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Mentor Effectiveness and its Correlation with Physician Assistant Faculty Job Satisfaction and Turnover Intentions

by
Amy J. Bronson

A dissertation submitted to the faculty of Bethel University
in partial fulfillment of the requirements for the degree of
Doctor of Education

Saint Paul, MN
2017

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Abstract

Growth in physician assistant training programs is resulting in an increasing demand for qualified physician assistant faculty. Gaining an understanding of mentoring in PA education and its relationship to faculty job satisfaction and faculty turnover intentions is important. The purpose of this study was to investigate the relationship between the effectiveness of mentoring in relation to faculty perceived levels of job satisfaction and faculty turnover intentions for Physician Assistant (PA) Educators in the United States. A correlative cross-sectional web-based survey design, created from a combination of The Mentor Effectiveness Questionnaire, Job in General Scale, and the Turnover Intentions Measure, were used to gather quantitative data. Certified PAs, employed as full-time faculty members at Accreditation Review Commission on Physician Assistant (ARC-PA) accredited PA programs in the United States that subscribe to the Physician Assistant Education (PAEA) all faculty listserv was invited via e-mail to participate in the web-based survey (n = 593). Eighty-six participants met the criteria and completed the survey resulting in a return rate of 14.5 %. The findings of this study indicate that 60.5 % of participants reported receiving mentorship in their educational career, with 76% characterizing the relationship as informal. The Kruskal-Wallis test was conducted on respondent scores of job satisfaction and mentoring, resulting in no statistically significant relationship. Pearson correlations resulted in a statistically significant negative relationship between mentoring effectiveness and turnover intention. Results of the multiple linear regression identified a small predictive negative relationship between mentoring and faculty turnover intentions. The results of this study suggest mentoring relationships do not have a correlation with faculty job satisfaction but effective mentoring lowers faculty intent for turnover. Finally, implications, limitations and suggestions for future research are discussed.

Acknowledgments

I would like to express my deepest gratitude to my dedicated committee and especially to Wallace Boeve, Ed.D., my chair, who believed in me and provided the guidance to finish this project. Special thanks to Patricia Paulson, Ph.D., for her expertise, guidance, and mentorship that has impacted both this project and my educational trajectory. I would also like to thank Jessica Daniels, Ph.D.; her intelligence, and positive nature inspires my journey as a leader, and I could not have reached the summit without her support. To Ryan Dembeck, my deepest appreciation for your statistical knowledge, skill, and all the support you provided.

To my family and friends, who endured, encouraged, and tolerated my often physical, mental, and emotional absence throughout my dissertation journey. To my parents, who provided ongoing support, encouragement, and taught me early the beauty of believing in big dreams. To my children, Finley and Charlie, for your encouraging words, big hugs, and sacrifices to "let mommy write." May you always pursue your dreams with the excitement and passion you gave me in chasing mine. To my husband, Frederick, thank your for being my steadfast companion, cheerleader, and rock on this journey. I am blessed to walk life with you and could not have done this without your love and support!

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Chapter One: Introduction

Introduction

Current projections predict a 90,000-physician shortage in the United States by 2025 (Porter, 2015). Meeting the needs of a national healthcare shortage is not new to the Physician Assistant (PA). The PA profession originated in response to a shortage of primary care physicians in 1965, and the profession continues today, growing to meet the current need for well-trained medical providers (American Academy of Physician Assistants [AAPA], 2016). Based on a fast-track curriculum for physician training developed during World War II, the first PA program at Duke University was created to train Navy Corpsmen. Building on the medical field experience of the corpsmen, the program could efficiently train providers with the skills needed to meet the demand for more primary care physicians (AAPA, 2016). The program was well received and quickly gained federal and community backing as a creative solution to meeting the country's medical needs (AAPA, 2016). The PA profession has continued to grow since its inception. With the nation entering another health care crisis of provider shortage, the PA profession is again positioned to help meet the country's need. The number of practicing PAs grew 36.4%, with 74,777 certified PAs at the end of 2009, growing to 101,977 at the end of 2014 (National Commission on Certification of Physician Assistants [NCCPA], 2014). The total number of practicing PAs is likely to grow, as the annual number of new graduates is likely to triple from around 4,000 to more than 12,000 in 2022 (NCCPA, 2014).

The *U.S. News and World Report* (2016) ranked physician assistant as number five in the "100 Best Jobs." With high median salary, low unemployment rates, high levels of reported job satisfaction, and predicted continued job growth over the next 10 years, the PA profession continues to rank as one of the top jobs in America (Gillet, 2015). Increasing market demand for

PAs, coupled with historically high levels of clinical job satisfaction and compensation, has resulted in a growing interest in the PA profession (Hooker, 2015). The market demand for PA professionals has subsequently increased the demand for more graduates from quality PA training programs.

Introduction to the Problem

PA education continues to expand to facilitate the training to meet the demand for more skilled medical providers. Since 2000, the number of accredited PA programs has grown from 126 to 218, with an additional 52 programs currently in consideration for initial accreditation through March 2020 (Accreditation Review Commission on Education for the Physician Assistant [ARC-PA], 2016; Quincy, Archambault, Sedrak, Essary, & Hull, 2012). Consequently, this growth in accredited PA programs is increasing the demand for well-trained and skilled PA faculty.

The rapid growth in PA programs and the expansion of many existing programs has created an increasing demand for more PA faculty. With an increasing need for educators to fill the growing faculty void, most new faculty are hired directly from clinical practice into academia. A Physician Assistant Education Association (PAEA) survey found that of the newly hired faculty in 2012-2013 academic year, 68% were directly out of clinical practice, and only 17.3% had any previous experience in education (PAEA, 2014). In the PAEA (2015) survey, 63% of faculty in physician assistant education reported being in their position for less than three years.

Understanding the issues and initiatives related to helping a growing segment of novice PA faculty to successfully transition from the clinic to the culture and expectations of higher education is important. The difficult transition from clinical medicine to academia is apparent in

the medical literature (Gustin & Tuslky, 2010; Ries et al., 2012, Steele, Fisman, & Davidson, 2013). New faculty feel overwhelmed and unsupported while developing the skills to adapt to an unfamiliar academic environment (Cangelosi, 2014; Zipp, Maher & Falzarano, 2015). Faculty sensing isolation and a lack of support correlate with less career satisfaction and a greater intent to leave the academic environment (Blood et al., 2012; Hagemeier, Murawski, & Popovich, 2013; Zipp, Maher & Falzarano, 2015).

Background of the Study

A similar trend was reported in PA education with high rates of faculty turnover, especially in the first few years of faculty careers (Hegmann, 2014). Job and salary dissatisfaction have been reported as reasons for personnel leaving academic positions (PAEA, 2015: Quincy et al., 2014). However, Quincy et al. (2012) reported that the most common reason PA educators leave academics was to return to clinical practice (Quincy et al., 2014). PA faculty enjoy easy career mobility with high job demand in the clinical sector (AAPA, 2014). Also, many educators continue in clinical practice when entering academia. PAEA (2015) survey reported 85.8% of faculty get release time to continue clinical work. Remaining in clinical practice is important for relevance in teaching, as well as additional compensation for lower paying academic positions. Staying in clinical practice also means faculty maintain a valuable skill set, making a return to the clinical setting easier. Market demand for PA clinicians also increases the difficulty of recruiting new faculty into education. Offering faculty salary and benefits commensurate with the clinical job market is challenging for PA programs. Increasing market demand for PAs is driving increasing salaries, especially across the surgical sub-specialties, resulting in a widening salary discrepancy between clinical and academic jobs (AAPA, 2014). PAEA (2015) salary reports average median base income for academic faculty

in their position for one to three years was $90,000, while commensurate experience as a clinical PA has a national median income estimated at $100, 000 (AAPA, 2014). Boeve (2006) reported PA faculty members were unsatisfied with their academic salaries. In a follow-up study to look at the specific facet determinants of salary, researchers found faculty with salaries at or above the median reported income reported higher satisfaction with their job (Dans et al., 2007). Those faculty making below the median salary had lower levels of reported job satisfaction (Dans et al., 2007). Also, researchers reported PA faculty were least satisfied with the top salary available in education (Dans et al., 2007).

However, research in both higher education and allied health professions found salary is rarely the sole reason that faculty leave positions (Ambrose, Huston, & Norman, 2005; Johnsrud & Rosser, 2002; Nalliah & Allareddy, 2016). Nalliah and Allareddy (2016) concluded that many facets of job satisfaction other than salary, influence faculty decisions to remain in academia. These factors included, but were not limited to, supervisory relationships, co-worker relations, and the work itself (Nalliah & Allareddy, 2016). Despite the salary debate and the correlation with PA faculty returning to clinical practice, the current job market and rates of compensation for PAs may continue to create a barrier to recruitment and retention of higher education faculty.

The challenge of retaining and recruiting qualified faculty results in a widening gap between the number of positions to fill and the number of qualified faculty applicants (Hegmann, 2014). In the 2011-2012 academic year, existing PA program attrition rate was 10.8% (PAEA, 2014). Also, PAEA (2015) reported that of the survey respondents, 45% considered leaving their current position for another job. PA faculty, with easy career mobility and increasing clinical job market demand, will continue to challenge the recruitment and retention of PA educators. In addition, clinical demand for PAs is likely to continue. The Bureau of Labor and

Statistics (2016) project that employment of clinical physician assistants will grow 30% from 2014-2024. Also, that institutes of higher education will be able to increase faculty monetary compensation to the extent that will outpace PA clinical market value is unlikely (PAEA, 2015). With demand and compensation unlikely to shift, stakeholders in PA education need to alternatively focus on modifying academic life to influence other facets of faculty job satisfaction. Leaders implementing faculty development or other retention interventions may foster greater job satisfaction and positively affect the current rates of faculty attrition.

Growth in the number of novice faculty is increasing the demand for more robust and intentional faculty development. Faculty development is a retention tool proven to be important in helping new faculty transition to academia (Dunham-Taylor et al., 2008). A recent PAEA (2015) survey highlighted that current faculty are most dissatisfied with promotion and faculty development opportunities. A lack of faculty development results in new educators experiencing ambiguity and uncertainty in their role as an academician (Blood et al., 2012; Cangelosi, 2014; Faurer, Sutton, & Worster, 2014). Graeff et al. (2014) highlighted how higher ranking PA faculty have an overall increased level of job satisfaction compared to faculty new to academia. Researchers speculate that part of the difference in reporting of job satisfaction is novice faculty feel unprepared and ill-equipped for the culture and expectations of academia. Consequently, novice faculty who are feeling overwhelmed report lower levels of job satisfaction (Blood, et al., 2012; Cangelosi, 2014; Glicken, 2008; Mayer et al., 2014; Zipp, Maher, & Falzarano, 2015).

Focused faculty development may be one solution to help PAs transition from the clinic to academia. One specific area of intentional faculty development is faculty mentoring. Nalliah and Allareddy (2016) concluded that "the most important factor necessary to retain and develop junior faculty members is receiving good mentorship" (p. 2). However, little research has been

done in PA education to define better specific professional development interventions such as mentoring and how mentoring correlates with increased job satisfaction and intent to stay in academia for PA faculty (Graeff et al., 2014; Hegmann, 2014; Orcutt, 2007).

Mentoring relationships have been proposed as one way to help new faculty assimilate to the culture of academia while providing skill and career guidance for new faculty (Graham, 2012; Law et al., 2014; Xu et al., 2014; Zipp, Maher, & Falzarano, 2015). Researchers in academic medicine have found a significant correlation between mentoring relationships for novice faculty transitioning to education and increased overall career satisfaction (Faurer, Sutton, & Worster, 2014; Gustin & Tulsky, 2010; Straus, Johnson, Marquez, & Feldman, 2013; Xu, et al., 2014). Mentored novice faculty receiving career guidance and support assimilating to academia reported greater levels of job satisfaction (Graham, 2012; Law et al., 2014; Mayer, 2014; Xu et al., 2014; Zip, Maher, & Falzarano, 2015). Faculty that feel more competent in their educational skills and perceive greater academic accomplishments report greater career satisfaction (Emmerik, 2004; Ries et al., 2012). Carey and Weissman (2010) found that mentoring relationships play a central role in faculty academic success in medical education. Mentoring offers the guidance needed for faculty to gain the skills and tools necessary to achieve the goals associated with a successful academic career. Researchers concluded, a mentoring relationship has a positive correlation with reported levels of career satisfaction and reported levels of novice faculty intent to stay in academia (Carey & Weissman, 2010; Ries et al., 2012).

Increasing academic success for novice faculty is important in PA education. Most PA faculty directly enter academia from clinical practice and need support in assimilating to the culture in higher education (Glicken, 2008). In a study of PAs transitioning from the clinic to academia, Marciano (2013) found that PAs working in higher education reported less overall job

satisfaction. Study respondents identified low levels of job satisfaction were related to decreased feelings of competence in their academic role. Also, Marciano (2013) reported that academicians with adequate professional development had increased reported levels of relatedness to the institution and reported more satisfying experience in their work. Professional development is of value and highlights the importance of the social and psychological role mentoring can fill in helping new faculty feel supported in their new environment (Carmel & Paul, 2015). Similarly, Graham (2012) highlighted how faculty with a high intention to stay in academia had positive statements regarding the importance of relationships, concluding,

> Higher education administrators can better support this transition and foster the faculty member's intention to stay by helping the PA faculty member to become involved in the wider academic community at the institution, by making the expectations of academia explicit, by ensuring that the promotion and tenure process is fair and attainable for PA faculty, and by helping new faculty to identify a mentor who can help them navigate the institutional culture. (p. 145)

Mentoring can fulfill a role of both professional skill development and academic socialization, meeting both the skill-set and socioemotional needs important for academic success (Boeve, 2006; Graham, 2012; Glicken, 2008). Further PA studies have identified PA educators value social support networks and professional relationships, which is correlated with both job satisfaction and intention to stay in academia (Boeve, 2006; Graeff et al., 2014; Graham, 2012).

Research across various medical disciplines highlight how professional development in the form of mentoring correlates with perceived levels of greater job satisfaction and increased faculty retention (Falzarano, 2011; Graham, 2012; Law, et al., 2014; Mayer, 2014; Xu, et al., 2014; Zip, Maher, & Falzarano, 2015). However, to implement successful retention strategies,

more research is needed to understand the current mentoring practices, and the impact mentoring has on novice educators' perception of job satisfaction and decisions to stay in PA education (Graeff, Leafman, Wallace, & Stewart 2014; Orcutt, 2007). To date, no current research in PA education has been done to assess current mentoring practices. Orcutt (2007) concluded that more research is needed related to professional development initiatives for PA educators. However, there is a paucity of research in PA education on using mentoring as a tool for faculty development and its potential to promote job satisfaction and to support better faculty retention. Gaining knowledge on mentoring practices and utilization of mentoring as a faculty development tool will fill a gap and answer if mentoring matters for job satisfaction and retention in PA education.

