by exception is perceived to be "more positive and effective by followers and leaders" (Avolio, 1999, p. 49).

PA program directors in this study reported a mean score greater than 3.0 for the factor of contingent reward. As with the transformational factors, this result is similar to that in other studies on allied health program directors (Aaron, 2005; Firestone, 2010; Zuest, 2003). PA program directors described using management by exception (active) "once in a while," which is similar to other studies on program directors (Aaron, 2005; Firestone, 2010; Zuest, 2003) and normative data (Avolio & Bass, 1991).

***Passive/avoidant factors.*** Finally, the passive/avoidant behavior factors of management by exception (passive) and laissez-faire are considered nonleadership attributes and have a negative impact on followers and the work unit. The passive form of management by exception describes a situation in which the leader does nothing, waits for mistakes to occur, and then intervenes with corrective action. Individuals who exhibit this particular factor may live by the belief "if it ain't broke, don't fix it" (Avolio & Bass, 1991, p. 98) and are willing to live with problems until something goes wrong. The final factor, laissez-faire, describes the "near avoidance or absence of leadership" (Avolio, 1999, p. 50), where the individual simply avoids getting involved or is unable to make a decision. These factors provided the lowest mean scores ($M < 1.0$) reported by PA program directors and again were similar to findings from other studies on program directors (Aaron, 2005; Firestone, 2010; Zuest, 2003) and normative data (Avolio & Bass, 1991).

***Summary for program directors.*** In this study, as in all of the allied health studies, program directors perceived using transformational factors more frequently than transactional and passive/avoidant factors. In all instances, program directors in the allied health environment reported using transformational factors "fairly often" which, as a group, was higher than U.S. normative data provided by the author of the theory.

The implications of these self-perceptions by PA program directors can be reassuring to this cohort, in that PA program directors function much like program directors in other health professions and leaders in other situations. Therefore, despite the current challenges associated with higher education and the medical field, considerations

for the professional development and training of PA program directors should be based on best practices for leadership training.

Program director perceptions alone provide only part of the leadership picture. The MLQ provides an opportunity for other members associated with the program director to offer responses to the same question set. This study's other-raters included direct supervisors, staff, and faculty.

**What other-raters report.** ***Transformational factors.*** Other-raters were split on their perceptions about PA program director use of transformational factors. PA program directors reported a consistent "fairly often" use of transformational factors, but other-raters reported transformational factors to be used either "fairly often" or "sometimes." Despite these differences within the PA education community, this finding is consistent with allied health studies of radiology technology faculty (Shaver, 2003) and the larger cross-sectional study on allied health program directors (Firestone, 2010). In addition, the responses by other-raters in this study are consistent with the U.S. normative sample (Avolio & Bass, 2004). The normative data break down other-rater response data into the groupings of those in (a) the level above the leader, (b) the same level as the leader, and (c) the level below the leader. With the exception of idealized influence (attributed), where raters above the leader reported higher means than the leader, all normative mean values across all groups were lower for the remaining transformational factors.

***Transactional factors.*** Other-raters in this study were similar to other-raters in the allied health studies (Firestone, 2010; Shaver, 2003). In these studies, as with the current study, the reported mean score for contingent reward was less than the program

directors', and the reported mean score for management by exception (active) was higher than the program directors'.

***Passive/avoidant factors.*** For the passive/avoidant factors of management by exception (passive) and laissez-faire, other-raters in this study reported higher mean values than the PA program director group. This is similar to the allied heath profession studies (Firestone, 2010; Shaver, 2003) and the normative data of Avolio and Bass (2004).

***Summary for other-raters.*** The perceptions of other-raters in this study were consistent with data reported in other studies. For leadership factors that are favorable towards transformational leadership, other-raters reported lower mean scores than the program directors. For leadership factors that are unfavorable or hinder a transformational environment, other-raters reported higher mean scores. Perceptions reported by other-raters in PA education offer a perspective different from that of PA program directors, but the differences are consistent with studies in other allied health professions and in the broader community through normative data (Avolio & Bass, 2004). These differences may be due to bias on the part of the PA program directors or to an incomplete understanding of the program director/leader role. Where this misunderstanding occurs in the established communication channels is probably less important than the realization that it actually does occur, regardless of the efforts to keep everyone informed. Sensitivity to this fact from all parties may keep situations and communications from eroding the fundamental goals of the academic unit, which could lead to leadership or faculty burnout and consequent turnover for both.

**Factor differences between program directors and other-raters.** Data from the two different groups in this study, leaders and other-raters, illustrate the differences in perceptions about use of leadership factors in PA education. In comparing the mean values between these groups, this study observed statistically significant ($p \leq .05$) differences between the groups in four of the five transformational factors: idealized influence (behavior), inspirational motivation, intellectual stimulation, and individualized consideration. Only the factor idealized influence (attributed) did not have statistically significant differences between the groups. The only other study within allied health to compare leader perceptions to other-raters was Firestone (2010). In that study, the same statistical differences were reported, and again only the factor of idealized influence (attributed) was not statistically significant. The authors of FRLT, in different iterations (Avolio, 1999; Avolio & Bass, 2002, 2004) of their explanation of this attribute, suggest that idealized influence (attributed) is a trait assigned to the leader primarily as a function of the position. Others (Amirul & Daud, 2012) stated that the use of attributed idealized influence "refers to whether or not the leader is seen as charismatic, powerful and confident and if the followers would like to be associated with him/her" (p. 194). If this is the case, attributes that get the person in the proverbial door may have less of an impact than the person's behaviors over the course of his or her leadership tenure.

The factor differences noted here between PA program directors and other-raters within their academic unit are likely to be expected; however, the fact that these differences are statistically significant should provide a point of reflection for program directors about their actions. Program directors may have the opportunity to create their academic units; more likely they will inherit them. Program directors with an

understanding of where significant differences lie within the employer/employee relationship may be able to implement strategies to mitigate these differences.

A comparison of the transactional and passive/avoidant factors between PA program directors and other-raters identified the passive/avoidant factor of management by exception (passive) being significant ($p < .05$) between the groups. In its passive form, management by exception appears after a problem or error has occurred, requiring the leader to intervene when the problem occurs. The only allied health study that compared the mean scores of leaders and other-raters (Firestone, 2010) reported no statistically significant differences in transactional or passive/avoidant factors between these groups. The results of this study suggest that PA program directors are perceived by other-raters as intervening later in processes than they believe. Program directors that exhibit this trait may be describe as aloof and uninvolved until a point where they believe they need to inject themselves in the process, only then to be perceived as unorganized or a micro-manager.

**Leadership Outcomes**

Leadership outcomes in the context of FRLT are measured with nine questions in the MLQ. The outcomes are extra effort, effectiveness, and satisfaction. In the original development of transformational leadership theory (Bass, 1985), the precursor to FRLT (Bass & Avolio, 2004), Bass created scales for the assessment of outcomes associated with transformational leadership. Bass (1985) posited that the leader who incorporates the use of transformational leadership factors augments the functioning of followers and "generates enhanced levels of subordinates' effort and performance beyond what transactional processes do" (Bycio, Hackett, & Allen, 1995, p. 470). In the initial study of

transformational leadership, Bass (1985) found that transformational leadership predicted variance in subordinates' extra effort beyond what could be accounted for by the transactional scales alone (p. 228). The nine questions unique to these outcomes were incorporated into the initial MLQ and have persisted with some modification throughout its development. These outcomes are regularly reported with MLQ data but are generally described with generic examples that may not best apply to the PA education setting.

**What program directors report.** This section describes PA program director perceptions of leadership outcomes as determined by the MLQ. PA program directors reported that the outcomes of effectiveness and satisfaction were achieved "fairly often," with mean scores greater than 3.0. The outcome of effectiveness describes the ability of the leader to interact "at different levels of the organization" (Avolio & Bass, 2004, p. 98). Descriptors associated with this outcome encompass the leader's ability to meet "others' job-related needs, . . . represent the group to higher authority, . . . meet organizational requirements, . . . lead a group" (p. 98). The outcome of satisfaction describes "how satisfied raters are with their leader's methods of working with others" (p. 98). Descriptors associated with satisfaction include the leader's use of "methods . . . that are satisfying" and the leader's ability to "work with others in a satisfying way" (p. 98).