Statement of the Problem

Growth in accredited PA programs is increasing the demand for well-trained and skilled PA faculty. Transitioning from the clinical setting to academia is a significant change for medical and physician assistant faculty. With little training in the skills needed for teaching, research, university expectations, and the culture of academia, many faculty feel unsupported in their transition and ultimately choose to return to clinical practice (Behar-Hornstein, Garvan, Catalanotto, & Hudson-Vassell, 2014). A high faculty turnover rate in the PA profession highlights the importance of promoting job satisfaction and finding ways to improve retention of both new and experienced faculty (Graeff et al., 2014). Researchers in academic medicine report faculty perceptions of academic success as an indicator of overall job satisfaction (Law et al., 2014; Mayer, 2014; Xu et al., 2014; Zip, Maher & Falzarano, 2015). Academic success has been defined as the necessary skills to achieve goals related to the triplicate role of academia. Included in the triplicate role are service, scholarship, and teaching. Academic success is

achieved across all three domains by meeting the requirements for tenure, promotion, or reappointment (Zipp, Maher & Falzarano, 2015). Additionally, research has shown mentoring is important for junior faculty academic socialization, helping faculty assimilate to the new cultural environment (Eaton, 2015; Faurer, Sutton, & Worster, 2014).

Medical education recognizes the importance of faculty development and mentoring programs in fostering faculty success in academia (Sambunjak, Straus, & Marusic, 2006). Implementing retention interventions to meet faculty demand for continuing skill development, academic socialization, and professional growth can sustain faculty in this transition from the clinic to academia (Dunham-Taylor et al., 2008; Gustin & Tulskey, 2010; Hutchins, 2015; Mayer, 2014). In medical education literature, mentoring and faculty development correlates with improved job satisfaction and faculty retention (Behar-Hornstein et al., 2014; Graeff et al., 2014). A consistent finding in the literature is a positive correlation between colleague relationships and social support networks with an increased overall level of job satisfaction (Boeve, 2006; Graeff et al., 2014; Quincy et al., 2012).

Studies in both academic medicine and PA education highlight that relationships (Boeve, 2006; Graeff et al., 2014; Graham, 2012) are important to faculty academic success (Faurer, Sutton, & Worster, 2014; Marciano, 2013; Mayer, 2014) and career satisfaction (Boeve, 2006; Graeff, et al., 2014; Marciano, 2013). However, little quantitative data has been collected to define what type of mentoring relationships and social support networks are currently utilized in PA education, who is participating in mentoring relationships, and how effective protégé perceive the relationships to be. Also, little data exists related to attitudes and perceptions of PA faculty in mentoring relationships and if mentoring correlates with faculty decisions to continue in academia.

Purpose of the Study

The purpose of this study was to investigate the relationship between the effectiveness of mentoring in relation to faculty perceived levels of job satisfaction and faculty turnover intentions for Physician Assistant (PA) Educators in the United States. This study included gathering information related to the nature and extent of the current mentoring practices in PA education.

Significance of the Study

A growing need for quality faculty coupled with a high rate of attrition in PA education poses a threat to the educational foundation of the profession. A strong educational infrastructure is needed to ensure the success of training new skilled professionals to meet the impending provider shortage. The emerging themes in academic and PA education of job burnout, noncompetitive salaries and lack of supportive relationships are barriers to faculty retention and recruitment (Rettenmeier, 2011). Over half of current PA faculty have been in PA education for less than three years (PAEA, 2015). With the growth and expansion of PA programs, more research is needed to understand the efficacy of interventions to increase retention of novice faculty. Across many medical disciplines, faculty mentoring for novice educators has proven to be an effective model for helping ease the transition. The benefits of mentoring include organization assimilation, including the cultural and social norms of higher education, skill development, relational support, and career guidance for new faculty (Dunham-Taylor, et al., 2008; Faurer, Sutton, & Worster, 2014; Gustin & Tulsky, 2010; Marciano, 2013).

Effective mentoring relationships play an important role in enhancing colleague relationships and supporting career success. Researchers have found a correlation between mentoring relationships and increased faculty satisfaction (Gustin & Tulsky, 2010; Straus et al.,

2008; Straus, Johnson, Marquez, & Feldman, 2013). PA educational leaders and institutions may benefit from exploring the current status of these relationships in PA education. The discovery of further evidence may support and aid in the design and implementation of mentoring programs that will enhance faculty job satisfaction, leading to improved faculty retention.

With current and projected growth in PA educational programs, more PA educators are needed. Most new faculty transitioning from clinical practice possess limited academic related skills and limited exposure to the culture of higher education (Emmerik, 2004). Implementing strategies to support this transition while offering career guidance and psychosocial support has correlations with greater academic success for faculty (Emmerik, 2004; Falzarano, 2011; Ries et al., 2012). Strategies that can help transition faculty from the clinic into higher education will be critical to sustaining the infrastructure of PA education. Ries et al. (2012) reported organization led faculty development that employs mentoring for new faculty correlated with greater perceptions of faculty job satisfaction. From a review of the literature to date, no current quantitative data exists on the current mentoring practices in PA education. Thus, further research is needed to discern if a correlation exists between mentoring and faculty turnover intentions for both novice and experienced PA educators.

The need for research of PA faculty mentoring is evident (Graeff, Leafman, Wallace, & Stewart, 2014; Orcutt, 2007). The study is important for all stakeholders in PA education interested in understanding if effective mentoring correlates with increased faculty job satisfaction. To support the expansion of PA education and maintain the quality of clinical training, stakeholders in PA education need a greater understanding of the use of mentoring as a professional development tool. PA program directors, senior faculty, and administrators

interested in mentoring as a tool for faculty development gained a broader sense of the current state of mentoring relationships in PA education. In addition, this study attempted to fill the gap in the literature on how mentoring practices in PA education correlate with faculty perceived levels of job satisfaction. Also, quantitative data collected helped answer if effective mentoring correlates with faculty intentions to stay in PA education.

Rationale

Fostering positive mentoring relationships in PA education has the potential to impact faculty perceived levels of job satisfaction and faculty turnover intentions. With current projections for the increased need for PA educators and the high turnover rate of new faculty, more data was needed on the current trends of mentoring utilization in physician assistant education (Graeff et al., 2014). The correlation of mentoring with faculty satisfaction and intent to stay in their current role was also important.

Research Questions

Four research questions were used to frame this study.

Research Question 1

RQ1: What forms of mentoring relationships are currently being utilized in PA education?

Research Question 2

RQ2: To what extent, if any, do perceived levels of mentoring effectiveness correlate with PA faculty perceived levels of job satisfaction?

Research Question 3

RQ3: To what extent, if any, do perceived levels of mentor effectiveness correlate with reported faculty turnover intentions?

Research Question 4

RQ4: To what extent, if any, does mentoring act as a moderator between faculty job satisfaction and faculty turnover intentions?

Definition of Terms

For this study, the following definitions were used and applied to the study and the analysis of the results.

Faculty Academic Success

"The effective teaching, research productivity, engagement in appropriate service committees and achievement of reappointment and/or tenure and promotion." (Falzarano, 2011, Appendix B)

Faculty Academic Socialization

Faculty academic socialization is the opportunity for faculty to assimilate to the values, beliefs, and implicit and explicit expectations for behavior, specific to the academic institution. (Falzarano, 2011)

Mentoring

An interpersonal professional connection that provides both personal and professional development that is accomplished by the exchange of ideas, the transfer of knowledge and the psychological support offered to participating individuals (Germain, 2016).

Mentor

A mentor is a "senior faculty member who provides support, guidance, and advice to a mentee or protégé" (Falzarano, 2011, Appendix B)

Mentee/Protégé

A mentee or protégé is someone seeking wisdom, guidance, or specific skill development (Carey & Weissman, 2010; Trube, 2015).

Mentoring Effectiveness Scale

The Mentoring Effectiveness scale is a 12-item Likert-type rating scale that evaluates 12 concrete, measurable behavioral characteristics, and responsibilities of the mentors (Berk et al., 2005).

Effective Mentoring

Effective mentoring is one that optimizes protégé "productivity, acclimation, and professional enhancement" (Faurer, Sutton, & Worster, 2014, p. 152).

Formal Mentoring

The institution or organization establishes the formal mentoring relationship and develops specific goals, schedules, and guidelines for participants (Law et al., 2014).

Informal Mentoring

Informal mentoring is a less rigid approach to relationship development that naturally develops over time, out of mutual interests, research initiative, connection or colleague relationships (Law et al., 2014).

Job Satisfaction

Locke (1976) defined job satisfaction as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences (Locke, 1976, p.1304).

Physician Assistant

A physician assistant (PA) is a nationally certified and state-licensed medical provider trained in the medical model of general medicine to practice autonomously or in a collaborative relationship with other members of a patient's healthcare team. PAs with extensive training in diagnostic and therapeutic medical decision making care for patients across the lifespan (AAPA, 2016).

Employee Retention

Employee retention is the ability of an organization to keep employees as part of the current workforce (Ries et al., 2012).

Turnover Intention

The turnover intention is a measurement of an employee's intent to leave their current position (Xu & Payne, 2014).

Job Description Index

The job description index is an instrument designed to measure employee satisfaction with five facets of their jobs, including satisfaction with coworkers, the work itself, pay, opportunities for promotion, and supervision (Job Description Index, 2016).

Assumptions and Limitations

Measuring the mentoring practices and how mentoring impacts job satisfaction and intent to stay in academia can be challenging. Many variables have the potential to impact reported levels of job satisfaction and faculty intent to stay in their current role. Although the study attempted to discern effective mentoring relationships, this process can be highly individualized. Mentoring relationships are not standardized, and thus the impact of the relationship can be highly variable. It was beyond the scope of this study to account for gender, personality types, and psychological well-being as possible influential factors. When examining the correlation of mentoring on job satisfaction and turnover intentions, other potential influences on participant self-reported data were important to consider.

Nature of the Study

This chapter presented the current and projected growth in PA educational programs, with an increasing need for more PA educators. With most PA faculty transitioning from clinical

practice to academia, many possess limited academic related skills and very little exposure to the culture of higher education. Strategies that can help transition faculty from the clinic into higher education will be critical to sustaining the infrastructure of PA education. Ries et al. (2012) reported organization led faculty development that employs mentoring for new faculty correlated with greater perceptions of faculty job satisfaction.

This quantitative study investigated current practice related to effective mentoring in PA education and mentorships connection with job satisfaction and turnover intentions. A national survey of PA educators was used to gather data to discern if a correlation existed between effective mentoring, job satisfaction, and faculty turnover intentions. Additional consideration was given to utilizing statistical analysis to investigate if, or to what extent, mentoring modifies faculty job satisfaction and turnover intentions.

Organization of the Remainder of the Study

A review of the literature is presented in chapter two. Chapter three includes a description of the research design, methods, limitations, and ethical considerations. An examination of the results is presented in chapter four. Chapter five focuses on the general conclusions and implications of the study, as well as recommendations for future research.

Chapter II: Literature Review

Introduction

Approximately 63% of current PA faculty are new to higher education, having been in their current role for three years or less (PAEA, 2013). Mentoring relationships are recognized as an important part of guiding new faculty in their adjustment to the culture of academics (Carmel, 2015; Dunham-Taylor et al., 2008; Faurer, Sutton, & Worster, 2014; Mayer et al., 2014). Guiding new faculty in the acquisition of skills, as well as offering advice on daily job functions and work-life balance, mentoring offers support in assimilating to a new environment (Gustin & Tulsky, 2010). In addition to novice educators, faculty who engaged in supportive mentoring relationships throughout their career correlate with greater intentions to stay in academia (Eaton, Osgood, Cigrand, & Dunbar, 2015). Researchers found institutions that value and encourage colloquial and supportive mentoring relationships have a high correlation with faculty intent to stay (Mylona et al., 2016; Xu & Payne, 2014). A theoretical framework provides the backdrop to understanding the interplay between the three constructs of mentoring relationships, job satisfaction, and faculty turnover intentions. The remainder of the chapter covers literature reviewed as it relates to mentoring, job satisfaction, and PA faculty retention.

Theoretical Framework

Social exchange theory. With roots dating back to the 1920s, social exchange theory (SET) is one of the "most influential conceptual paradigms for understanding workplace behavior" (Cropanzano & Mitchell, 2005, p. 874). Bringing together theorists across disciplines of social psychology, anthropology, and sociology, views of social exchange have emerged with a consensus that the basic tenants are rooted in social interactions that lead to resulting obligations (Cropanzano & Mitchell, 2005; Emerson, 1976). These interactions are limited to

the social context in which actions of one person are contingent on the behavior of another (Cropanzano & Mitchell, 2005; Emerson, 1976). In this interdependent and contingent pattern of interaction obligations are exchanged, and a relationship between the two individuals forms. The phenomenon of SET is rooted in the norm of reciprocity and based on the exchanges between the two parties that form the foundation for the development of high-quality relationships (Dawley, Andrews, & Bucklew, 2010).

Dawley et al. (2010) suggested that SET defines relationships as successful if both parties feel they are gaining something of value in a fair and mutual exchange. Evidence of reciprocity within an organization is in the expectations between employer and employee. For example, an employee who feels they are getting a fair salary for the work they do within a company, theoretically, would be more motivated to offer dedication and heightened performance to complete a fair exchange for their monetary compensation. Dawley et al. (2010) described social exchange relationships wherein employers demonstrate they value and respect their employees. In exchange, employees offer increased dedication to the company. The increased dedication is evidenced by better punctuality or missing fewer days of work (Dawley et al., 2010). The basic tenant of reciprocity is a belief that exchanges are fair and equal, which frames the exchange rules of interdependence. Within the interdependence framework, subsequent trusting relationships develop within an organization. Thus, the theoretical underpinnings of SET focus on organizational behavior that leads to both loyal and mutually committed relationships (Cropanzano & Mitchell, 2005).

Social exchange theory not only frames the rules of exchange but also addresses the resources often exchanged for both short-term and long-term rewards. Cropanzano et al. (2005) described the economic (love/status) and socioemotional (money/goods) exchanges traded within

varying relationships. Value and respect are equal to, if not more beneficial than, salary in the social context of work relationships. Mentoring is one modality that can be viewed by employees as a greater investment in their personal and professional development. SET then would suggest that in return for the employer's investment, employees will reciprocate a social exchange with increased loyalty (Cropanzano et al., 2005). Cropanzano et al. (2005) proposed that mentoring, based on SET, has the propensity to strengthen existing reciprocal relationships within the organization, increasing employee loyalty and retention.

Based on the tenets of SET and the mutual rewards exchanged by each party, the context for this study can be drawn from the organization, supervisor support and work itself that encompasses employee job satisfaction. Dawley et al. (2010) found that employees gaining adequate economic and socioemotional outcomes from the organization may reciprocate with increased productivity or less intent to leave. Additionally, mentoring relationships have the potential to increase employee satisfaction by investing greater resources in an employee than is dictated in a normal monetary contractual agreement (Dawley et al., 2010). Utilizing mentoring as a tool for investing in the socioemotional aspects of employees can yield a far greater return, if it promotes a greater intention to continue employment with the organization. Contextualized in the SET framework, mentoring offers a possible solution to increasing commitment of individuals within an organization and a useful theory for investigating the mentoring relationships and mentorship's effect for PA educators.

Social development theory. The mentoring relationship can also be explored in the philosophical framework of learning theory. Rooted in the child development learning theories of Lev Vygotsky, mentoring can be viewed in the social roles of cognitive development and knowledge transfer (Kahle-Piasecki, 2011; Social Development Theory [SDT], 2016). A

fundamental aspect of Social Development Theory is the importance of social interaction and the communities influence on learning and role development (Mcleod, 2014). Vygotsky's theory (1962) conveys three major themes important to social interaction and the development of knowledge. Beginning at a social level, the interaction between people and the environment builds the first concepts of knowledge. The personal or professional knowledge from the mentor transfers to the protégé through an established relationship. The protégé, initially acting in a more dependent role, grows into a more autonomous role as knowledge gained from social interactions is moved to a known mode of operation (Kahle-Piasecki, 2011). Secondly, Vygotsky frames learning from the knowledge shared by the More Knowledgeable Other (MKO) to the learner (SDT, 2016). Thirdly, the expert, or one with a higher ability or better understanding, can transfer that knowledge on a specific task to the learner through modeled behavior (SDT, 2016).

In the mentoring relationship, the mentor is assumed to have knowledge that the protégé does not. Thus, effective transmission of that knowledge to the protégé through interaction and observation with the mentor serves as the stimulus for new learning (Kahle-Piasecki, 2011). Bandura (1971) also focused on learning in the social environment, emphasizing the importance of observation and experiential learning in cognitive development. Apprenticeship, known less formally as "see one, do one, teach one," is acknowledged in western medicine as the traditional training model for developing skills needed to perform clinical procedures (Robey, 2010). Utilizing a similar approach for knowledge transfer, faculty mentoring can disseminate new knowledge to the protégé based on social interactions. As the MKO, the mentor transfers knowledge to the protégé in a step-wise fashion (SDT, 2016). This progression moves from

observation to modeling, to the application of the learned skill or behavior, resulting in the construction of new knowledge (Kahle-Piasecki, 2011; SDT, 2016).

Knowledge transferred through guided and supported learning is important, as is, the relational role of mentoring. Rooted in the socialization of the individual to the institution, mentoring provides a supportive environment that meets the needs of new faculty. This important role of socializing and supporting faculty while assimilating to the culture of higher education helps new educators develop a professional identity in the new environment (Kumar, 2011). Researchers have applied this theory to the mentor-protégé relationship, emphasizing the social support and better role adaptation for new faculty supported in a caring environment (Blauvelt & Spath, 2008; Snelson et al., 2002). Application of the socioemotional support offered from mentoring to the work environment enhances work relationships and increases overall faculty job satisfaction (Blauvelt & Spath, 2008; Snelson et al., 2002). Rettenmeir (2011) concluded that successful mentoring relationships hold the capacity for creating an environment wherein faculty feel valued and can more easily assimilate into a new role.

In offering socioemotional support, the mentor role expands beyond skill development to a broader focus on the personal and intrinsic factors associated with job satisfaction. Thus, mentoring promotes increased engagement for the protégé within the institution. Social development theory and social-cognitive theory frame the interplay of personal and professional development within the social environment of higher education (Kumar, 2011). Investigating the interplay of these two theories, Kram (1985) identified the career and psychological mentoring functions that exist within a developmental relationship. The model of Mentoring at Work identified the functions of the mentor in two distinct categories (Kram, 1985). The first, career development, includes "sponsorship, exposure and visibility, coaching, protection and

challenging assignments" (Falzarano, 2011, p. 93) that lead to greater professional development and success. Second, the psychological functions of mentoring are "role modeling, acceptance, confirmation, counseling, and friendship" (Falzarano, 2011, p. 93). Subsequent research on workplace mentoring has tested and confirmed the functions of mentoring and the importance of psychosocial and career development in mentoring relationships (Raggins, Cotton, & Miller, 2000; Scandura, 1992). The ability for the mentoring relationship to meet the protégé perceived needs for both psychosocial support and career development has the potential to increase protégé job satisfaction and commitment to the organization (Kraimer, Seibert, Wayne, Liden, & Bravo, 2011). The tenets of social development, social exchange and the theory of mentoring at work, provide a useful framework to explore how mentoring supports the career path of clinicians transitioning into academia. The framework also supports the associated journey of novice educators assimilating to the culture of higher education and learning the necessary skills for academic success (Kumar, Roberts, & Thristlethwaite, 2011).

Mentoring

Definition

The terms "mentoring" and "mentorship" are used to describe varying ideas, characteristics, and descriptions of various roles and functions of individuals who participate in these relationships (Carey & Weissman, 2010; Trube, 2015). Mentors are described broadly as a developer, counselor, advisor, or coach (Carey & Weissman, 2010; Trube, 2015). Mentees, or protégé, have been defined as someone seeking wisdom, guidance, or skill development (Carey & Weissman, 2010; Trube, 2015). These broad definitions lead to a broad understanding of the relationship that exists between participants in a mentoring relationship. The broad definition leaves the opportunity for many variables in describing the different characteristics that exist in

the role and function of the mentoring relationship. Often characterized by the specific environment and context for which the relationship develops, mentoring relationships serve varying modalities in both professional and personal development (Carey & Weissman, 2010; Trube, 2015). Various terms are used to describe the mentoring relationship, such as career coach, psychological support, role model, or professional associate (Carey & Weissman, 2010). However, all terms seek to establish the formation of a reciprocal, supportive working relationship. The relationship between practical knowledge and emotional support are offered to promote individual growth and development (Trube, 2015). Germain (2011) further defined this relationship as an interpersonal professional connection that provides both personal and professional development. Personal and professional development is accomplished by the exchange of ideas, the transfer of knowledge, and the psychological support exchanged between participating individuals.

History

With the origins of mentoring in Greek Mythology, the concept of a formal mentoring relationship resulting in knowledge transfer stems from ancient traditions (Trube, 2015). In Homer's ancient Greek tale, King Odysseus, before leaving to fight in the Trojan War, appointed a friend to serve as a mentor for his son (Kahle-Piasecki, 2011). The wisdom and good counsel that transpired from this relationship established the earliest illustration of the mentor relationship (Trube, 2015). Relationships reliant on knowledge transfer and the passing on of wisdom are also the roots of training medical personnel. The progression of medical training from a resident to a fellow, to a physician, exemplifies the process of students learning the art of medicine that facilitates various types of supervisors/protégé, mentor/mentee relationships (Trube, 2015). PAs, trained in a generalist model of medical education, also rely on the various

on-the-job training from supervising physicians to continue to gain clinical skills after the initial academic training (AAPA, 2016). This experiential learning, facilitated by a mentor or supervising physician, is critical to becoming a competent medical provider. Beyond utilization in medical training, mentoring relationships have been recognized in education and the business sector for many years. Mentoring across these sectors is recognized for promoting individual skill development, increased work productivity and greater job satisfaction (Blood, et. al. 2012; Kahle-Piasecki, 2011; Ragins & Cotton, 1999; Xu & Payne, 2014). Within higher education, mentoring relationships assist protégé in adjusting to academic life and help novice faculty acquire skills necessary for success in the new environment (Dunham-Taylor, et al., 2008; Eaton, 2015; Faurer, Sutton, & Worster, 2014; Rettenmeir, 2011).

Types of Mentor Relationships

Introduction

The traditional model of the dyad relationship of senior faculty members paired with a younger faculty protégé is the most common form of mentoring relationships in medical education (Law et al., 2014). Effective for many junior faculty in the transition from the clinic to academia, this model has served as the traditional understanding of the mentoring relationship. Gustin and Tulsky (2010) emphasized that successful mentoring relationships were contingent on the match, quality, and ability of the partnership to meet perceived needs of participants. A quality and effective mentor made themselves available and accessible to their protege and had significant experience in academia (Gustin & Tulsky, 2010). A quality protégé was one who reflected on the various domains of the current work situation, clearly identified specific goals and challenges and effectively communicated those needs with a mentor (Carey &Weissman, 2010). Without clear communication, expectations and common goals, mentoring relationships

can be perceived as ineffective (Heggmann, 2014). Additionally, as new faculty assimilates into an academic role, a healthy mentoring relationship must be able to shift to meet the growing needs of faculty development throughout the protégés career. However, one mentor may not be able to meet the needs of faculty in all the various domains of work, including work-life balance, goal setting, scholarly activity, service goals, professional development, and institutional culture (Law, et al., 2014). Multiple mentors may be necessary to meet the needs of protégé across various work domains. Also, over the course of a protégés career, they may need different mentors (Gustin & Tulsky, 2010).

As an alternative to the traditional model, scholars conclude that being open to group mentoring relationships can offer greater support across the work domains (Carey & Weisman, 2010; Holmes et al., 2010; Steele, Fisman, & Davidson, 2013). Utilizing learning networks (Holmes, et al., 2010), peer-based mentoring groups (Balmer, D'Allessandro, Risko, & Gusic, 2011), mentorship committees (Steele, Fisman, & Davidson, 2013), and community mentoring (Carey & Weissman, 2010), multiple individuals can more easily meet the specific career development needs of a protégé. When assessing components of a formal scholarship program for new medical faculty, Balmer et al. (2011) found a general pattern of faculty needs for mentoring across a career: from an initial one-on-one mentoring to multiple mentors, and then lastly into a peer mentoring group. The continued growth from close guidance to a wider circle of working relationships plays an important role in shifting mentoring delivery to meet changing faculty needs. Similarly, Steele et al. (2013) found in both focus and group interviews with junior faculty that a consistent theme of well-designed mentorship committees could best meet diverse faculty needs. Various forms of mentoring are important to consider when tailoring mentoring programs to meet the needs of junior faculty. Changes in the types and delivery of

mentoring will foster professional growth and increasing job satisfaction throughout faculty careers (Law et al., 2014).

Formal versus Informal

The establishment of mentoring relationships varies with some institutions offering formal mentor assignments, while others encourage informal mentoring. To encourage informal mentorship, institutions provide opportunities for mentoring relationships to grow organically. The basis of informal mentorship is on the natural development of a relationship or a shared experience. The institution or organization often establish formal mentorship and typically is planned with specific goals, schedules, and guidelines developed for participants (Law et al., 2014). A formalized mentor/protégé relationship guided by objectives, process evaluations, expressed goals, and expectations for party members fosters protégé assimilation to a new environment (Law et al., 2014). In a study conducted in a pharmacy program with high proportions of junior faculty, Jackevicius et al. (2014) highlighted the success of a formal faculty mentoring program for junior faculty. Researchers found that 90% of respondents indicated career development and guidance from mentoring contributed to higher perceived levels of job success (Jackevicius et al., 2014). However, researchers have also highlighted the drawbacks of formal mentoring programs. The biggest disadvantage was that mentor and protégé arrangements "felt forced," often resulting in personality conflicts (Law et al., 2014).

Informal mentoring is a less rigid approach to relationship development that naturally develops over time, out of mutual interests, research initiatives, connection, or colleague relationships (Law, et al., 2014). Although necessitating more time to develop than a formally assigned mentor/mentee relationship, informal mentoring is advantageous for fostering a relationship constructed initially from a meaningful connection that can lead to increased

longevity of the partnership (Law et al., 2014). Working within this informal relationship, members work together toward a mutually common goal (Gustin & Tulsky, 2010). These relationships built on mutual interest can form more naturally and often have less potential for personality conflicts between mentor and protégé (Germain, 2016; Law et al., 2014). However, without any formal expectations and specific outcomes within the relationship, these informal connections can be less effective in meeting productivity measures and meeting professional development goals (Hegmann, 2014).

Internal versus external

Lack of available faculty who are experienced to serve as mentors is a barrier to the implementation of mentoring programs (Hegmann, 2014; Law et al., 2014; Min, 2003;). Jackevicius et al. (2014) noted that survey respondents valued the seniority of their mentor, characterizing senior mentors as those possessing significantly more experience in academia. Lack of senior level faculty, or less experienced faculty taking on mentoring roles for which they are underprepared, can result in a failed or less than the ideal mentoring relationship (Jackevicus et al., 2014; Law et al., 2014). For faculty to access more senior level faculty, researchers propose a solution of developing mentor/ protégé relationships across different institutions (Jackevicus et al., 2014; Law et al., 2014). Law et al. (2014) highlighted the importance of cross-institutional mentorships to provide skilled mentors when a deficiency of possible mentors within a single institution exists. Seeking an external mentor who possesses similar career goals and aspirations can be advantageous. These relationships can provide a confidant outside of university leadership to explore career questions and advice without the risk of affecting the employment relationships within the institution (Law et al., 2014). Also, Hegmann, (2014) found mentoring that targets specific skill development, such as an increase in scholarly

production, may be most productive with a mentor from outside the institution. However, participation in a formal mentoring program outside the institution of employment does not provide the protégé with the same access to deepening relationships with internal colleagues and academic socialization specific to the institution (Law et al., 2014).

Mentoring in Transition

Mentoring serves an integral role in encouraging employee personal and professional development (Dunham-Taylor et al., 2008; Eaton et al., 2015; Faurer, Sutton, & Worster, 2014). Dunham-Taylor et al. (2008) concluded, "Mentoring can be the single most influential way to help in the successful development and retention of nursing faculty" (p. 337). Essential to promoting success in the academic arena is providing a guide for new faculty to navigate the triplicate role of teaching, scholarship, and service. New PA educators often transition directly from clinical practice to PA education. Without any formal training in education, many faculty discover the transition into traditional academic life is difficult, finding it challenging to navigate and manage all aspects of the "three-legged stool" of faculty life; scholarship, service, and teaching (Orcutt, 2007). Orcutt (2007) described the calling of practitioners who choose to become educators, leaving full-time clinical practice to come alongside students, as a well-intentioned choice that can quickly unfold into disillusionment when they are "faced with the reality of academic life" (p. 61). Similarly, Dunham-Taylor et al. (2008) concluded that the daunting task of transitioning from the clinical setting to academia without mentoring is, "allowing and expecting new faculty to make these adaptations alone which lead to a sense of isolation, uncertainty, frustration, and lack of satisfaction with the position as an educator" (p. 345).

Institutional support can positively influence faculty intentions to stay in their current position by assisting new faculty in learning important cultural and institutional norms (Dunham-Taylor et al., 2008). Mentoring relationships that help the protégé navigate institutional culture encourage participation in the broader academic community, and clearly outline the institute specific expectations can ease the transition and encourage career longevity (Graham & Beltyukova, 2015; Gustin &Tulksy, 2010). Tracy, Jagsi, Starr, and Tarbell (2004) reported outcomes of a single medical academic institution mentoring program in which participants in mentoring relationships felt better supported by the institution and had more satisfying collegial relationships. Authors acknowledged the study's limitations of generalizability because of the small sample size and single institution (Tracy et al., 2004). However, even with study limitations, a majority of study respondents reported socioemotional benefits of mentoring programs with 93.8% reporting "having someone to turn to" and 83.3% of "having a role model" related to greater academic success (Tracy et al., 2004, p. 1846). Similarly, Falzarono (2011), in a qualitative study, reported the most important function of a mentor for academic faculty was," having someone to go to" (p. 11). The important theme of feeling a sense of connectedness and supported in the new academic environment is consistent across the literature on faculty mentoring (Falzarono, 2011; Tracy et al., 2004). Faculty that feel a greater amount of support and gain guidance on the implicit and explicit expectations of an organization have reported greater job satisfaction and greater commitment to staying in academia (Dunham-Taylor et al., 2008; Tracy et al., 2004). Ensuring faculty understand expectations and feel supported in their work environment are important to faculty success in the academic role. Steele, Fisman, and Davidson (2013), in assessing junior medical faculty perceptions of mentoring, found that mentorship emerged with the strongest correlation with faculty ratings of overall job satisfaction.