Data collected in this study were consistent with data reported by Avolio and Bass (2004) for a U.S. normative sample ($N = 3,375$). In that sample, leaders held similar perceptions for effectiveness and satisfaction, also ranking them as occurring "fairly often" (p. 69). The only allied health–related study (Firestone, 2010) reported that program directors from 28 different disciplines also perceived these two outcomes as occurring "fairly often." As with leadership factors, PA program director perceptions

about leadership outcomes were consistent with other reported data. As these outcomes were self-reported and were not linked to any objective measure, it is difficult to determine whether they reflect what actually occurred within the academic unit or reflected expectations the program director had secondary to other institutional pressures.

The third leadership outcome, extra effort, is different than the other two outcomes. Instead of describing global outcomes, as do effectiveness and satisfaction, extra effort implies some level of increased production. In PA education, extra effort may present itself in course preparation time, mentoring a faculty member, or committing to research to present at a conference. Avolio and Bass (2004) described extra effort as the leader's ability to be motivating and getting "others to do more than they expected to do" or "increase others' willingness to try harder" (p. 98). In this study, PA program directors reported being able to enroll others in extra effort "sometimes," with a mean score of 2.91. This is similar to normative data (Avolio & Bass, 2004), where this outcome also had a mean score equivalent to "sometimes" and less than that for effectiveness and satisfaction. Although Firestone (2010) reported data on the leadership outcomes of effectiveness and satisfaction, she did not report data for extra effort.

**What other-raters report.** Other-raters in this study reported the leadership outcomes similar to the way PA program directors reported the outcomes. Other-raters reported effectiveness and satisfaction as occurring "fairly often," with mean scores greater than 3.0, and extra effort as occurring "sometimes," with a mean score of 2.89. This is similar to the means for other-raters in U.S. normative data (Avolio & Bass, 2004) and in studies of allied health professions (Firestone, 2010). In data sets reported by Avolio and Bass (2004) and Firestone (2010), other-raters also reported effectiveness and

satisfaction as occurring "fairly often," with mean scores greater than 3.0. In the same two studies (Avolio & Bass, 2004; Firestone, 2010), the mean scores for extra effort were lower than the other two outcomes and also fell into the category of "sometimes."

**Outcome differences between program directors and other-raters.** The final aspect of this study compared the mean scores for leadership outcomes between PA program directors and other-raters in PA academic units. There was no statistically significant difference ($p < .05$) between the groups in this study for the leadership outcomes of extra effort and satisfaction. There was a statistical difference ($p < .05$) between the groups for the outcome of satisfaction. These results are different from the only other study (Firestone, 2010) that reported comparisons for leadership outcomes. In that study, which included aggregate data from 28 allied health professions, effectiveness and satisfaction were statistically different between the groups ($p < .05$), but extra effort was not.

Leadership outcome data between groups is limited; where it is available it is mixed compared to this study. Specific implications for PA program directors are unclear from the data; however, it is apparent that discrepancies exist between the groups. The differences in the Firestone (2010) data and this study may be due to the variety of allied health programs in the former study. Segmenting out the Firestone data into their respective disciplines may provide another perspective. If in PA education there is a significant difference in the perceptions of effectiveness, developing more accurate descriptors of what this means specifically to PA academic units may be in order.

## Summary

The results of this study provide a basic framework for understanding the PA program director in the context of FRLT. This study also compared PA program director perceptions with those associated with this unique academic unit. Through the lens of the FRLT, PA program directors perceived their use of transformational leadership factors as frequent. In a broader context, PA program directors were not different from leaders in other allied health professions or the larger leadership community based on normative data. This is reassuring, in that it allows the incorporation of best practices from other sectors to be incorporated into professional development for PA program directors. Discrepancies in mean scores existed between the program directors and the other-raters, some of which were significant. An understanding of these differences may lead to a greater appreciation for the different roles that each group holds as they work towards a common mission of training future PAs.

## Discussion of the Results in the Specific Context of Physician Assistant Education

A review of the discussion brings into focus several findings unique to this cohort of academic leaders.

- PA program directors reported their leadership style as predominantly transformational.
- PA program directors reported leadership attributes more favorably than other members associated with their academic units.
- PA program directors reported leadership outcomes more favorably than other members associated with their academic units.

These findings provide new perspectives about the PA program director. First, this study provides a richer understanding of what leadership represents within the PA program director community in higher education. Using FRLT as the foundation for this study, PA program director leadership has been quantified into transformational, transactional, and passive/avoidant factors. Secondly, this study recognizes differences that exist between PA program directors and others associated with the PA academic unit. Differences between the groups exist in perceptions of leadership factors and leadership outcomes. The remainder of this section elaborates on these findings.

First, PA program directors reported a style of leadership that favors transformational factors in the context of FRLT. The presence of transformational leadership factors in the workplace results in unexpected levels "of follower effort and performance" (Bycio et al., 1995, p. 468) and reflects positively on the program director. Transformational leadership has "been shown to be more strongly correlated with lower turnover rates, higher research productivity, higher satisfaction and commitment, as well as greater overall organisational success" (Bass & Avolio, 1990b, p. 23), so there are benefits for a high self-perception about the use of transformational attributes.

In the context of transformational factors, PA program directors believed in their abilities to motivate associates to perform above levels they might normally perform at for the good of the department or organization. In recognizing the individual goals of each member within the academic team, program directors recognize what each associate wants from his or her work and can direct those desires into efforts that advance the overall performance of the academic unit. In using transformational behaviors, program directors move beyond simply attempting to increase performance or substitute goals;

instead, they create an environment of higher-order change (Avolio & Bass, 2004). In this new environment, higher-order changes "may involve significant changes in attitudes, beliefs, values, and needs, changes that many organizations around the world are searching for in the midst of major transformations" (Avolio & Bass, 2004, p. 19). In utilizing transformational factors, PA program directors may elevate the performance of their academic unit where it becomes more proficient in navigating the constant change that occurs in medicine and higher education, decreasing the assaults of turnover and burnout on the academic unit.

Program directors also reported the use of the transactional factor contingent reward at a level consistent with their use of transformational factors. PA educators, and subsequently leaders, come from the clinical setting. During the patient encounter, transactions are common. Patients typically present with a physical complaint, an exchange of information takes place, and the patient leaves with a plan to manage the problem. In the office setting, clinical PAs may be rewarded with incentives or bonuses that are associated with their day-to-day execution of their responsibilities. With this type of background, it is not difficult to understand the importance of contingent reward in higher education for PA faculty and leaders. However, salary is a factor that program directors likely have little control over in the higher education setting. Although salary has been noted in the *Twenty-Seventh Annual Report* as a barrier for hiring new faculty, salary dissatisfaction has not been a reported reason for established faculty to leave the education environment (PAEA, 2013a).

In considering contingent reward beyond the scope of salary, PA program directors should be observant of other areas associated with faculty turnover where they

may be able to make an impact. The *Twenty-Seventh Annual Report* (PAEA, 2013a) identified several reasons for faculty turnover. For some of these reasons listed, like retirement or geographic relocation, there is little a program director may be able to offer a faculty member. For other reasons, such as career advancement or family obligations, the program director may have some leeway to employ contingent reward. In all of these situations it is essential for the program director to have open communication with those associated with the academic unit.