Mentoring and Job Satisfaction

An abundance of evidence indicated that mentoring relationships were perceived as beneficial to novice faculty transitioning from the clinic to academia (Graham, 2012; Law et al., 2014; Mayer, 2014; Xu et al., 2014; Zip, Maher, & Falzarano, 2015). Although some literature focused on novice faculty, mentoring also had a strong correlation with improvement in job satisfaction across various stages of employment (Faurer, Sutton, & Worster, 2014; Gustin & Tulsky, 2010; Straus, Johnson, Marquez, & Feldman, 2013; Xu, et al., 2014). Eby et al. (2013) highlighted the benefits of mentoring including better job performance, more positive attitudes related to work, and even improved health outcomes for all participants involved in mentoring relationships. Similarly, Sawatzky and Enns (2009) found mentored nursing faculty with varying years of academic reported increased job satisfaction and overall improvement in teaching and scholarship. Regardless of the stage of mentoring, or the years one has been in a current job, the data supports a correlation between participant's perceptions of the success of the relationships and the correlation with improvement in overall job satisfaction (Dunham-Taylor et al., 2008; Raggins, Cotton, & Miller, 2000; Xu et al., 2014).

Mentor Effectiveness

Research on mentoring and job satisfaction have also determined that no mentoring relationships can be equal in meeting the needs of protégé or effective at promoting academic success (Raggins, Cotton, & Miller, 2000). Protégé who perceive mentoring as ineffective, or have a personality conflict with a mentor, report lower levels of enjoyment and satisfaction with work (Raggins, Cotton & Miller, 2000). Xu and Payne (2014) confirmed Raggins, Cotton, and Miller's (2000) findings that participant "satisfaction with mentoring is more important to the prediction of job satisfaction and turnover intentions than the mere presence of a mentor" (p.

519). To assess the correlation between mentoring and job satisfaction, the effectiveness, and satisfaction with the mentoring, not just the existence of a mentoring relationship, must be measured (Xu & Payne, 2014). Researchers across various disciplines have attempted to define the components and characteristics associated with participant opinion of what constitutes effective mentoring (Dunham-Taylor et al., 2000; Faurer, Sutton & Worster, 2014). Acknowledging that mentoring can be very specific to individual needs, researchers still have found commonalities in the elements related to effective mentoring (Faurer, Sutton & Worster, 2014; Dunham-Taylor et. al, 2000). Effective mentoring is one that optimizes protégé "productivity, acclimation and professional enhancement" (Faurer, Sutton & Worester, 2014, p. 152). Dunham-Taylor et al. (2000) further noted that effective mentoring happens in a collaborative environment in which clear expectations are outlined and evaluated.

Measuring Mentor Effectiveness. In addition to defining an effective mentor, significant research has also been devoted to creating valid instruments for evaluating the experience of both mentor and protégé (Law et al., 2014; Xu & Payne, 2014). Although many tools exist in the literature to measure the constructs of mentoring, many of these instruments focus on evaluation of mentoring programs (Law, et al., 2014), the frequency of mentoring meetings (Xu & Payne, 2014) or institutional and administrative support for mentoring initiatives (Berk, Berg, Mortimer, Walton-Moss, &Yeo, 2005). Minimal literature on mentoring in health-related academic environments has specifically studied mentor effectiveness. Berk et al. (2005) noted that mentoring programs are increasing in academic medicine, but very little research devoted to creating accurate assessments to measure the effectiveness of these relationships. Additionally, many available tools are limited to the specific context of an occupation, or an institution-specific mentoring program and are not applicable to the broader mentoring

community (Berk et al., 2005). Berk et al. (2005) concluded many mentoring evaluation tools that are available do not have direct application to faculty and more specifically medical academic faculty. Also, many mentoring measures do not have summated rating scales or the ability to have subscale scores, limiting the utility of the available tools. Lastly, many existing measures are short, limited to a single opinion of overall satisfaction, instead of evaluations of the varying characteristics of the mentoring relationship (Morzinski, Diehr, Bower, & Simpson, 1996; Xu & Payne, 2014).

Due to deficient measures for a general mentoring effectiveness scale in academic medicine, an ad hoc committee at John Hopkins University was formed to create a measure to quantify better the constructs related to a mentees' perception of the effectiveness of a mentoring relationship in medical related fields (Berk et al., 2005). After meetings and extensive review of the literature over twelve months, the content from the committee meetings was condensed into twelve statements. These statements were then adapted after panel review for content-related validity, establishing the scale item statements to be included in the instrument. Berk et al. (2005) acknowledged that the tool has been primarily utilized to evaluate the effectiveness of individual mentor/mentee relationships. Consequently, no statistical sample was collected of mentor ratings, so validity coefficients and standard indices of internal consistency and reliability on the tool were not calculated (Berk et al., 2005). However, the instrument to measure mentor effectiveness aligned with Kram's (1985) theoretical framework for both the psychological and career development components that mentoring relationships offer to a protégé. Additionally, the tool content aligned with Faurer, Sutton, and Worster (2014) and Dunham-Taylor et al.'s (2000) general findings of the elements of effective mentoring including productivity, socialization, collaboration, validation, and institute expectations, productivity, and evaluation.

Job Satisfaction

Theoretical Framework. Job satisfaction is one of the most highly studied job attitudes in organizational behavior (Canon, 2014; Judge & Kammeyer-Mueller, 2012). At the basic core of job satisfaction are employees' outlook and attitude toward his or her job. The collection of employee attitudes about specific job factors equates with either overall positive emotions, which is job satisfaction, or negative feelings, equating with job dissatisfaction (Spector, 1997). Historically, job satisfaction had its roots in studies first conducted as early as 1924 by Elton Mayo at the Harvard business school (Gallimore et al., 1992). These studies are known as "The Hawthorne Studies," investigated workspace illumination effect on worker productivity (Gallimore et al., 1992). Researchers found worker productivity could be increased with changes to the work environment (Gallimore et al., 1992). The novelty of these findings was an early indication that increases in monetary compensation were not the only motivator for personnel productivity. The conditions of the work environment were also closely connected to productivity. A better understanding of how work environments affected productivity initiated further investigations into other factors related to job satisfaction (Gallimore et al., 1992). To grasp the meaning of the broad construct of job satisfaction, Green (2000) pointed to several definitions in the historical literature that help to define the term better. Hoppock's (1935) definition frames job satisfaction as a culmination of the "psychological, physiological, and environmental circumstances" (Green, 2000, p.16) that lead employees to enjoy the job. Vroom's definition from 1964 proposed using the terms "job attitude" and "job satisfaction" interchangeably when discussing the employee's job experience (Green, 2000, p.16). Lastly, Locke (1976) focused on the positive emotional state one experiences because of the overall job

experience. These interrelated definitions, although not universal in meaning, all hold a theme of workers job-related emotions as they apply to their job experience.

The exchanges between the organization and employee both influence and drive much of the research aimed at quantifying job satisfaction. Spector (1997) outlined the importance of job satisfaction as an indicator of organizational culture, operations, and influential relationships between employer and employee. Job satisfaction as an indicator of employee attitudes is applied as a tool to assess institutional culture related to human welfare by measuring the effectiveness of how the organization is meeting employee needs. Additionally, job satisfaction can be an assessment tool, giving the organization feedback on areas of growth in satisfying the varying socioemotional and economic needs within the workplace.

Four broad frameworks of job satisfaction emerged in the literature on job satisfaction: in content theory, process theory, situational theory and measurement and evaluation theory. Content theorists (Herzberg, 1966; Maslow, 1954) proposed that fulfillment of needs and attainment of values are indicators of employee job satisfaction (Locke, 1976). Thus, according to content theory, job satisfaction is realized by meeting employee needs. As a content theorist, Herzberg (1966) viewed job satisfaction through the specific components contributing to better work attitudes. Herzberg emphasized the importance of work itself as the greatest source of job satisfaction and views job satisfaction in two dimensions, including the intrinsic and extrinsic motivators. The motivator-hygiene theory identified motivators, or satisfies, related to either the work itself, including opportunities for advancement, or the work environment, which includes interpersonal interactions (Herzberg, 1966). Before the motivator-hygiene theory, single scales had been utilized to measure job satisfaction. However, Herzberg's work and the emergence of

the new theory initiated a more valid and reliable means of measuring specific constructs and themes related to motivators and work-related attitudes.

Process theorists proposed an alternative explanation of job satisfaction that emphasizes the interaction between expectations, values, and needs (Green, 2000). Process theorists (e.g., Vroom, 1964) viewed job satisfaction through a social lens. Job satisfaction is the interaction of the individual with the individual's daily tasks, all in the broader relationships established within the organization (Green, 2000). Situational theorists (e.g., Glisson & Durick, 1988) framed job satisfaction as the interplay between the characteristics of the employee, the job task, and the work organization (Boeve, 2006). Glisson and Durick (1988) furthered this work by linking job satisfaction and the employees resulting organizational commitment.

Measurement-evaluation theories, too, have purported explanations for job satisfaction, specifically in the development of tools to quantify factors that contribute to a positive attitude about work. Measurement evaluation theories have also been important for the development of instruments that take an unobservable construct and make it a measurable score of an employee's current emotion toward a job (Green, 2000). The Job Description Index (JDI) and the Minnesota Satisfaction Questionnaire (MSQ) are facet-specific questionnaires that are recognized in the literature as the most frequently used, reliable and valid instruments to quantify the specific levels of job satisfaction (Boeve, 2006; Green, 2000). The JDI is unique among measures because of the continual revision to the instrument by the JDI research group (Zicker, 2016; Kinicki et al., 2002). The JDI questionnaires asks and scores "Yes" (3), "No" (0) or "?" (1) to a series of statements related to work in five domains; work itself, advancement opportunities, pay(salary), supervisor support, and co-worker relations (Boeve, 2006; Green, 2000). Due to its continual revision, the JDI persists as a valid and reliable tool to measure the specific facets

related to job satisfaction (Zicker, 2016). Also, the Job in General Scale (JIG) measures respondent's overall perception of satisfaction with a current job. The abridged version of each scale, including the JDI and JIG, have been found to have similar validity and reliability in job satisfaction research.

Utilizing the theoretical constructs and job satisfaction instruments, researchers across various medical disciplines have examined job satisfaction including but not limited to: physician assistant education (Boeve, 2006; Heggman, 2014) academic medicine (Chung et al., 2010; Nalliah & Allareddy, 2016; Ries, et al., 2012), nursing faculty (Bittner & O'Connor, 2011: Roughton, 2013), pharmacy (Conklin & Desselle, 2007a), dental (Shigli et al., 2012), and various allied health higher education professionals (Beavers, 2010; Romig, Maillet, & Denmark, 2011; Undie & Passmore, 2010). Thus, studies across various medical disciplines have been done to examine faculty satisfaction. Various methodologies employed across the diverse studies shared a similar purpose of gaining a better understanding of the factors related to faculty perceptions of job satisfaction. Within medical education, job satisfaction plays an important role in faculty intent to stay in academics.

Job Satisfaction and Retention

Research in business, medical sciences, and education support that a correlation exists between turnover intentions and faculty job satisfaction (Garbee & Killacky, 2008; Rosser, 2004). However, a causal relationship between the two is hard to discern as much of the literature has focused on correlation studies. Studies that are focusing on job satisfaction, as an avenue to understanding turnover intentions better, have been completed in many academic medical fields assessing faculty perceived levels of job satisfaction and turnover intentions (Dunham-Taylor, 2008; Garbee & Killacky, 2008; Rosser, 2004; Roughton, 2013). Study results

from both quantitative and qualitative studies have found a correlation between faculty job satisfaction and turnover intentions in nursing (Dunham-Taylor, 2008; Roughton, 2013), dentistry (Shigli, Hebbai & Nair, 2012), and medical academic faculty (Mayer et al., 2014). Varying methodology and instruments have been utilized to measure faculty job satisfaction and turnover intentions. However, further research is needed to understand if mentoring influences the constructs of job satisfaction and turnover intentions and how these concepts are related to one another in PA education.

Mentoring in PA Education

Limited literature addresses the current state of mentoring in PA education. To date, results from only one nationwide research study on a specific mentoring program in PA education has been published (Hegmann, 2014). The mentoring program was implemented to assist novice faculty researchers in increasing their production of scholarly publications (Hegmann, 2014). Mentees were matched with mentors across different institutions based on the participant-reported area of research interest. However, the formal mentee program was not well utilized with 59% of assigned mentees having no contact with their assigned faculty mentor, 24% of early-career faculty withdrawing from the program before the matching process, and nine percent of mentees reported leaving academia over the course of the year-long mentoring program (Hegmann, 2014). In the mixed-method follow-up study, Hegmann (2014) reported a lack of communication, unclear expectations, and mentee attrition, as a few barriers to program success.

More research is needed to understand how mentoring relationships increase participant scholarly production and if these relationships offer the broader benefits of mentoring, such as support in the daily aspect of academic life (Fountain & Newcomer, 2016). Mentoring that is

more broadly focused on faculty academic success may provide the support for faculty to feel more confident in daily duties and thus allow more time for greater scholarly productivity (Fountain & Newcomer, 2016). Increased confidence and productivity supports the need for a better understanding of the nature and extent of mentoring for PA faculty. Also, information related to faculty perception of mentoring and its abilities to support both career development and the psychosocial aspects of job satisfaction are important (Fountain & Newcomer, 2016).

Mentoring Effects on Job Satisfaction in PA Education

Mentoring as a tool for faculty development offers protégé focused skill development and psychosocial support for assimilation to academia (Wallace & Stuart, 2014). Mentoring also has correlations with increased protégé perceived levels of job satisfaction (Graeff, Leafman, Wallace & Stewart, 2014; Quincy, Archambault, Sedrak, Essary, Hull, 2012). However, limited studies investigating job satisfaction of PA faculty exist (Boeve, 2006; Graeff et al., 2014). Descriptive data reported in the PAEA (2015) national survey of PA reported levels of job satisfaction related to respondent's professional development, career productivity of scholarly work, and sources of stress. The study is limited with the administration of the survey through program directors instead of solicited directly from faculty members. However, survey data aligns with prior research on faculty job satisfaction, concluding that faculty are most satisfied with PA program curriculum (89.2%) and most dissatisfied with salary (21%) (PAEA, 2015). Prior research on PA job satisfaction has been completed by both Graeff et al. (2014) and Boeve (2006), investigating PA satisfaction with the specific aspects of the educator's role in academia. In an initial groundwork study, Boeve (2006) found that faculty members ranked the work itself as carrying the highest relationship to overall job satisfaction. Also, relational aspects related to work life, such as relationships with colleagues and support from supervisors, also correlated

with increased overall job satisfaction (Boeve, 2006). Similarly, Graeff et al. (2014) in a quantitative descriptive study of PA faculty nationally utilizing the Job Description Index Scale (JDI), found that PA educators value social support networks and professional relationships. Acknowledging the limitation of a low survey response rate, authors conclude enough evidence exists to support that professional relationships influence faculty perceptions of overall job satisfaction (Graeff et al., 2014). This data supports Quincy, Archambault, Sedrak, Essary, and Hull's (2012) findings in an earlier quantitative survey of PA faculty that found colleague relationships formed from participation in a faculty development workshop had a significant impact on perceived levels of overall job satisfaction.

Not only is job satisfaction important, but investigating aspects of faculty job dissatisfaction can be equally informative when looking at strategies to improve faculty satisfaction. PA faculty report high levels of dissatisfaction with academic salaries (PAEA, 2015). The next highest levels of reported faculty dissatisfaction were in promotion potential and faculty development opportunities (PAEA, 2015). To address this dissatisfaction, PA leaders have focused on the professional skills needed to be successful in academia by implementing strategic opportunities for professional development (PAEA, 2015). One developmental strategy utilized is early exposure of PA students to careers in academics. Most clinical PAs have limited exposure to higher education, unlike those in academic roles that were drawn to education early in their career or exposed to the culture of higher education while pursuing a graduate degree (Lindholm, 2004). Due to the nature of PA clinical training, very few students enter PA school with the goal of a career in academia. However, increasing opportunities are being made available to students interested in PA education by offering rotations in academic medicine as well as a new Student Future Educator Fellowship (PAEA, 2015). The fellowship is open to all

PA students interested in a future career in PA education and consists of an intensive two-day program during the annual education forum, focusing on professional development, leadership, and networking. In addition, the Association of Postgraduate PA Programs (2016) reported that Midwestern University offers a post-graduate fellowship in academic medicine. The 12-month fellowship focuses on the education and skills necessary to transition to academia (Association of Postgraduate PA Programs, 2016). Although some training is available in academic medicine, opportunities are still limited, and very few students have access to these types of educational experiences (Hills & Dieter, 2010; Min, 2003; PAEA, 2015).