Second, PA program directors reported leadership attributes more favorably than other members associated with their academic units. FRLT addresses positive transformational and transactional factors and negative passive/avoidant factors. For positive factors, PA program reported higher mean scores than those associated with their academic unit. This indicates that program directors perceive themselves as more transformational. In four of the five transformational factors, idealized influence (behavior), inspirational motivation, intellectual stimulation, and individualized consideration, the reported mean scores between the groups were statistically different. A closer look at these factors in the context of PA education provides some insight into this disconnect between the groups. Idealized influence suggests that program directors "consider the needs of others over his or her own personal needs" (Avolio & Bass, 2002, p. 2); however, others associated with the academic unit did not perceive this the same as program directors. Inspirational motivation suggests that "team spirit is aroused" and "enthusiasm and optimism is displayed" (Avolio & Bass, 2002, p. 2), yet others in the academic unit did not perceive this factor at the same levels. Intellectual stimulation suggests that "transformational leaders stimulate followers' efforts to be innovative and

creative" (Avolio & Bass, 2002, p. 2), yet again the perceptions differed. Finally, with the factor of individualized consideration, where program directors "pay special attention to each individual's need for achievement and growth by acting as a mentor" (Avolio & Bass, 2002, p. 3), others in the academic unit had a different perception.

For the negative passive/avoidant factor of management by exception (passive), a similar discrepancy existed. Whereas program directors did not believe they waited for mistakes or errors to occur before stepping in to take corrective action, others in the academic unit perceived that did occur, albeit rarely.

The underlying reasons for these perception differences between the groups are unclear. Program directors potentially come from different roles prior to their appointment in PA education. PAs in clinical practice develop transactional skills in their role during a patient encounter and at times may even view their role as transformational with patients who are able to successfully modify a behavior that promotes a positive health outcome. Physicians in clinical practice may develop similar skills but, depending on their unique practice environment, may have other responsibilities that require the development of additional skills. Physicians in a private clinical practice, in addition to patient responsibilities, are also responsible for the livelihoods of their employees and demeanor of the practice. Physicians in an academic medicine environment are responsible for their own unique clinical practice, the training of future physicians, and research. In both of these environments, although not guaranteed, the physician may have supervised one or a limited number of PAs. These varieties of experiences contribute to the self-perceptions held by PA program directors in the implementation of their daily responsibilities.

This variety of personal experience provides richness to the PA education environment but may also influence assumptions about what other members of the academic unit perceive. Although the model of PA education is traditionally based on the same general model in which physicians are trained, physician training is longer, with a different set of requirements to attain independent practice. On the other hand, practicing PAs have always been dependent providers, practicing with the supervision and within the scope of practice of the physician with whom they work.

Another reason for the discrepancies between these two groups may be a lack of understanding about the roles each group has about the other's responsibilities. This may hold true for both PA and physician leaders of academic units. PAs new to academia may not be well versed in their understanding about the higher education sector and may bring expectations from medicine into their new work setting and not understand why those expectations don't apply. Physicians may experience similar difficulty in transitioning to the new role. Expectations may also arise from different entities associated with the PA program. These entities may include the institution's administration and external accreditation agencies, including the institution's regional accreditation organization and the PA-specific accreditation agency, ARC-PA. Whatever the underlying reasons for these differences, the program director needs to be aware of them and incorporate strategies to mitigate them.

Finally, PA program directors reported leadership outcomes more favorably than other members associated with their academic units. Based on nine questions, the MLQ provides data on the leadership outcomes of effectiveness, satisfaction, and extra effort. Transformational leadership has a positive impact on the outcomes of effectiveness and

satisfaction (Avolio & Bass, 2004). This impact occurs in "both high and low level leaders" (Lowe et al., 1996, p. 420). Firestone (2010), in a study of 28 allied health professions, also described higher mean scores for the outcomes of effectiveness and satisfaction. As program directors in this study reported the frequent use of transformational factors, it is consistent that these two outcomes would rise in parallel. However, as there was a significant difference in the perceptions between the two groups for transformational factors in this study, a significant difference between groups regarding effectiveness should not come as a surprise.

In this study, means scores on the outcome effectiveness was significantly different between the program directors and the other-raters in the academic unit. This may be due to the identified relationship that is known by meta-analysis (Lowe et al., 1996); however, other reasons for the difference may exist. First, there may be a perceived concern by the PA program director. Whether that concern is due to perceived expectations by the program director from either administration or the accrediting agency, ARC-PA, is unclear. This difference may also be due to the broad generic statements asked about outcomes; more specific outcomes that are discipline specific may contribute to a better understanding about what criteria pass for each of the outcomes assessed through the MLQ.

These findings, supported by the data, provide insight into the perceptions of leadership and associated outcomes that PA program directors have about their role. The data also highlight disconnects between those who lead the academic unit and those entrusted to do the work of the unit. A better understanding of each group's perceptions

may assist in a better overall functioning in the workplace and contribute to a more stable work environment.

## Critique of the Study

The design of this study, like most educational research, contains both strengths and weaknesses that contribute to the interpretation and application of the results. This section reviews selected strengths and limitations of this study.

### Strengths of the Study

The study presented had several specific strengths. First, the study incorporated FRLT (Bass & Avolio, 2004), an accepted and well-documented model for the study of leadership behaviors in organizations, for the assessment of PA program director leadership. Second, the review of literature provided a foundation of information about previous studies conducted in health profession–related disciplines that incorporated FRLT. Third, this study benefited from the use of a validated research instrument, the MLQ. This questionnaire was available in an online version that allowed for the direct input of data by the participant, eliminating potential error in the transfer of data from paper to electronic formats. The questionnaire was also managed by a third-party supplier, MindGarden, Inc., with experience in the deployment, collection, and release of data to the researcher. Involvement by this third party allowed for the deletion of all personal respondent identifiers, ensuring anonymity to participants in the study.

Finally, this study provided a point of reference about the leadership factors associated with PA program directors. A prior study on PA program directors presented information on their managerial role (Muma et al., 2006). Another study (Firestone,

2010) presented leadership factors in a large cohort of 28 allied health–related disciplines. This study filled a gap that existed in the literature for this cohort of academic leaders. In addition to the exploration of leadership factors, this study also reported data specific to leadership outcomes in PA education. Data from this study will help in the understanding of PA program directors and provide a foundation for the development of professional training for this group of educators.

**Limitations of the Study**

Revisiting the limitations of this study is necessary for accurately interpreting the results and conclusions of this study. Limitations associated with this study involved (a) assumptions regarding the participant database used for the sample, (b) the level of participant response in completing the questionnaire, (c) the collection of only quantitative data, and (d) the ability to generalize the results of this study. This section addresses each of these limitations.

Participants for this study were gleaned from the database maintained by the Physician Assistant Education Association (PAEA). Prior to this study, it was acknowledged that this database was dynamic, with changes ongoing throughout the year and with the database being as current as the program director was diligent in forwarding personnel changes to PAEA. It was also assumed that because of other reporting requirements of PAEA, especially the annual report, the database was likely most up to date around the time of the annual conference towards the end of the year. The data collection for this study took place between April and August 2012. During the process of enrolling participants in this study, emails were occasionally returned to the researcher as undeliverable.

The level of participant engagement was less than expected. This involved two specific aspects: (a) participant response rates, and (b) unanticipated barriers. Participation in the study for program directors (Leader Form) and other-raters (Rater Form) was voluntary. Initially, it was determined that 84 program directors would need to complete the MLQ to generalize the results of this study. After the process of multiple contacts, 82 program directors agreed to participate in the study, of which only 54 submitted completed MLQ surveys. A similar pattern of nonresponse or incomplete response was observed in participants completing the MLQ Rater Form. Unanticipated barriers were also encountered during this process. Two program directors were unable to participate secondary to institutional policy that prohibited participation in any survey that was not associated with an accreditation requirement. Another institution was undergoing a leadership development program that incorporated 360-degree assessment and did not want to detract from that process. Other program directors declined participation due to time constraints associated with upcoming accreditation site visits and a recent or impending transition in their current role.

This study collected only quantitative data. The electronic version of the MLQ offered by MindGarden, Inc., allows for a limited ability to customize the survey and collect qualitative data. MindGarden, Inc., provides three standard questions with open fields for the participant to respond. The choice was made early on not to include this option, limiting the researcher to describe responses in terms of the broader theory that may or may not apply to the population of PA educators.

Finally, this study enrolled only private and public institutions that conferred a graduate degree and did not include programs that did not meet those criteria. Also, as

mentioned in the last section, the data collected from this group was insufficient in number to generalize the results across the spectrum of program directors currently serving in this role.

## Implications for Research

This study was limited to program directors conferring a graduate degree in public and private institutions between April and August 2012 and provides a foundation for additional leadership research on this unique cohort of academic leaders. To expand the body of knowledge on the leadership associated with PA program directors, there are several recommendations for further research, which include but are not limited to the following:

1. The current study could be replicated, enrolling a greater number of participants. Greater participation could be gained by adding incentives or tying completion of the MLQ survey to a larger research agenda of a professional organization. Anecdotal remarks made by program directors during the course of this research indicated the likelihood of survey fatigue by this group. Aligning this type of study closely with research objectives set forward by the PAEA or gaining endorsement of the study by the PAEA may increase participant response.
2. The current study could be replicated with the inclusion of qualitative data. Results from this study were linked to generic descriptions provided by the author of the theory. Identifying examples of leadership attributes and outcomes unique to PA education would provide for a more robust description of this cohort of leaders. MindGarden, Inc., the vendor of the MLQ survey, provides three open field questions that could collect qualitative data, but does not recommend using

those fields for research studies. However, follow-up focus groups could be used to glean this information.

3. A study could be done that involved all PA academic units, regardless of the degree conferred. Such a study could determine if the perceptions found in this study are consistent with the larger population in PA education.
4. This study collected basic demographic data for all participants, but viewed these data only in the aggregate. Perceptions could be compared between program directors new to their position (i.e., less than 5 years) and those in the position for a greater number of years to determine if differences exist in leadership attributes.
5. This study incorporated a nonexperimental, cross-sectional design, using descriptive and inferential statistics to assess leadership attributes of PA program directors at a single point in time. A longitudinal study following program directors at specific career points, and perhaps in conjunction with leadership training, would help in determining at what point in their leadership career perceptions about their abilities change.
6. This study reported both leadership attributes and outcomes associated with transformational leadership and used generic examples of each. A qualitative approach might help in defining specific examples that align with PA education.
7. This study reported other-raters (i.e., faculty, staff, and direct supervisors) as an aggregate group. Since program directors have unique responsibilities to each constituency, a focused study could be done that separated the other-raters into their constituent groups.

8. This study utilized generic leadership outcomes set by the author of the survey. This study could be repeated with a more tangible outcome set, with metrics such as faculty and staff turnover, student academic success, student feedback and satisfaction benchmarks, student board certification scores, and/or accreditation infraction citations.

## Implications for Practice

The results of this study indicate that program directors use transformational leadership factors frequently in the execution of their responsibilities, and those program directors perceive favorable outcomes with these behaviors. However, discrepancies exist between leader perceptions and the perceptions of individuals in the same academic unit in regards to leadership and outcomes. The findings may have implications for the different constituencies associated with PA education programs, including program directors, faculty, institutions of higher education, and organizations involved in the professional training and development of program directors.

### Program Directors, Faculty, and Academic Units

The findings of this study provide PA program directors with an understanding of the dimensions of transformational leadership in the context of FRLT and provide a profile for this cohort of leaders at this time in the growth of the profession. This study also provides faculty with a similar snapshot of the state of leadership at this time and provides those interested in this type of service a template of factors they might consider developing if they aspire to this particular role.

Further, the results from this study indicate that program directors frequently use transformational leadership factors as measured by the MLQ. This is consistent with what has been reported for other academic leaders; however, the differences between the groups provide new insight into the dynamic within academic units. Gmelch and Burns (1994) have likened the program director to the god in Roman mythology, Janus, who is depicted by two faces. The image, which depicts the duality of the responsibilities required of the program director, may also manifest itself in a dichotomy of understanding about the roles each contributes toward the unit's goals. Members of the academic unit can use this information to begin a dialogue about role perceptions and either evaluate or implement processes for communication and collaboration for better outcomes in effectiveness and satisfaction.

**Institutions of Higher Education**

The findings of this study may provide a foundation for administrators in higher education who are considering leadership hires for their existing or developing PA academic programs. This study provides an understanding about the full range of leadership factors and the importance placed on them by existing program directors and faculty and may be an underlying consideration for hire. Perhaps structuring interview practices around situational questions as opposed to technical expertise would assist in identifying effective leaders—not only for program director positions but also for faculty positions, as faculty members are sometimes called upon to step into the program director role in an interim status.

In addition, these findings provide insight into the group dynamic associated with PA academic units, helping administrators, who are at times removed from the daily

activities within a department, to have a better idea about those areas for which they are responsible. Finally, these findings may help guide administrators in developing institutional training or in-service sessions to assess and elevate the institutional awareness of transformational leadership within their organization.

### Professional Organizations

Throughout their careers, PAs are familiar with completing continuing medical education. Leadership training, from any number of providers, could be an extension of that continuing education. Glicken (2008) stated that attempts to develop programs for future program directors have been sporadic, and as part of its mission the PAEA supports "programs in the recruitment, selection, development, and retention of well-qualified faculty" (PAEA, 2013b, p. 4). Consequently, PAEA may be in the best position to create, develop, and implement programs that will foster and secure individuals for these types of positions going forward.

## Conclusion

The purpose of this study was to assess and compare the perceptions about leadership factors used by PA program directors from the perspectives of the program director and other individuals associated with the department in the context of FRLT (Bass & Avolio, 2004). FRLT assesses factors across a spectrum of leadership and includes transformational, transactional, and passive/avoidant factors. The presence of transformational leadership is associated with positive outcomes that benefit both the employee and organization. This research fills a gap in the literature regarding PA program directors.

A total of 282 respondents submitted a complete MLQ, the instrument that measures full-range leadership, electronically through a third-party vendor. Program directors reported using transformational factors "fairly often" and reported higher mean scores than other-raters. For some of these factors, the difference was statistically significant. The MLQ also reported three leadership outcomes of full-range leadership: effectiveness, satisfaction, and extra effort. For each leadership outcome, program directors reported higher mean values than other-raters associated with the PA academic unit. The outcome of effectiveness was statistically significantly different between groups. Findings from this research are consistent with other reported data on program directors in allied health education.

This study is significant for PA program directors, their academic units, the institutions that sponsor PA programs, and professional organizations that offer leadership training and professional development. First, this study quantifies the current status of PA program director leadership in the context of a well-documented model, the FRLT. Second, this study reports similarities and differences that exist between PA program directors and other individuals associated with their academic units. Third, this study provides a foundation of knowledge for institutions considering sponsoring a PA program about leadership qualities to consider. Finally, for institutions with existing programs and professional organizations, this information can provide a foundation for leadership training and professional development.

Overall, this study suggests that additional study in leadership for PA program directors is indicated to provide professional development for leadership and decrease turnover within the academic units that train future PAs. In addition, this study provides

an understanding of the dynamic that occurs between the two primary groups involved with the delivery of course content to these students. Although leadership can be elusive to define, FRLT provides a foundation to build training opportunities for all stakeholders associated with PA education.