The second form of professional development aimed at increasing the basic skills of new educators in PA education is the Physician Assistant Education Association (PAEA) sponsored Basic Skills Workshop (BSW), now called Faculty Skills 101 (PAEA, 2016). Designed specifically for new faculty in PA education, the workshop provides participants an orientation into academia and focuses on the skill development needed for new educators (Quincy et al., 2012). Specific instruction on writing instructional objectives, active learning and thriving in the academic environment aimed at helping new faculty develop essential didactic skills (PAEA, 2016). In a post-workshop follow-up survey, Quincy et al. (2012) assessed the BSW impact on faculty perceived mastery of skills, impact on colleague relationship development and the correlation with perceived levels of overall job satisfaction. Quincy et al. (2012) concluded that colleague relationships formed from participation in a faculty development workshop had a significant impact on perceived levels of overall job satisfaction. Study conclusions not only highlight the impact of professional development but also highlight the importance of relationships for new faculty educators. Also, the strength of the study results increased by capturing respondents that had left PA education. Although only a small number were in this

group, the reports of significantly lower job satisfaction among respondents who had left PA education suggests that job satisfaction may have a correlation with intentions for job turnover (Quincy et al., 2012).

Current research in PA education has quantified varying facets of job satisfaction for PA educators (Boeve, 2006; Graeff, et. al, 2014). However, little research has been done to further investigate the correlation between mentoring, job satisfaction, and faculty turnover intent. Even with previous research, PA educators agree that future research needs to delineate successful retention strategies for PA faculty (Graeff et al., 2014; Orcutt, 2007). Specifically, PA researchers have noted a gap in research related to the practical application of measures that can increase perceptions of job satisfaction and have a correlation with improved retention (Orcutt, 2007). Research related to initiatives developed to address improving job satisfaction and increasing retention is important. Identifying these issues can help academic institutions, administrators and program directors implement changes with greater potential for increasing faculty job satisfaction.

PA Faculty Retention

Gaining a greater understanding of what motivates current PAs to stay in academic medicine has important implications for addressing the barriers to retaining educators. With high levels of faculty attrition, researchers have sought to understand what motivates PA academicians to stay or leave (Quincy et al., 2012). The most frequent reported reason for PAs to leave academia is to return to jobs in clinical practice (PAEA, 2015; Quincy et al., 2012). Research in PA education related to retention of faculty has included annual descriptive statistics in the PAEA annual survey. Data collected from program directors who self-report the number of faculty ending employment, as well as the reason for their departure. However, the validity of

these findings is questionable with potential for reporting bias from program directors and no direct data collected from faculty that has left academia. In an attempt to better understand why PAs leave academic positions, Graham (2012) utilized both quantitative and qualitative research methods to develop and validate a tool to measure PA faculty "intention to stay in academia" (p. iii). Although results were limited by a lack of meaning of the overall item hierarchy, one subset of items did measure a unidimensional construct (Graham, 2012). The institutional support items within the Supportive Environment Subscale represented a high correlation with faculty intentions to stay in academia (Graham, 2012). Within this subscale, having a research mentor reflected a strong "intention to stay" (Graham, 2012). However, in a later article, Graham and Beltyukova (2015) reported of respondents only 5% of faculty reported they were "very likely" to leave the institution for clinical practice (p. 4). Authors acknowledged that this low response of intent to leave might be skewed, as researchers recognize that participants dissatisfied with their current role and planning to leave academia may not have been motivated to complete the survey (Graham & Beltyukova, 2015). Despite study limitations, Graham and Beltyukova (2015) concluded that study results might aid administrators in being able to more clearly see associations between specific facets of faculty work-life and faculty levels of reported "intentions to stay in academia."

In the research related to PA job satisfaction and faculty retention, a paucity in PA education literature exists that specifically addresses the questions: What, if any, mentoring relationships are currently being utilized? Moreover, what are faculty perceptions about mentoring and the importance of those relationships to their overall job satisfaction and intent to stay in academia? Orcutt (2007) highlighted the need for further research on retention tools and strategies that have a correlation with PA faculty job satisfaction and intent to stay in academia.

The association between mentoring and faculty retention furthers the need for research to investigate mentoring relationships in PA education and its correlation with perceived levels of faculty satisfaction and turnover intentions.

Summary

Building relationships are important to PA educators (Graeff et al., 2014). Mentoring relationships offer the potential for creating a supportive work environment that fosters skill development, academic socialization, and increased levels of faculty job satisfaction. Mentoring is recognized for its ability to offer the protégé career guidance, job skills acquisition, and measured success outcomes of increased scholarly publications (Jackevicius et al., 2014). Mentoring relationships are an important aspect of career development for faculty (Jackevicius et al., 2014; Law et al., 2014). Also, researchers report mentoring relationships play a role in meeting the psychological and relational needs of protégé including encouragement, personal connection, and shared values that contribute to better job satisfaction (Jackevicius et al., 2014). PA educators agree that future research needs to delineate successful retention strategies for PA faculty (Graeff et al., 2014; Orcutt, 2007). However, little research has been done to further investigate the correlation between mentoring, job satisfaction, and faculty turnover intent in PA education. Therefore, the purpose of this study was to fill a gap in the literature on the effectiveness of mentoring and determine if any correlation exists with job satisfaction and faculty turnover intentions in PA education.

Chapter III: Methodology

Introduction

The purpose of this study was to investigate the relationship between the effectiveness of mentoring in relation to faculty perceived levels of job satisfaction and faculty turnover intentions for Physician Assistant (PA) Educators in the United States. The study included gathering information related to the nature and extent of the current mentoring practices in PA education.

Research Questions

The following research questions were addressed in this study:

Research Question 1

RQ1: What forms of mentoring relationships are currently being utilized in PA education?

Research Question 2

RQ2: To what extent, if any, does perceived levels of mentoring effectiveness correlate with PA faculty perceived levels of job satisfaction?

Research Question 3

RQ3: To what extent, if any, does perceived levels of mentor effectiveness correlate with reported faculty turnover intentions?

RQ4: To what extent, if any, does mentoring act as a moderator between faculty job satisfaction and faculty turnover intentions?

Variables

The independent variables for this study were: whether an individual is currently or has in the past participated in a mentoring relationship and the total score on the mentoring effectiveness scale. The dependent variables for this study were: job satisfaction scores and faculty turnover intention scores.

Theoretical Framework

Organizational behavior theories offer a framework for better understanding the relationships between mentoring, job satisfaction and faculty intent to stay in academia. For this study, Social Development Theory (SDT) and Social Exchange Theory (SET) provided the framework for the role that mentoring offers as a possible solution to increasing commitment of individuals within an organization. The constructs of SET and SDT provided a useful theory for investigating mentoring relationships and its effect for PA educators (see Figure 1).

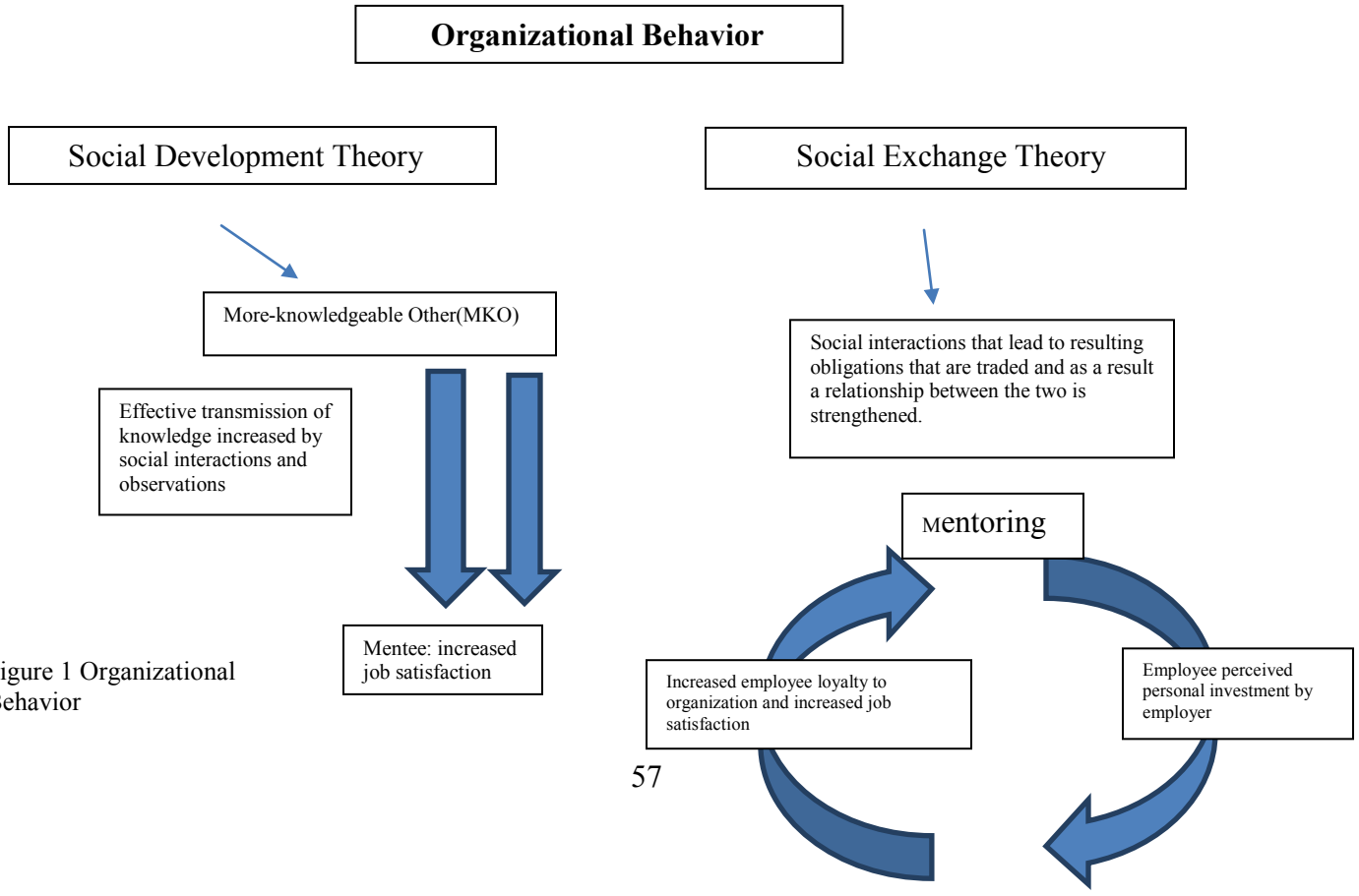


Figure 1 Organizational Behavior

Research Design

This study was a correlative cross-sectional survey research design utilizing quantitative methodology to gather and analyze data surrounding the perception of mentoring on physician assistant faculty perceptions of job satisfaction and intent to leave academia. The study investigated faculty perceptions of the effectiveness of mentoring and if any correlation existed with job satisfaction and faculty turnover intentions.

Data gathered was related to the nature and extent of current mentoring practices in PA education, as well as the relationship between the effectiveness of mentoring, faculty perceived levels of job satisfaction, and faculty turnover intentions. To investigate and then numerically describe the relationship that existed between the variables, a quantitative survey design was utilized (Creswell, 2003). This study utilized a cross-sectional web-based survey design to gather physician assistant faculty attitudes and perceptions at one point in time.

The population for this study included PAs who were certified and employed as full-time faculty members at Accreditation Review Commission on Physician Assistant (ARC-PA) accredited PA programs in the United States. A web-based survey was used to assess current or past involvement in mentoring relationships, mentoring effectiveness, job satisfaction, and faculty turnover intentions. Also, brief faculty demographic information was collected. The survey was brief to encourage increased response rates and encourage full completion of surveys.

Instrumentation and Measures

A survey instrument was created from a combination of The Mentor Effectiveness Questionnaire, Job in General Scale, and the Turnover Intentions Measure. In addition to these validated tools, a short section of demographic questions was included in the survey.

Validity and Reliability

Job satisfaction. After review of the literature on job satisfaction and related instruments to measure satisfaction (see Chapter 2, Literature Review) the Job in General Scale (JIG) was determined to be the best tool for answering the proposed research questions. As a self-reporting tool, the JIG measures overall job satisfaction. The tool consists of a short list of phrases and adjectives that describe different aspects of the job in general. Cronbach's coefficient alpha of the JIG is .92 (Brodike et al., 2009). With a Cronbach's alpha greater than .80, the instrument is considered to have high reliability (Brodike et al., 2009). Also, Pearson correlations calculated for varying validity coefficients, on both the JDI and JIG, found the JIG is the best predictor of intent to quit. Due to the tools validity and reliability and availability of nationally normed data, the JIG was determined to be the best scale for the research study.

Mentorship effectiveness scale. The Mentorship Effectiveness Scale is a Likert-type summated rating scale standardized as a tool for rating mentee or protégé perceptions of the mentorship experience. The instrument was initially constructed by the ad hoc faculty committee at Johns Hopkins University School of Nursing (Berk et al., 2005). The committee spent more than a year reviewing the literature and constructing the tool. Also, the content related validity was conferred by an additional faculty committee for psychometric form and mentor-characteristic content. Although a set criteria and scale items are administered using a standard procedure each mentor-mentee relationship is unique. Therefore, validity coefficients and standard indices of validity and reliability cannot be measured because responses do not have uniform meaning. With permission to utilize the survey instrument from Dr. Berk, the tool only needed slight modifications (see Appendix A). Modifications for this study included deleting the qualitative questions meant to collect descriptive data on the nature of the mentoring

relationship. The questions specific to the mentor effectiveness scale were used without deletions or changes to the existing tool (see Appendix B).

Turnover intentions measure. The turnover intention was measured with a 3-item measure scored on a 5-point agreement scale (Xu & Payne, 2014). Xu and Payne (2014) completed a quantitative survey analysis of over 3,000 faculty members at a southwestern university in a mentorships and turnover intentions study. The measure utilized in the study was created by combining two items from Carmann et al. (1983) and Mayfield and Mayfield (2007) intentions to stay scale. With reported reliability coefficient of .87, the measure has good reliability and reported face validity. The instrument was used without any modifications. Test content could be reproduced for educational purpose without written permission from the author or publisher (Xu & Payne, 2014).

Sampling Design

Institutional Board Review (IRB) approval for this study was obtained from Bethel University (BU) (see Appendix F). Also, correspondence with the Physician Assistant Education Association (PAEA) confirmed that the membership directory was unrestricted, so a sample population was accessed by directly emailing participants through the all faculty listserv (see Appendix G). PA faculty members who were certified and employed at Accreditation Review Commission on Physician Assistant (ARC-PA) accredited academic programs in the United States were invited by e-mail to participate in this study. The total population was estimated to be approximately 593 current faculty and inclusive of all faculty nationwide (PAEA, 2016). This list includes full-time physician assistants who are currently program chairs, directors, associate directors, clinical coordinators, academic coordinators, and assistant, associate, and full professors. Inclusion criteria were included in the survey to limit the population to faculty that

were certified PAs, ensuring professionals with varying backgrounds (medical doctors, nurses, pharmacists) who teach within a PA program were not included. Including only certified PAs created a more homogenous population sample.

Data Collection Procedures

A web-based Qualtrics survey was created from a combination of The Mentor Effectiveness Questionnaire, Job in General Scale, and the Turnover Intentions Measure. In addition to these validated tools, a short section of demographic questions was included in the survey. After IRB approval, an anonymous link was utilized to distribute the survey. Faculty were e-mailed a link by Dr. Wallace Boeve to the web-based survey through the PAEA all-faculty listserv. No personal identifiers were asked or recorded within the questionnaire to protect participant privacy. Based on personal conversations with field experts in survey design and distribution a few modifications were made to address the potential weakness of a low response rate for this survey. First, a follow-up e-mail reminding participants of the survey was sent week two and three after the original e-mail. A reminder e-mail raised the theoretical potential for a participant to take the survey twice. However, based on field expert advice, the incidence of a participant retaking a survey was very low and should not have affected study results (S. Brandon, personal communication, November 4, 2016). Secondly, the survey was available for three weeks. The majority of participants whom completed surveys did so within the first couple of days of receiving the initial e-mail or a within a couple of days of receiving the reminder e-mail (M. Michener, personal communication, November 21, 2016). Also, a survey completion bar was added to the survey to encourage participant completion of the entire survey. Lastly, the survey was distributed midweek and in the morning to increase participant response (S. Brandon, personal communication, November 4, 2016). All data has been securely stored on

an external hard drive. No identifiers were collected in the survey data, so no response data was traceable to survey respondents.

Field Test

The instrument was "field tested" to assure the instrument's face validity. The survey was e-mailed to four individuals, none of who are potential participants in the proposed study. Field test participants included three full-time professors and one clinically employed PA. No individuals from the study population were a part of field testing, as this was completed before IRB approval. The purpose of field testing was to identify any issues involving clarity, spelling, writing and grammar. Participants provided feedback on the instructions for taking the instrument and the timing it took for survey completion. Based on the feedback, the survey took less than five minutes to complete. A few necessary changes to improve the instrument were made including the addition of "Professor" to the current position with PA program options in Part V: demographics. Also, a comments section was added to the end of the survey to allow for participant feedback.

Data Analysis

Initial analysis was conducted to calculate response rate for the survey. The descriptive data reported in the demographics was calculated for all variables. Utilizing descriptive research to classify the variables and to document specific characteristics was an appropriate method for this type of data analysis (Patten, 2014). A descriptive analysis was conducted on all independent and dependent variables in the study. To answer question one, a descriptive analysis was completed on the forms of mentoring relationships currently being utilized in PA education. To answer question two, respondent scores from the dependent variable of overall job satisfaction were compared to the independent variable of mentoring, categorized into formal,

informal, or no mentoring in the Kruskal-Wallis test. To answer study question three, statistical analysis was completed utilizing a Pearson Correlation. In addition, a linear regression was utilized to assess if a correlation existed between mentor effectiveness and faculty turnover intentions. The hypothesis of question four was not tested with a moderated two-step regression model due to the inability to normalize the job satisfaction data and meet assumptions necessary for statistical analysis (Dawley, 2010).

Limitations of Methodology

A few potential study limitations were identified in this study. Attempting to quantify a complex psychological variable such as "job satisfaction" and "intention to leave" a current job is difficult (Xu & Payne, 2014). Although the turnover intention instrument had been utilized with both good reliability and validity, in a cross-sectional survey design, the data was limited to one point in time and may be influenced by something as simple as either a "good" or "bad" day at work. Future longitudinal studies may better capture the complex psychological variable of turnover intentions for physician assistant faculty. Lastly, the methodology of utilizing a survey design to collect data for the study made results contingent on adequate study participation. Whitcomb, Weitzer, and Port (2004) researched survey fatigue and found that recipients of multiple surveys in one year significantly suppressed response rates in later surveys. Survey non-response has been rising and certainly may have been a factor in response rates and quality of the data participants provided (Whitcomb, Weitzer, & Port, 2004).

Delimitations of Methodology

First, by surveying current faculty, the study does not capture responses from those who have left education. Knowing whether mentoring relationships or lack of these relationships contributed to choices related to physician assistant faculty leaving academia would add another

important dimension to future studies. Second, to limit the scope of the current study, no questions have been asked to assess the personality of each mentor and mentee. Also, no questions about mentor/mentee relationship compatibility or general personality questions of participants and the influence on mentoring effectiveness were collected (Law et al., 2014).

Lastly, the study was limited by not assessing the barriers to mentoring. Although data will be collected on the current mentoring practices, it is beyond the scope of this study to collect all the associated variables related to mentoring barriers. Thus, known barriers such as time, lack of mentors, ill-established goals, guidelines, and institutional support for mentoring will not be a part of this study (Cangelosi, 2014; Zipp, Maher & Falzarano, 2015).

Ethical Considerations

The study design and planned procedures for data collection and analysis adhered to the Belmont Report of ethical principles for the protection of all human subjects involved in this research study (U.S. Department of Health & Human Services [HHS], 1979). The basic principles of respect for persons, justice, non-maleficence and beneficence, guided the ethical decision making and project planning to ensure the protection of human subjects in this study. A rigorous assessment in both planning and implementation of the study was done to weigh out the "probability and magnitude" of possible harm considering the anticipated benefit to both individuals and society, as well as the knowledge gained from conducting the research (HHS, 1979, p.5).

In accordance with the Belmont Report and the ethical principles of research, the researcher considered the technical importance that researchers have in the design and communication of the data acquired about the opinions, characteristics, and behavior of study participants (HHS, 1979). The selection of individuals was related to the problem being studied,

avoiding convenience or bias in selecting a certain group or individual, or utilizing methods that could be considered coercion in securing research subjects (Cho & Rose, 2014). To ensure these principles were upheld, all full-time physician assistants currently teaching in an ARC-PA accredited PA program had equal opportunity to participate in the study. No specific participant identifiers were asked for in the survey to ensure privacy and respect for study participants. Also, to protect research subject identities in conducting internet-based research, a survey link was used for distribution that cannot track identifying information of respondents (Martinez, 2015). All study data was kept confidential and utilized only for the basis of this research study. With strict levels of confidentiality, all study participants assumed the very minimal risk.

Adhering to the tenants of beneficence, all decisions for voluntary study participation were respected. Also, every effort was made to design the survey and report data without utilizing biased language based on gender, racial or ethnic group, sexual orientation or age (HHS, 1979). Equally important the study design did not benefit one group of persons while denying another group of the same privilege, exemplifying the "fairness of distribution" to all study participants (HHS, 1979). The goal of the study was to maximize the common good to all participants by disseminating study findings to national PA stakeholders, ensuring all parties benefited from any knowledge gained from this study.

Lastly, researchers had a responsibility to ensure standards were followed for completeness in the informed consent. Information was revealed clearly and outlined any known risk and the voluntary nature of study participation, as well as provided an assessment of comprehension. Incomplete disclosure was not utilized to accomplish the goals of this study (Cho & Rose, 2014). In conclusion, every effort was made to uphold the three basic principles

of the Belmont Report, treating all study participants ethically in the research of mentoring in Physician Assistant Education (HHS, 1979).

Chapter IV: Results

The purpose of this study was to examine the relationship between the effectiveness of mentoring on job satisfaction and faculty turn over intentions in PA education. As the demand for physician assistants increases and physician assistant educational programs expand to meet the growing demand, the need to recruit and retain physician assistant faculty members has increased (Orcutt, 2007). However, many novice faculty enter academia with limited skills related to teaching and navigating the culture of academia. The difficult transition for new faculty from clinical medicine to academia is well documented in the literature (Gustin & Tulsky, 2010; Ries et al., 2012; Steele, Fisman, & Davidson, 2013). Novice faculty report feeling overwhelmed and unsupported, which correlates with less career satisfaction and greater intent to leave the academic environment (Blood et al., 2012; Hagmeier, Murawski, & Popovich, 2013; Zipp, Maher, & Falzarano, 2015). Mentoring for novice faculty in other healthcare and higher education programs has been found to support career skills and psychosocial support for greater academic success (Sambunjak, Straus, & Marusic, 2006). Therefore, describing the types of mentoring relationships in PA education will provide a beginning understanding of the current mentoring practices. Also, filling a gap in the literature on the effectiveness of mentoring and establishing if any correlation exists with job satisfaction and faculty-turn-over intentions in PA education, informs current and prospective education administers and program directors on the usefulness of mentoring in faculty recruitment and retention.

The current literature points to a positive correlation between mentoring programs and job satisfaction in academic medical settings and across various allied health fields (Faurer, Sutton & Worster, 2014; Gustin & Tulsky, 2010; Straus, Johnson, Marquez, & Feldman, 2013;

Xu, et al., 2014). It was hypothesized that mentoring relationships would correlate with increased perceived levels of job satisfaction and have a negative correlation with PA faculty turnover intentions.

Research Questions

The study was designed to answer the following research questions: (1) What forms of mentoring relationships are currently being utilized in PA education? (2) To what extent, if any, do perceived levels of mentoring effectiveness correlate with PA faculty perceived levels of job satisfaction? (3) To what extent, if any, do perceived levels of mentor effectiveness correlate with reported faculty turnover intentions? (4) To what extent, if any, does mentoring act as a moderator between faculty job satisfaction and faculty turnover intentions?

The chapter is organized by way of the above research questions. Included in this chapter are descriptive statistics covering participant demographic, comparative means, Kruskal-Wallis, Pearson correlation, and linear regression, related to the remaining research questions. Statistics included in this study were estimated using the statistical software, Minitab, version 17.2.

Data Analysis Procedure

Faculty members at Accreditation Review Commission on Physician Assistant (ARC-PA) accredited PA programs in the United States that subscribe to the Physician Assistant Education Association (PAEA) all-faculty listserv were invited via e-mail to participate in the survey (n = 593). One hundred fourteen participants responded to the survey resulting in a return rate of 19%. Of the respondents, nine did not meet the inclusion criteria, and nineteen did not finish the survey (114-28= 86). Eighty-six participants were included in the study. The survey data was downloaded from Qualtrics and was prepared for analysis, coding responses and

instrument scales before importing into Minitab for analyses. The codebook file is included for review in Appendix H.

A few basic tests were run to ensure certain assumptions were validated before running the planned statistical tests. Weakly linear relationships were established for the variables to meet the assumptions for the Pearson correlation. The Ryan-Joiner test was utilized to ensure normally distributed data. All variables in the study were not normally distributed and were transformed using Box-Cox Transformation. Table 1 represents the study variables before and after Box-Cox transformation. Table 2 represents the study variables after Box-Cox transformation. The result of the transformation was normally distributed data with equal variances for mentoring effectiveness and job satisfaction. Data normality was not established for job satisfaction, but equal variances were maintained.

Table 1

Summary of Variables Before Box-Cox Transformation

Variable	Category	Normally Distributed?	Symmetric?	Equal Variances?
Mentoring Effectiveness Score	Independent	No	No	Yes
Job Satisfaction (JIG) Score	Dependent	No	No	Yes
Turnover Intention Score	Dependent	No	No	Yes

Table 2

Summary of Variables After Box-Cox Transformation

Variable	Category	Normally Distributed?	Symmetric?	Equal Variances?
Mentoring Effectiveness Score	Independent	Yes	N/A	Yes
Job Satisfaction (JIG) Score	Dependent	No	N/A	Yes
Turnover Intention Score	Dependent	Yes	N/A	Yes

Data normalization allowed for parametric statistical analysis. Box-Cox transformation is considered best practice for cleaning and transforming data and is widely accepted in the literature (Osborne, 2010). Mentoring effectiveness and job satisfaction were processed using optimal lambda. Turnover intention was transformed by calculating the value of optimal lambda (0.01). All analysis was completed in the statistical software, Minitab. The results of the Box-Cox transformation test were normally distributed data for the variables of mentoring effectiveness and faculty turnover intention, but unsuccessful normality for job satisfaction. Figure 2 represents Box-Cox Transformation using optimal lambda for mentoring effectiveness. Figure 3 represents Box-Cox Transformation using optimal lambda for job satisfaction.

Figure 2

Box-Cox Transformation for Mentoring Effectiveness

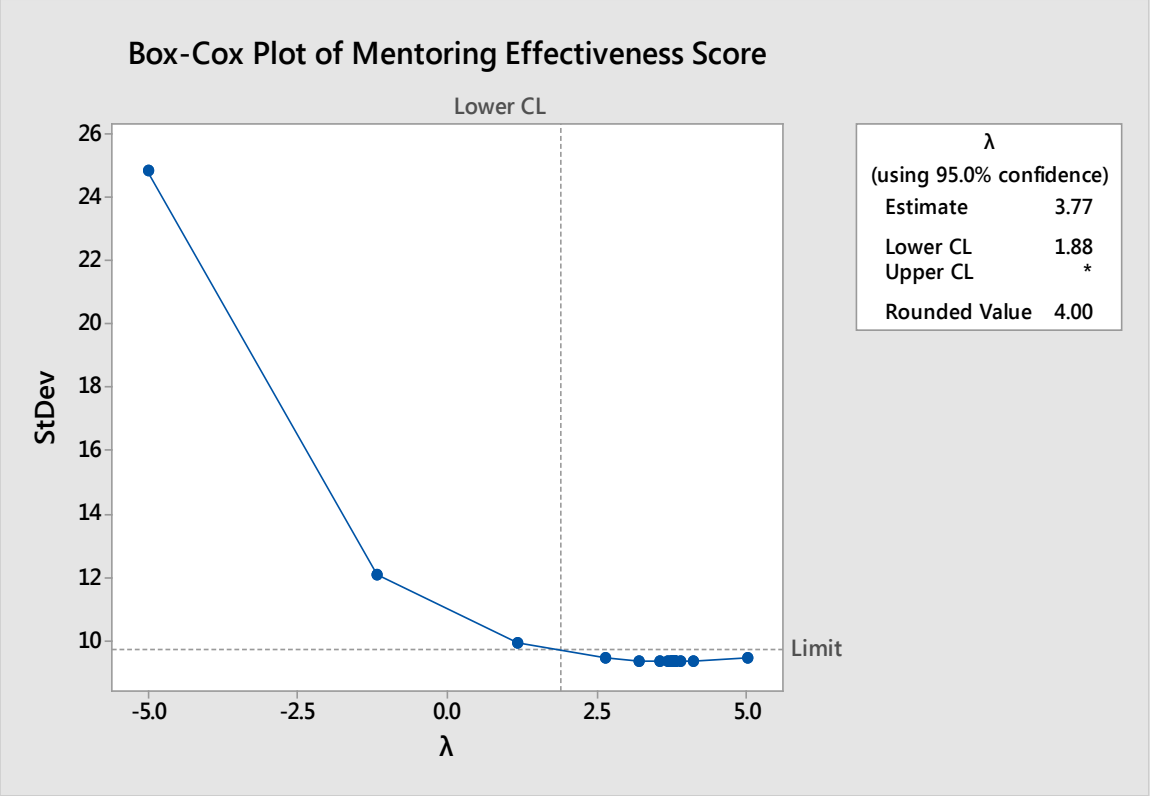
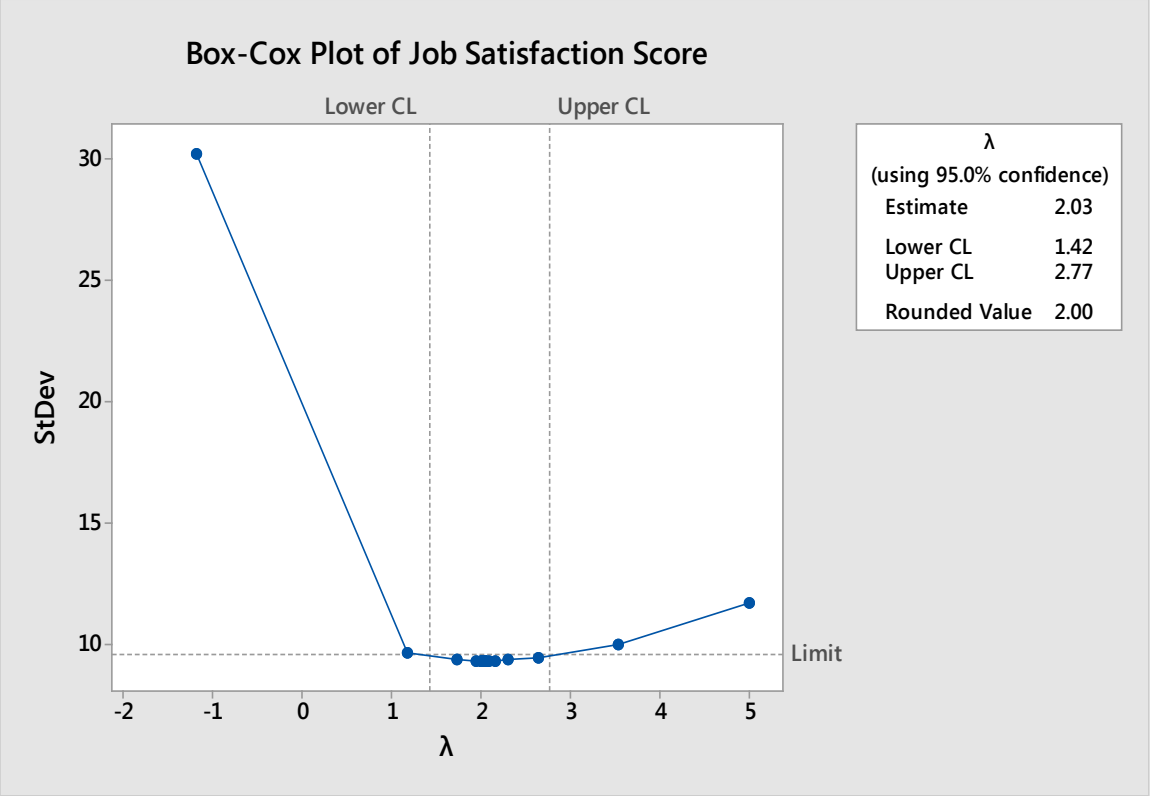