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## APPENDIX A:

## ELIGIBLE PUBLIC AND PRIVATE SPONSORING INSTITUTIONS

| | |
|---|---|
| University of Alabama (Birmingham) | AL |
| University of South Alabama | AL |
| Harding University | AR |
| Arizona School of Health Sciences | AZ |
| Midwestern University (Glendale) | AZ |
| Loma Linda University | CA |
| Samuel Merritt College | CA |
| Touro College (California) | CA |
| University of Southern California (LA) | CA |
| Western University of Health Sciences | CA |
| Red Rocks Community College | CO |
| University of Colorado at Denver and Health Sciences Center | CO |
| Quinnipiac University | CT |
| Yale University | CT |
| George Washington University | DC |
| Barry University | FL |
| Keiser University | FL |
| Nova Southeastern University (Ft. Lauderdale) | FL |
| Nova Southeastern University (Orlando) | FL |
| Nova Southeastern University (SW Florida/Fort Myers) | FL |
| University of Florida | FL |
| Emory University | GA |
| Georgia Health Sciences University | GA |
| Mercer University | GA |
| South University | GA |
| Des Moines University (Osteopathic Medical Center) | IA |
| University of Iowa | IA |
| Idaho State University | ID |

| | |
|---|---|
| Midwestern University (Downers Grove) | IL |
| Rosalind Franklin University of Medicine and Science | IL |
| Southern Illinois University (Carbondale) | IL |
| Butler University | IN |
| University of Saint Francis (Ft. Wayne) | IN |
| Wichita State University | KS |
| University of Kentucky | KY |
| Louisiana State University Health Sciences Center (Shreveport) | LA |
| MA College of Pharmacy & Health Science (Boston) | MA |
| Northeastern University | MA |
| Springfield College | MA |
| Anne Arundel Community College | MD |
| Towson University CCBC / Essex | MD |
| University of New England | ME |
| Central Michigan University | MI |
| Grand Valley State University | MI |
| University of Detroit / Mercy | MI |
| Wayne State University | MI |
| Western Michigan University | MI |
| Augsburg College | MN |
| Missouri State University | MO |
| Saint Louis University | MO |
| Rocky Mountain College | MT |
| Duke University | NC |
| East Carolina University | NC |
| Methodist University | NC |
| Wake Forest University | NC |
| Wingate University | NC |
| University of North Dakota (Main Campus) | ND |
| Union College | NE |
| University of Nebraska Medical Center | NE |

| | |
|---|---|
| MA College of Pharmacy & Health Science (Manchester) | NH |
| Seton Hall University | NJ |
| University of Medicine and Dentistry of New Jersey | NJ |
| University of New Mexico | NM |
| University of St. Francis | NM |
| Touro University (Las Vegas) | NV |
| Albany Medical College | NY |
| Cornell University (Weill Cornell Graduate School) | NY |
| Daemen College | NY |
| D'youville College | NY |
| Hofstra University | NY |
| Le Moyne College | NY |
| Long Island University | NY |
| Mercy College | NY |
| New York Institute of Technology | NY |
| Pace University | NY |
| Stony Brook University | NY |
| SUNY Upstate Medical Center | NY |
| Touro College (Bay Shore) | NY |
| Touro College (Manhattan) | NY |
| Wagner College | NY |
| Cuyahoga Community College / Cleveland State | OH |
| Kettering College of Medical Arts | OH |
| Marietta College | OH |
| University of Mount Union | OH |
| University of Toledo | OH |
| University of Oklahoma (Oklahoma City) | OK |
| University of Oklahoma (Tulsa) | OK |
| Oregon Health & Science University | OR |
| Pacific University | OR |
| Arcadia University | PA |

| | |
|---|---|
| Chatham University | PA |
| Desales University | PA |
| Drexel University | PA |
| Duquesne University | PA |
| Gannon University | PA |
| Kings College | PA |
| Lock Haven University of Pennsylvania | PA |
| Marywood University | PA |
| Philadelphia College of Osteopathic Medicine | PA |
| Philadelphia University | PA |
| Saint Francis University | PA |
| Salus University | PA |
| Seton Hill University | PA |
| Medical University of South Carolina | SC |
| University of South Dakota | SD |
| Bethel College | TN |
| South College | TN |
| Trevecca Nazarene University | TN |
| Baylor College of Medicine | TX |
| Texas Tech University | TX |
| University of North Texas (Ft. Worth) | TX |
| University of Texas (Galveston) | TX |
| University of Texas (Pan American) | TX |
| University of Texas (San Antonio) | TX |
| University of Texas (Southwestern Medical Center at Dallas) | TX |
| University of Utah | UT |
| Eastern Virginia Medical School | VA |
| James Madison University | VA |
| Jefferson College of Health Sciences | VA |
| Shenandoah University | VA |
| University of Washington | WA |

| | |
|---|---|
| Carroll University | WI |
| University of Wisconsin (La Crosse) | WI |
| University of Wisconsin (Madison) | WI |
| Marquette University | WI |
| Alderson-Broaddus University | WV |
| Mountain State University | WV |

## APPENDIX B:

## PARTICIPANT COMMUNICATION

### Program Director Prenotice Email

Dear (name here):

As a doctoral student in Higher Education Administration at the George Washington University in Washington, DC, I am interested in the leadership behaviors of PA program directors through their self-perceptions and the perceptions of faculty and staff associated with their program.

Seemingly, it does not appear that research studying the leadership behaviors of PA program directors has ever been conducted. It is my expectation that results from this study will provide a significant contribution to the body of knowledge for this cohort of leaders.

Your input is crucial to the success of this research project. As a fellow physician assistant and educator, I know that you have many people making requests of you. I hope that you will agree to take time from your already busy schedule to participate in this study, as I need your help in order to have sufficient data to complete my research.

This research will require the completion of the Multifactor Leadership Questionnaire (MLQ). Upon your approval, this survey will be sent to yourself, department members as listed in the PAEA online membership directory, and your direct supervisor via email with a link to the survey. This survey will take approximately 15-20 minutes to complete. The data being collected is being managed by a third party, Mind Garden, Inc., to ensure complete anonymity of each volunteer participating in this study. Data will **not** be analyzed at the program or institutional level, and only aggregate results will be presented in analysis. Participation in this study is voluntary.

I am requesting that you indicate your response regarding participation by responding to this email. **With your email response, please provide the name and email of your immediate supervisor** so that he/she can be included in this data collection process.

I hope that you will accept this invitation to participate. Should you have any questions please do not hesitate to email me at eifelr@gwmail.gwu.edu. Additional information regarding this research is available below the signature.

Raymond Eifel, EdD(c), PA-C
Doctoral Candidate – Higher Education Administration
The George Washington University
Washington, D.C

**All Participant Email Invitation**

Good morning:

As a doctoral student at the George Washington University, I am studying the leadership attributes of physician assistant program directors through their self-perceptions and the perceptions of others associated with the department. This is an IRB-approved study that your program director has agreed to participate in.

This study requires your completion of the Multifactor Leadership Questionnaire (MLQ) and will take 15 – 20 minutes to complete. Data from this survey is being collected by a third-party provider, Mind Garden, Inc., which will suppress all personal information to ensure your participation is kept anonymous.

Here is the link to the survey:
http://www.mindgarden.com/mlq/bogus-address/other-rater

Clicking on the above link will direct you to an informed consent release that must be checked prior to beginning the survey.

Participation in this study is VOLUNTARY. Data will NOT be analyzed at the program or institutional level. NO reminder emails will be sent once the survey is completed.

I hope that you will agree to participate, as I need your help in collecting a sufficient amount of data to complete my research. I look forward to sharing my findings with you once my research is completed. Please contact me with further questions at eifelr@gwmail.gwu.edu.

Thank you,

Raymond Eifel, M.S., PA-C
Doctoral Candidate – Higher Education Administration
The George Washington University
Washington, D.C.

**Participant Follow-up Email Reminder**

Good morning:

Recently I sent an invitation to participate in an IRB-approved study that your program director has also agreed to take part in. I am studying the leadership attributes of physician assistant program directors through their self-perceptions *and* the perceptions of others associated with the department.

This study requires your completion of the Multifactor Leadership Questionnaire (MLQ). Data from this survey is being collected by a third-party provider, Mind Garden, Inc., which will suppress all personal information to ensure your participation is kept anonymous.

Here is the link to the survey:
http://www.mindgarden.com/mlq/bogus-address/other-rater

Clicking on the above link will direct you to an informed consent release that must be checked prior to beginning the survey.

As a PA educator, I fully realize the many demands on your time, particularly at this point in the semester. **This survey will take 15 – 20 minutes to complete**. Participation in this study is VOLUNTARY. Data will NOT be analyzed at the program or institutional level. NO further reminder emails will be sent once the survey is completed.

If you have unanswered concerns regarding this research, please feel free to contact me through my email at eifelr@gwmail.gwu.edu.

Thank you,

Raymond Eifel, M.S., PA-C
Doctoral Candidate – Higher Education Administration
The George Washington University
Washington, D.C.

**Program Director Thank You**

Dear (name here):
Thank you for responding to my earlier email in regards to participating in this research study.
You can expect an email with a link to the survey within the next couple of days. At that time your immediate supervisor, faculty and staff will also receive an email directing them to a link where they can complete their survey. If any of these individuals have questions regarding the research, please direct them back to me at eifelr@gwmail.gwu.edu.
Sincerely,
Raymond Eifel, M.S., PA-C
Doctoral Candidate – Higher Education Administration
The George Washington University
Washington, D.C.

# APPENDIX C:

# INFORMED CONSENT FORM

transform
by mind garden.com

**Leadership Attributes of Physician Assistant Program Directors**

This survey is for Mr. [redacted] to rate Mr. [redacted]

## INFORMED CONSENT

Information about the Research Study

Full Range Leadership Behaviors of Physician Assistant Program Directors

You are invited to participate in a doctoral dissertation research study conducted by Raymond Eifel, under the direction of Dr. Rick Jakeman, Assistant Professor Higher Education Administration of the Department of Educational Leadership, The George Washington University (GWU). Taking part in this research is entirely voluntary.

The purpose of this study is to measure the perceptions of the applicability of the Full Range Leadership model to the role of physician assistant program directors. This purpose will be supported by collecting information from physician assistant program directors and members of the administration, faculty and staff associated with the study. Program directors will be asked to complete a survey which is a self-rating of their leadership attributes. Other subjects associated with that program director will be asked to complete a survey of their perception of the leadership attributes of their supervisor.

The research will be conducted with all PAEA member programs that confer a Master's degree to their students upon completion of their program. Names and contacts for individuals eligible to participate will be gleaned from the online PAEA membership database on or around November, 2011. The request for this information has been reviewed by the PAEA Research Institute.

If you choose to take part in this study, you will be asked to complete a 45 question survey. The total amount of time you will spend in connection with this study is approximately 15-20 minutes. You may terminate this survey at any time. There are no physical risks associated with this study. Your responses will be anonymously aggregated with other responses and managed by a third-party provider of the survey, Mind Garden, Inc. This provider will destroy all identifying data for individuals and institutions prior to forwarding it to the researcher. Your employment status will not be affected in any way should you choose not to take part or to withdraw from this survey at any time in the process.

Your responses will be saved electronically on a secure third-party server. You may refuse to answer any of the questions and you may stop your participation in this study at any time. Only completed surveys will be included in the final analysis of the data. Your answers are completely anonymous and will be aggregated and individual responses will not be reported. The focus of this study is on creating generalizable data, not on specific departments or individuals. While your participation in this study is voluntary, your perceptions are instrumental to its success and its potential impact on the leadership development of physician assistant program directors.

As with any survey research there are associated risks and benefits. The researcher acknowledges that individuals may be anxious regarding the answering of questions about themselves or their perceptions about their supervisors. That concerns regarding a privacy breach or loss of anonymity may contribute to this anxiety. You will not benefit directly from your participation in the study. The benefits from this study are that it will provide useful insights into departmental leadership of physician assistant program directors that can help shape leadership development for the profession and add to the research literature in this area.

If results of this research study are reported in journals or professional meetings, the people who participated in this study will not be named or identified.

The Office of Human Research of George Washington University, at telephone number (202) 994-2715, can provide further information about your rights as a research participant. If you think you have been harmed in this study, please report this to the Principal Investigator of this study or call the Office of Human Research immediately.

Further information regarding this study may be obtained by contacting the principal investigator of this study, Dr. Rick Jakeman at rjakeman@gwu.edu.

* Consent to participate in the study:

- ○ I agree to participate.
- ○ I choose not to participate.

Items marked by * are required.

## APPENDIX D:

## CHI-SQUARE ANALYSIS OF DEMOGRAPHIC DATA

### Gender

**Crosstabs**

[DataSet2]

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| Gender * Participants | 2065 | 100.0% | 0 | 0.0% | 2065 | 100.0% |

**Gender * Participants Crosstabulation**

Count

| | | Participants | | |
|---|---|---|---|---|
| | | 1 Sample | 2 Annual Report | Total |
| Gender | 1 Males | 112 | 615 | 727 |
| | 2 Females | 170 | 1168 | 1338 |
| Total | | 282 | 1783 | 2065 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|---|
| Pearson Chi-Square | 2.913[a] | 1 | .088 | | |
| Continuity Correction[b] | 2.688 | 1 | .101 | | |
| Likelihood Ratio | 2.870 | 1 | .090 | | |
| Fisher's Exact Test | | | | .094 | .051 |
| Linear-by-Linear Association | 2.911 | 1 | .088 | | |
| N of Valid Cases | 2065 | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 99.28.

b. Computed only for a 2x2 table

**Symmetric Measures**

| | | Value | Approx. Sig. |
|---|---|---|---|
| Nominal by Nominal | Phi | .038 | .088 |
| | Cramer's V | .038 | .088 |
| N of Valid Cases | | 2065 | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

## Age

## Crosstabs

```
[DataSet2]
```

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| Age_grouping * Participants | 1567 | 100.0% | 0 | 0.0% | 1567 | 100.0% |

**Age_grouping * Participants Crosstabulation**

Count

| | | Participants | | |
|---|---|---|---|---|
| | | 1.00 submitted_surveys | 2.00 pop_based_on_AR | Total |
| Age_grouping | 1.00 <30 | 4 | 31 | 35 |
| | 2.00 30-39 | 49 | 255 | 304 |
| | 3.00 40-49 | 82 | 361 | 443 |
| | 4.00 50-59 | 90 | 434 | 524 |
| | 5.00 >60 | 57 | 204 | 261 |
| Total | | 282 | 1285 | 1567 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 4.680[a] | 4 | .322 |
| Likelihood Ratio | 4.694 | 4 | .320 |
| Linear-by-Linear Association | 2.669 | 1 | .102 |
| N of Valid Cases | 1567 | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.30.

**Symmetric Measures**

| | | Value | Approx. Sig. |
|---|---|---|---|
| Nominal by Nominal | Phi | .055 | .322 |
| | Cramer's V | .055 | .322 |
| N of Valid Cases | | 1567 | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

## Longevity in Position

### Crosstabs

[DataSet2]

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| Longevity * Participants | 2022 | 100.0% | 0 | 0.0% | 2022 | 100.0% |

**Longevity * Participants Crosstabulation**

Count

| | | Participants | | |
|---|---|---|---|---|
| | | 1 Sample | 2 Annual Report | Total |
| Longevity | 1 <1 year | 44 | 127 | 171 |
| | 2 1 - 3 years | 49 | 642 | 691 |
| | 3 4 - 7 years | 101 | 453 | 554 |
| | 4 8 - 14 years | 54 | 335 | 389 |
| | 5 15 - 24 years | 28 | 134 | 162 |
| | 6 >25 years | 6 | 49 | 55 |
| Total | | 282 | 1740 | 2022 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 57.247[a] | 5 | .000 |
| Likelihood Ratio | 58.334 | 5 | .000 |
| Linear-by-Linear Association | .458 | 1 | .499 |
| N of Valid Cases | 2022 | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.67.

**Symmetric Measures**

| | | Value | Approx. Sig. |
|---|---|---|---|
| Nominal by Nominal | Phi | .168 | .000 |
| | Cramer's V | .168 | .000 |
| N of Valid Cases | | 2022 | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

**Race**

## Crosstabs

[DataSet2]

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| Race * Participant | 1730 | 100.0% | 0 | 0.0% | 1730 | 100.0% |

**Race * Participant Crosstabulation**

Count

| | | Participant | | |
|---|---|---|---|---|
| | | 1 Sample | 2 Annual Report | Total |
| Race | 1 white | 249 | 1276 | 1525 |
| | 2 Balck/African American | 10 | 115 | 125 |
| | 3 Asian | 5 | 64 | 69 |
| | 4 American Indian/Alaskan Native | 2 | 9 | 11 |
| Total | | 266 | 1464 | 1730 |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 9.860[a] | 3 | .020 |
| Likelihood Ratio | 11.480 | 3 | .009 |
| Linear-by-Linear Association | 6.508 | 1 | .011 |
| N of Valid Cases | 1730 | | |

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 1.69.