Figure 3

Box-Cox Transformation for Job Satisfaction



After each variable had been transformed, equal variance and Ryan-Joiner normality tests were conducted. Normality was assessed by calculating the correlations between the data and the normal scores of the data. Results of the Ryan-Joiner normality test for both mentoring effectiveness and faculty turnover intentions were a normal probability plot. Figure 4 represents the results of the Ryan-Joiner normality tests for mentoring effectiveness. Figure 5 represents the results of the Ryan-Joiner normality test for faculty turnover intentions.

Figure 4

Summary of Normality for Mentoring Effectiveness

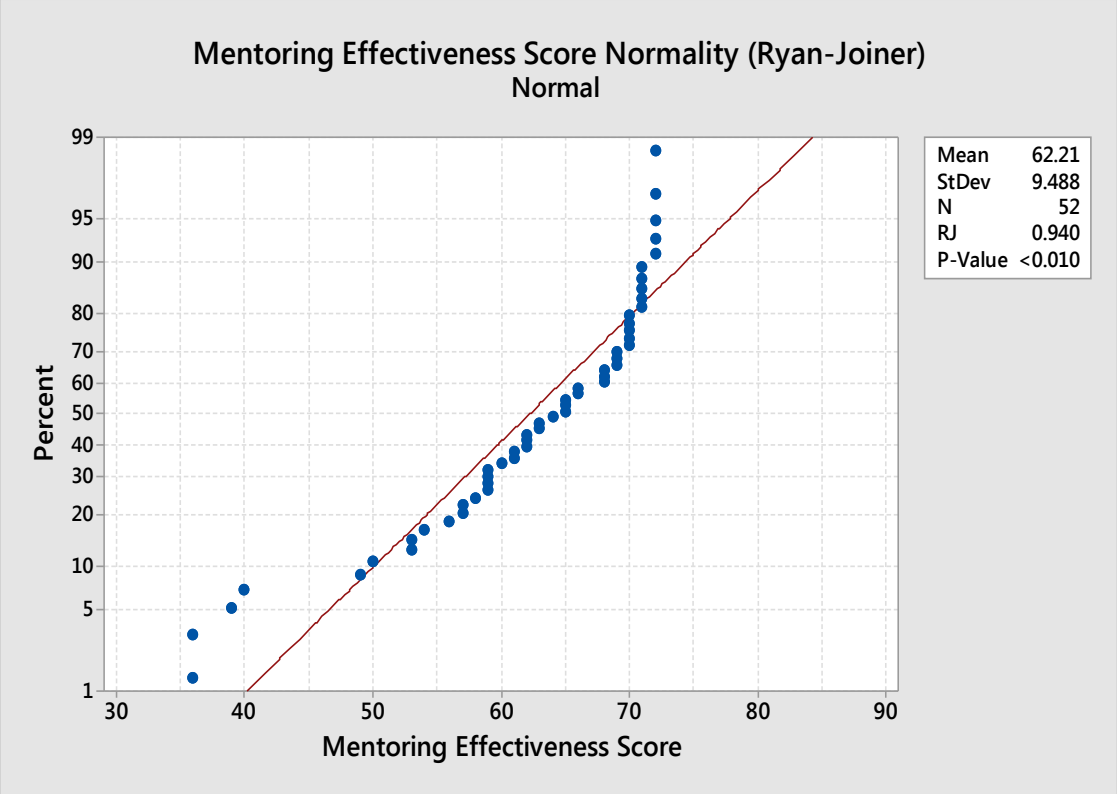
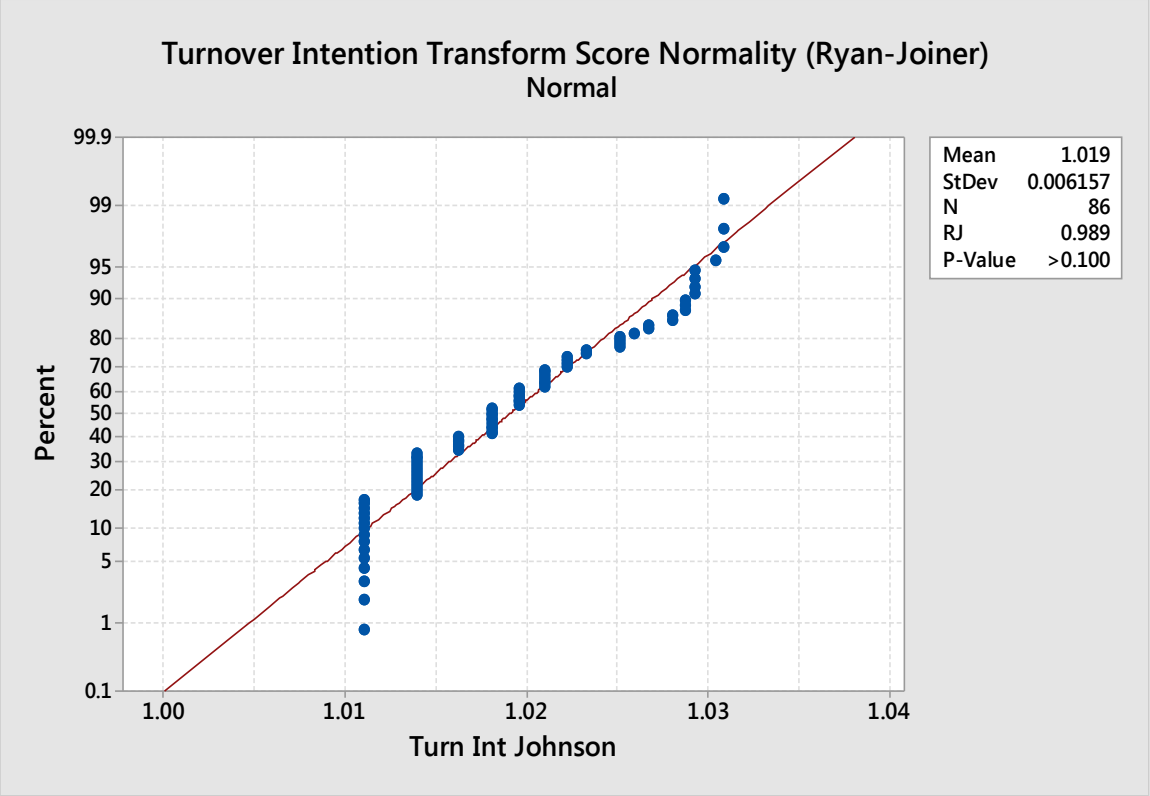


Figure 5

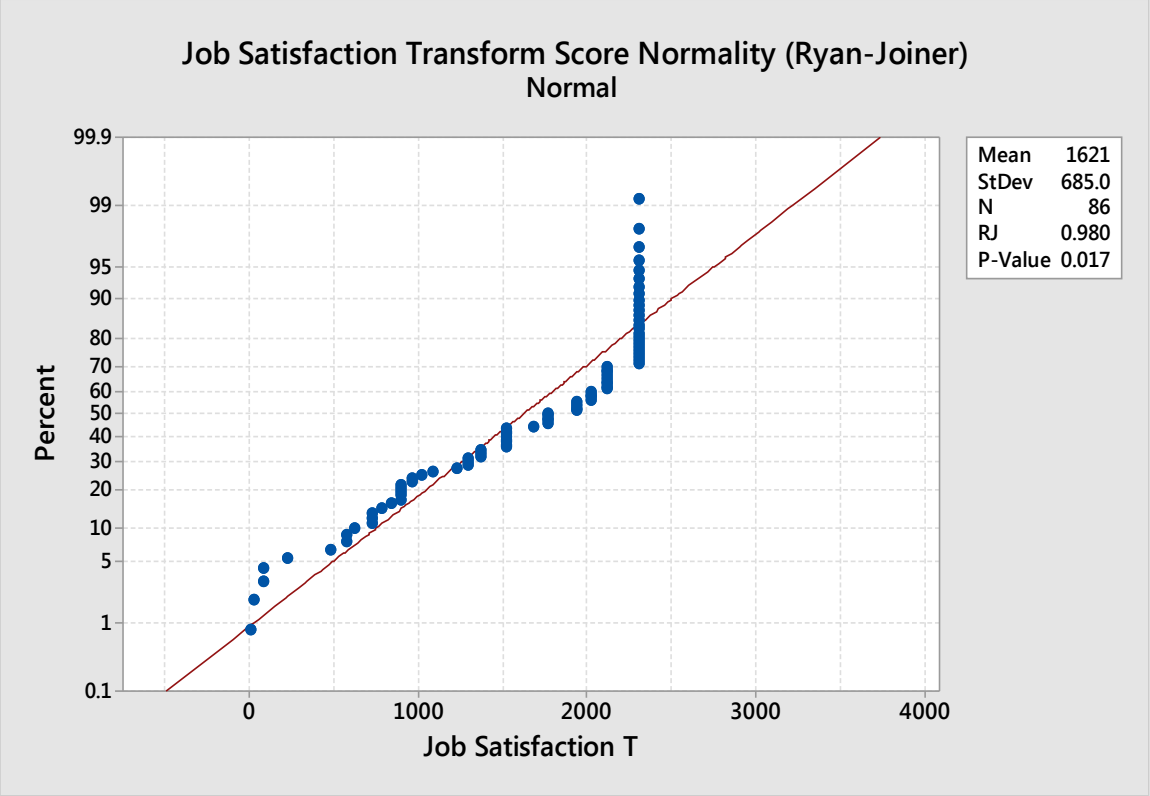
Summary of Normality for Faculty Turnover



Results of the transformations for job satisfaction were unsuccessful in data normalization. Figure 6 represents the results of the Ryan-Joiner normality test for job satisfaction. The variable of job satisfaction did not result in a normal probability plot.

Figure 6

Summary of Normality for Job Satisfaction



To test for equal variances, multiple comparisons method and Levene's method were utilized. The Bonferroni confidence intervals were used to estimate the standard deviation of each variable based on the categorical factors (Minitab, 2017). Tables 3-5 represent the test for equal variance for mentor effectiveness, turnover intentions, and job satisfaction. The tables depict the resulting confidence interval range of likely values for the standard deviation of the corresponding population. The results indicate 97.5% confidence that the intervals include the true population standard deviations for mentoring effectiveness, faculty turnover intentions, and job satisfaction.

Table 3

Test for Equal Variance: Mentor Effectiveness vs. Mentor

Mentoring Category	N	StDev	CI
Formal	12	7387222	(4682166, 14332083)
Informal	40	7743271	(6509249, 9758029)

Note: Significance level, α = 0.05
Note: Individual confidence level = 97.5%

Table 4

Test for Equal Variance: Turnover Intentions vs Mentor

Mentor	N	StDev	CI
No	34	0.01	(0.0051785, 0.0081415)
Yes	52	0.01	(0.0052348, 0.0075272)

Note: Significance level, α = 0.05
Note: Individual confidence level = 97.5%

Table 5

Test for Equal Variance: Job Satisfaction vs. Mentor

Mentor	N	StDev	CI
No	34	665.99	(563.244, 843.066)
Yes	52	702.07	(557.017, 924.758)

Note: Significance level, α = 0.05
Note: Individual confidence level = 97.5%
Note: 95% Bonferroni Confidence Intervals for Standard Deviations

Figures 7-9 represent the summary plot of multiple comparison intervals for mentoring effectiveness, turnover intentions, and job satisfaction. The results indicate the p-value is greater than the significance level of 0.05. Equal variance was established with overlapping comparison intervals and no statistically significant differences between the groups for mentoring effectiveness, turnover intentions, and job satisfaction.