**Symmetric Measures**

| | | Value | Approx. Sig. |
|---|---|---|---|
| Nominal by Nominal | Phi | .075 | .020 |
| | Cramer's V | .075 | .020 |
| N of Valid Cases | | 1730 | |

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

# APPENDIX E:

# INDEPENDENT T-TESTS FOR LEADERSHIP FACTORS AND OUTCOMES

## Mean Score Comparisons for Transformational Leadership Factors (Table 4.11)

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Idealized Influence (Attributes) | Equal variances assumed | 7.435 | .007 | 1.119 | 280 | .264 | .150 | .134 | -.114 | .414 |
| | Equal variances not assumed | | | 1.396 | 111.877 | .165 | .150 | .108 | -.063 | .363 |
| Idealized Influence (Behaviors) | Equal variances assumed | 2.680 | .103 | 3.870 | 280 | .000 | .515 | .133 | .253 | .776 |
| | Equal variances not assumed | | | 4.722 | 107.293 | .000 | .515 | .109 | .299 | .731 |
| Inspirational Motivation | Equal variances assumed | 11.458 | .001 | 2.463 | 280 | .014 | .345 | .140 | .069 | .620 |
| | Equal variances not assumed | | | 3.383 | 137.913 | .001 | .345 | .102 | .143 | .546 |
| Intellectual Stimulation | Equal variances assumed | 25.132 | .000 | 3.110 | 280 | .002 | .456 | .146 | .167 | .744 |
| | Equal variances not assumed | | | 4.639 | 170.864 | .000 | .456 | .098 | .262 | .650 |
| Individual Consideration | Equal variances assumed | 8.925 | .003 | 2.609 | 280 | .010 | .365 | .140 | .090 | .640 |
| | Equal variances not assumed | | | 3.649 | 144.152 | .000 | .365 | .100 | .167 | .563 |

## Mean Score Comparison for 5 I's (Table 4.11)

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Five I's of Transformational Leadership | Equal variances assumed | 4.892 | .028 | 2.472 | 280 | .014 | .300 | .121 | .061 | .538 |
| | Equal variances not assumed | | | 3.414 | 139.760 | .001 | .300 | .088 | .126 | .473 |

## Mean Score Comparisons for Transactional Leadership Factors (Table 4.12)

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Contingent Reward | Equal variances assumed | 13.229 | .000 | 1.375 | 280 | .170 | .192 | .140 | -.083 | .468 |
| | Equal variances not assumed | | | 1.773 | 119.548 | .079 | .192 | .109 | -.023 | .408 |
| Management by Exception (Active) | Equal variances assumed | 1.540 | .216 | -.512 | 280 | .609 | -.072 | .141 | -.350 | .205 |
| | Equal variances not assumed | | | -.620 | 105.959 | .536 | -.072 | .116 | -.303 | .158 |

## Mean Score Comparisons for Passive/Avoidant Leadership Factors (Table 4.13)

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Management by Exception (Passive) | Equal variances assumed | 1.566 | .212 | -2.864 | 280 | .005 | -.419 | .146 | -.706 | -.131 |
| | Equal variances not assumed | | | -3.134 | 89.870 | .002 | -.419 | .134 | -.684 | -.153 |
| Laissez-Faire | Equal variances assumed | 7.085 | .008 | -1.380 | 280 | .169 | -.171 | .124 | -.415 | .073 |
| | Equal variances not assumed | | | -1.558 | 94.157 | .122 | -.171 | .110 | -.389 | .047 |

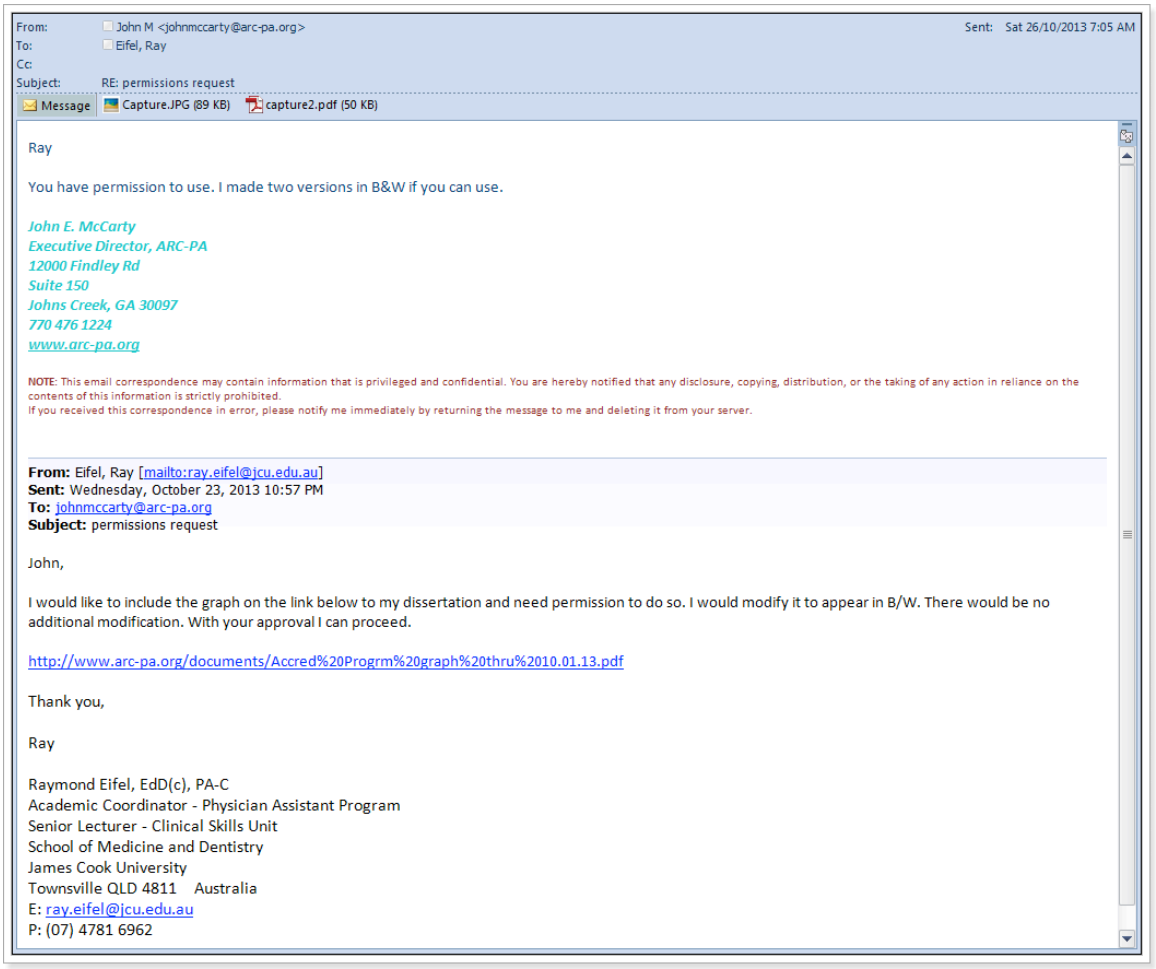
## Mean Score Comparisons for Leadership Outcomes (Table 4.16)

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Extra Effort | Equal variances assumed | 10.227 | .002 | .141 | 280 | .888 | .021 | .152 | -.278 | .321 |
| | Equal variances not assumed | | | .184 | 123.144 | .854 | .021 | .117 | -.209 | .252 |
| Effectiveness | Equal variances assumed | 9.264 | .003 | 2.909 | 280 | .004 | .422 | .145 | .136 | .708 |
| | Equal variances not assumed | | | 3.842 | 126.053 | .000 | .422 | .110 | .205 | .639 |
| Satisfaction with the leadership | Equal variances assumed | 6.165 | .014 | .970 | 280 | .333 | .150 | .154 | -.154 | .453 |
| | Equal variances not assumed | | | 1.196 | 109.397 | .234 | .150 | .125 | -.098 | .397 |

# APPENDIX F:

# PERMISSIONS AND AGREEMENTS

## Permission to Reprint Figure 1.1



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To: Eifel, Ray
Cc:
Subject: RE: permissions request
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Ray

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*John E. McCarty*
*Executive Director, ARC-PA*
*12000 Findley Rd*
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*Johns Creek, GA 30097*
*770 476 1224*
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Thank you,

Ray

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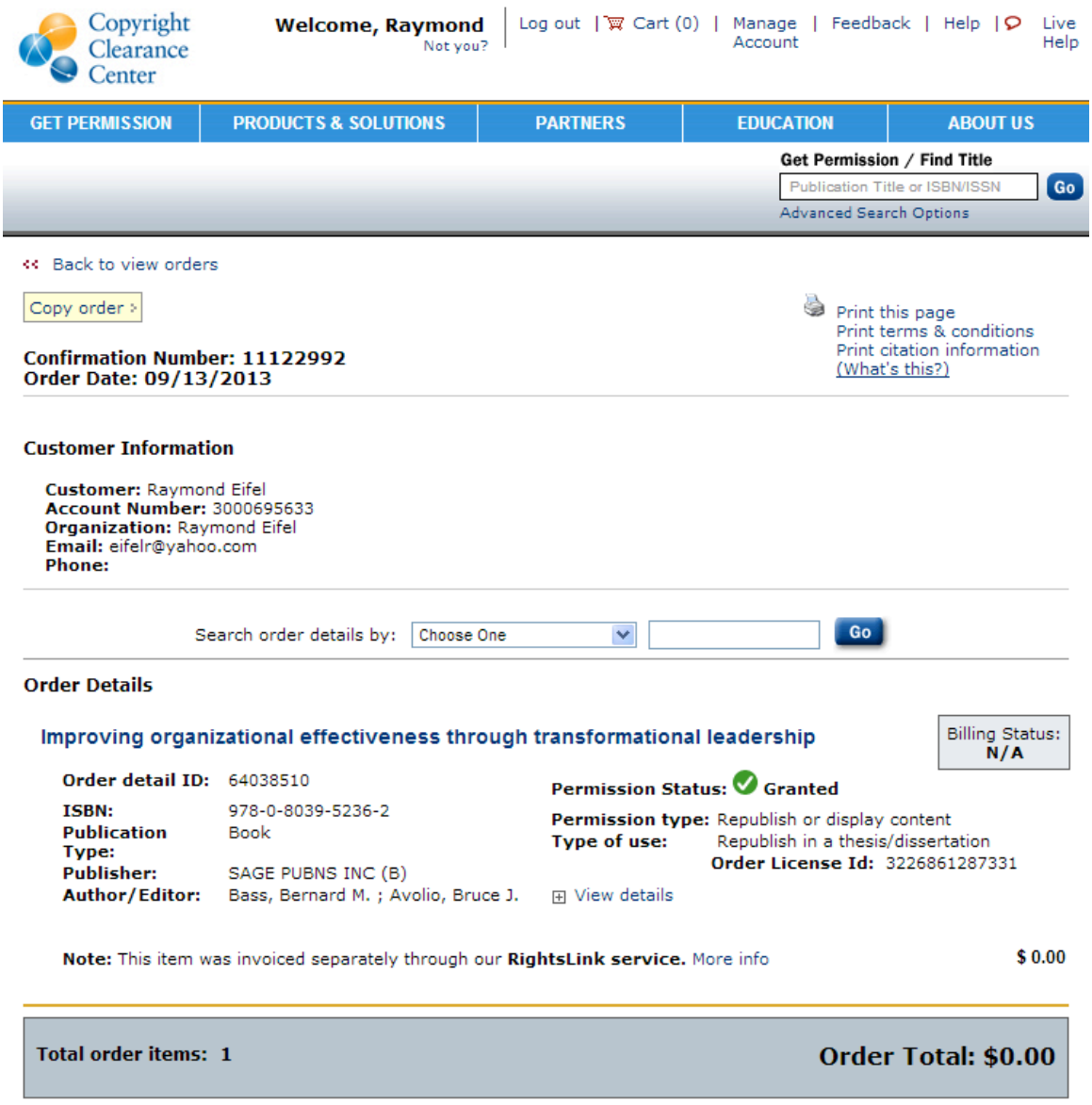
## Permission to Reprint Figures 2.1 and 2.2



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**MindGarden, Inc. Communication Regarding Data Suppression**

**Response from Mind Garden - Data Download File and suppression of names/email addresses**

From info@mindgarden.com

To Raymond Eifel

Hello Raymond,

As requested, this email is written to explain how Mind Garden can suppress names and email addresses from the data file that is created from a data download for assessments that are administered via our Mind Garden Transform System.

When online surveys (assessments)are administered by a designated Administrator (customer) via the Mind Garden Transform System, the participants' information and responses are stored in the Mind Garden database. The designated Administrator has access to a data download link that when selected creates a data file which includes one line of data for each participant that has completed the assessment. Each data line includes the Participant's Name, their email address, their responses to the assessment (raw data) and raw scores by subscales.

Customers CAN request (via an email to info@mindgarden.com AND a phone call 650-322-6300) to have the Participants' names and email addresses suppressed from the data file that is created from the data download link.

Best regards,
Chris
Mind Garden, Inc.

## Physician Assistant Education Association Communication Regarding Database Access

NONDISCLOSURE AGREEMENT

This AGREEMENT is made on September 6, 2011 between the Physician Assistant Education Association, its successors and assigns (PAEA), and Raymond Eifel, who will be obtaining information for the sole purpose of collecting and analyzing data in connection with his research grant. Mr. Eifel hereby agrees and acknowledges:

1. That during the period of his engagement with PAEA there may be disclosed to Mr. Eifel certain information of PAEA; said information consisting of but not necessarily limited to:

   a) Technical information: methods, processes, formulae, compositions, systems, techniques, inventions, machines, computer programs, and research projects.

   b) Business information: information related to PA education and PAEA member programs, pricing data, sources of supply, financial data, and marketing, production, or merchandising information, systems, or plans.

2. Mr. Eifel agrees that he shall not during, or at any time after the termination of his engagement with PAEA, use for himself or others, or disclose or divulge to others any trade secrets, confidential information, or any other proprietary data of PAEA in violation of this agreement.

   a) At no such time will that data be presented in any way that would identify individuals or individual programs.

   b) Findings may be presented only in the aggregate.

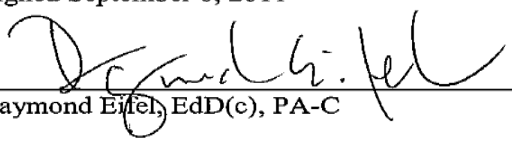
3. Mr. Eifel agrees to contact Mind Garden (via an email to info@mindgarden.com AND a phone call (650-322-6300) to request/authorize that the **participants' names, e-mail addresses, program names, and any other identifying information be suppressed** from the data file that is created from the data download link.

4. That upon the termination of Mr. Eifel's engagement with PAEA:

   a) Mr. Eifel shall return to PAEA all documents and property of PAEA, including but not necessarily limited to: reports, manuals, correspondence, information related to PA education and PAEA member programs, computer programs, and all other materials and all copies thereof relating in any way to PAEA's business, or in any way obtained by him during the course of his engagement. Mr. Eifel further agrees that he shall not retain copies, notes, or abstracts of the foregoing.

   b) This agreement shall be binding upon Mr. Eifel and anyone working with him and shall inure to the benefit of PAEA, its successors and assigns.

Signed September 6, 2011



Raymond Eifel, EdD(c), PA-C