Figure 7

Test for Equal Variances: mentoring effectiveness

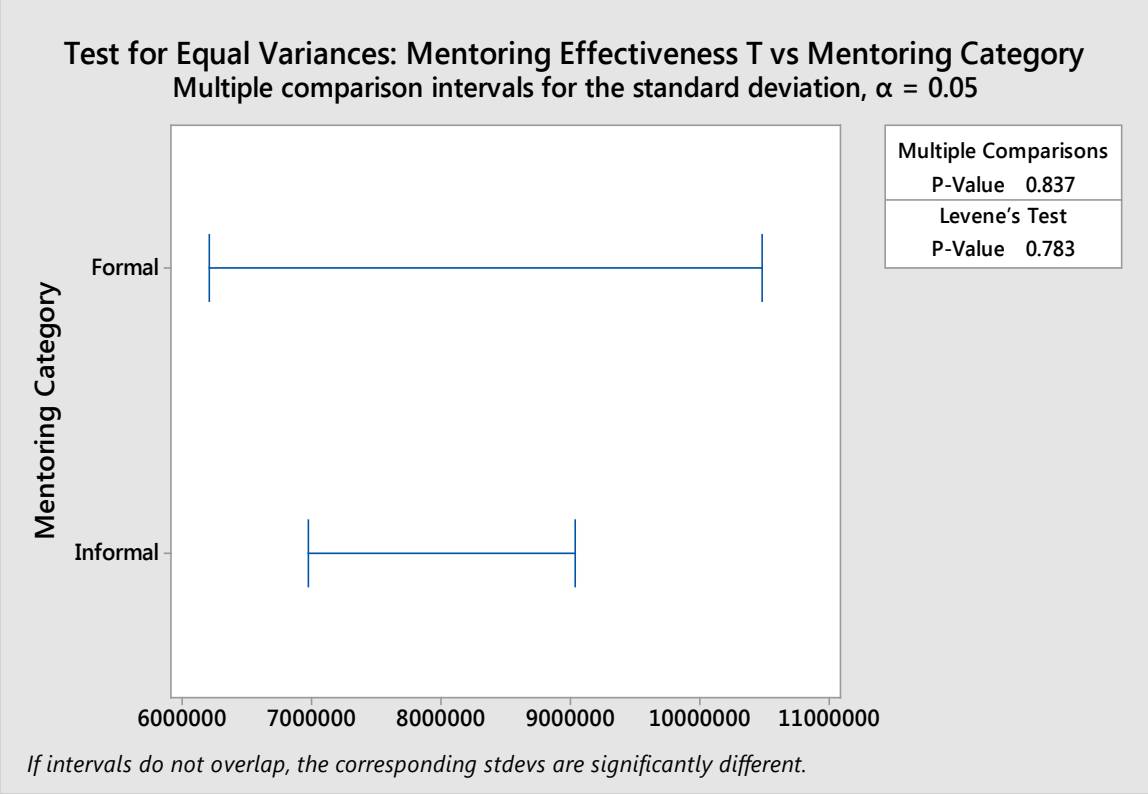


Figure 8

Test for Equal Variances: turnover intentions

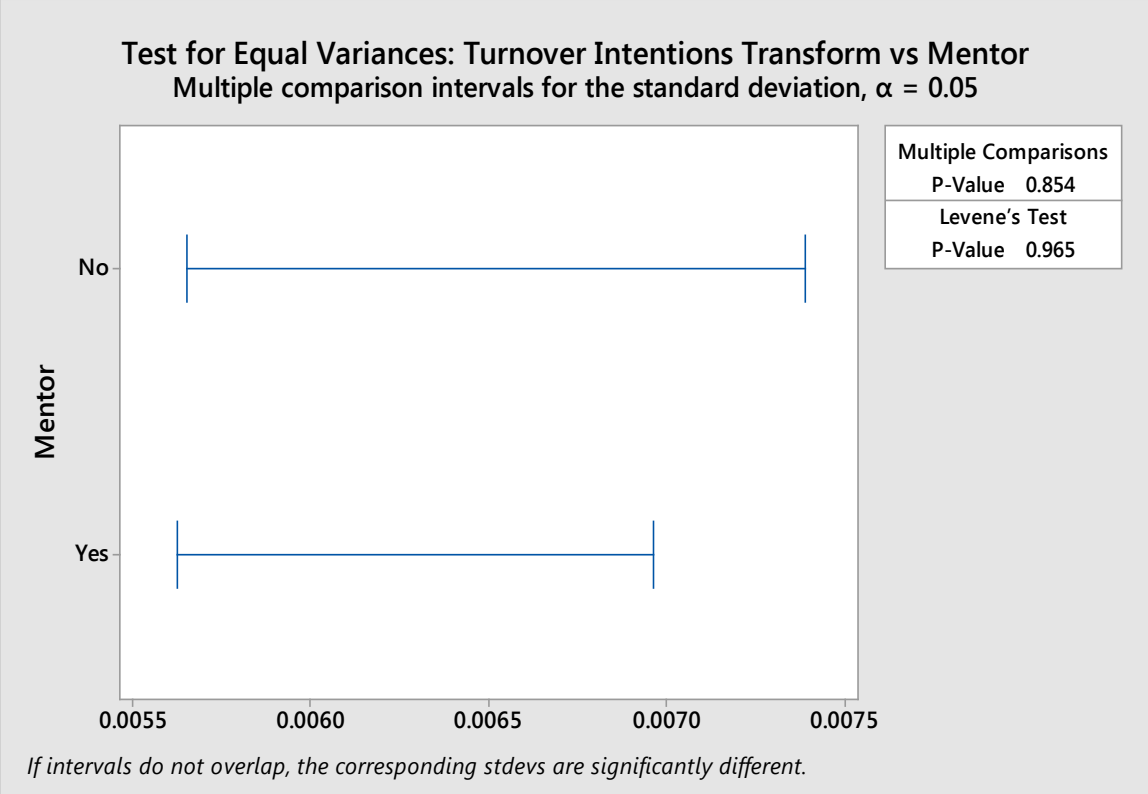
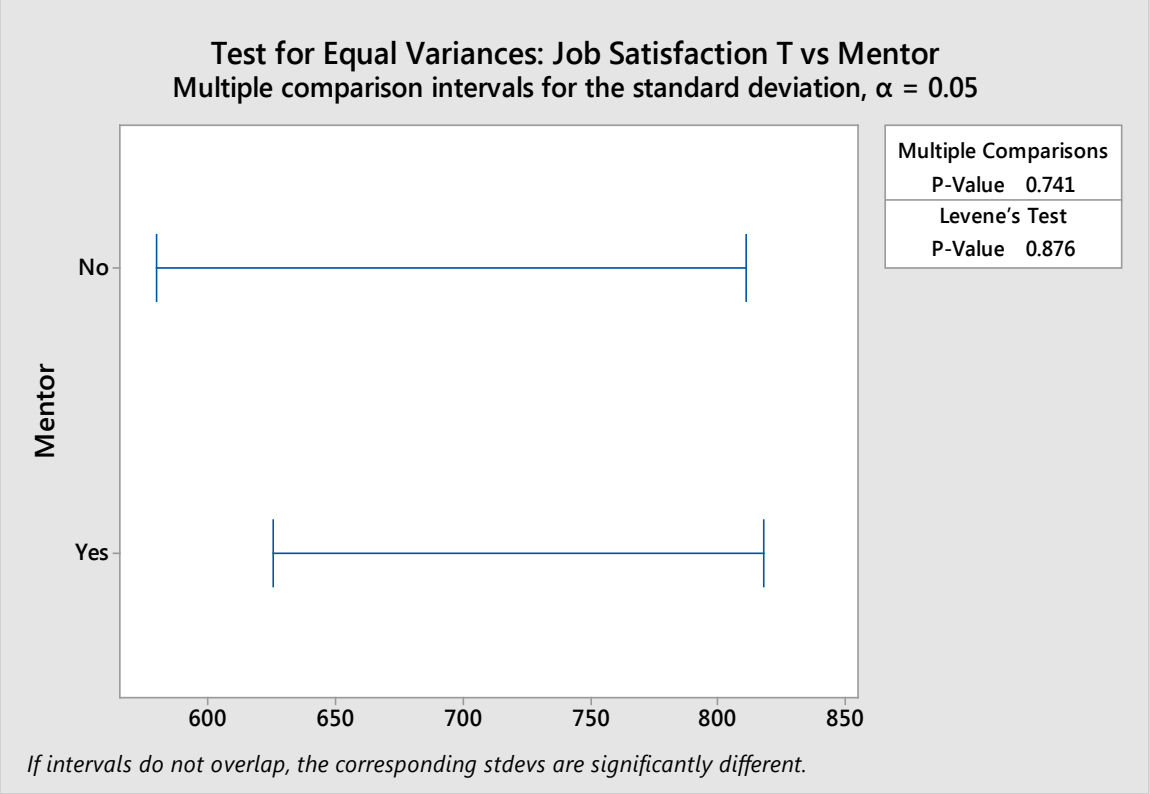


Figure 9

Test for Equal Variances: job satisfaction



Cronbach's Alpha Coefficient for Internal Reliability

In this study, Cronbach's alpha was estimated for each of the instruments: Mentoring Effectiveness, Job Satisfaction, and Turnover Intentions Measure. Cronbach's alpha is a measure of scale reliability, and in social science research a reliability coefficient of 0.70 is considered acceptable (Creswell, 2014). Creswell (2014) indicates that as Cronbach's alpha approaches 1.0 the more reliable the instrument is. All instruments in this study had a high Cronbach's alpha greater than 0.91, indicating high reliability. Table 6 represents instrument reliability defined by Cronbach's Alpha Coefficients for each variable.

Table 6

Instrument Reliability

Instrument	Cronbach's α
Mentoring Effectiveness	0.9329
Job Satisfaction	0.9119
Turnover Intentions	0.9103

As previously discussed, the Job Satisfaction Scale (JIG) and Turnover Intentions measure are well-vetted instruments, and the Cronbach alphas computed in the present study are consistent with reliabilities reported by Brodike et al. (2009) and Xu and Payne (2014). Validity coefficients and standard indices of validity and reliability had not previously been measured for the Mentor Effectiveness scale (Berk et al., 2005). Cronbach alphas computed in the present study (0.9329) established a high reliability for the Mentor Effectiveness instrument.

Response rate and participant demographics

A total of 95 of the 593 participants completed the survey. Nine participants were not certified or full-time PA faculty, and thus did not meet the inclusion criteria for the study (95-9 = 86, n = 86). Additionally, with the initial e-mail and subsequent reminder e-mails, a total of 25 e-mails generated automated replies of "out of office" or "unavailable." The response rate pattern with follow-up e-mail sequencing was analyzed. One-hundred and four of the 114 (87 %) respondents completed the survey in the first two days after e-mail contact. An 87% percent response rate of faculty in the first two days of e-mail contact is comparable to similar studies (80%) utilizing web-based survey distribution (Dillman, 2000; M. Michener, personal communication, 2016). The sample participants can be described as 81.4 % female (n = 70) and 18.6% male (n = 16). Most participant's highest degree earned was a master's degree (n= 60, 74.4 %), 20 held a doctorate (23.3%), and two participants held a bachelor's degree (2.3 %).

34.8% of participants reported a current academic rank of assistant professor (n = 30), 23.2% Clinical Director (n = 20), 14.0% Program Director (n = 12), 9.3% Academic Coordinator (n = 8), 7.0% Associate Professor (n = 6), 2.3% Instructor (n = 2), and 9.3% other (n = 8). Of the sample population, 48.4 % had been in PA education one to five years (n = 42), 18.7% for 15 or more years (n = 16), 16.2% for five to nine years (n = 14), and 7.0 % for less than one year (n = 6).

When compared to the most recent PAEA (2015) annual report, gender and highest degree earned of respondents were representative of the national PA faculty population (77% Female vs. 70% between gender respectively; Doctorate 17.4% vs. 23.3%, Master 78.4% vs. 74.4% respectively). Also, the participant sample was representative of all PA faculty regarding their current position within the PA program. However, years in PA education were not as a representative of the national norm. In the PAEA annual report, 20.6% participants reported being in their position for less than a year, compared to only 7.0% of current study participants that reported being in PA education for less than one-year. Table 7 summarizes participant demographics.

Table 7

Participant Demographics

		n	%
Gender	Male	16	18.6
	Female	70	81.4
Years in PA Education	Less than 1 year	6	7.0
	1-5 years	42	48.8
	5-9 years	14	16.2
	10-15 years	8	9.3
	15+ years	16	18.7
Current Position within PA Program	Program Director	12	14.0
	Academic Coordinator	8	9.3
	Clinical Director	20	23,2
	Professor	0	0
	Associate Professor	6	7.0
	Assistant Professor	30	34.9
	Instructor	2	2.3
	Other	8	9.3
Highest Degree Earned	Doctorate	20	23.3
	Master	64	74.4
	Bachelor	2	2.3
	Associate	0	0
	Certificate	0	0

Note n= 86

Research Question Results

The following section of this chapter describes the results relevant to each of the four research questions: (1) What forms of mentoring relationships are currently being utilized in PA education? (2) To what extent, if any, do perceived levels of mentoring effectiveness correlate with PA faculty perceived levels of job satisfaction? (3) To what extent, if any, do perceived

levels of mentor effectiveness correlate with reported faculty turnover intentions? (4) To what extent, if any, does mentoring act as a moderator between faculty job satisfaction and faculty turnover intentions? The hypotheses were delineated as either rejected or failed to reject based upon statistical significance.

Research Question One

Research question one investigated the forms of mentoring relationships currently being utilized in PA education. Descriptive statistics were utilized to understand respondent data related to current mentoring characteristics in PA education. Fifty-two participants (60.5%) reported receiving mentoring, while 34 (36.5%) reported having no past or current mentor. The majority of mentees reported being a part of informal (76.9%) versus formal (23.1%) mentoring relationship. 75% (n = 39) reported their academic institution did not provide protected time or clear objectives to support the mentoring relationships. Fifty-eight percent of respondents received no assistance with scholarly initiatives, 61.5 % had no assistance with mentor matching, and 55.7% received no training related to mentoring. Lastly, the majority of participants (83 %) reported their mentoring relationships were with someone within their current institution. Tables 8-10 provide a summary of the descriptive data related to current mentoring practices in PA education including participants and institution support frequencies.

Table 8

Participants

	n
Had a Mentor	52
Did not have a mentor	34

Note n = 86

Table 9

Institution Support Frequencies

Variable	No	Yes	N/A	No Answer
Protected Time	39	11	2	-
Clear Objectives	39	11	2	-
Scholarly Initiatives	30	19	3	-
Trainings	29	20	2	1
Assistance in Matching	32	18	2	-

Note n = 52

Table 10

Mentor Information Frequencies

Variable	No	Yes	Missing
Faculty Member	15	37	-
Within Your Department	26	26	-
On Your Campus	13	38	1
Outside of Your Institution	43	9	-

Note n = 52

Research Question Two

Research question two assessed whether mentoring relationships correlated with PA faculty perceived levels of job satisfaction. To answer research question two, the non-parametric Kruskal-Wallis test was conducted to describe the relationship between mentoring and job satisfaction. No statistically significant relationship was established between mentoring and job satisfaction. Since $p > 0.05$, we fail to reject the null hypothesis. Table 11 below represents the Kruskal-Wallis of job satisfaction (measured by the JIG) versus mentoring.

Table 11

Kruskal-Wallis of Job Satisfaction (JIG) vs. Mentor

	n	Median	Rank	Z
No	34	42	41.2	-0.69
Yes	52	43	45	0.69
Overall	86		43.5	

Note: H = 0.48 DF = 1 P = 0.488
Note: H = 0.49 DF = 1 P = 0.482 (adjusted for ties)

Results of the Kruskal-Wallis of job satisfaction versus the categories of formal, informal, and no mentoring were also not statistically significant p= 0.483. Thus, no significant relationship existed between job satisfaction and the categories of formal, informal, and no mentoring. Table 12 represents the Kruskal-Wallis results of job satisfaction versus mentoring type.

Table 12

Kruskal-Wallis of Job Satisfaction (JIG) vs. Mentoring Type

Mentor Type	n	Median	Rank	Z
Formal	12	45	51.3	1.16
Informal	40	42	43.1	-0.13
No Mentoring	34	42	41.2	-0.69
Overall	52		43.5	

Note: H = 1.46 DF = 2 P = 0.483
Note: H = 1.46 DF = 2 P = 0.483 (adjusted for ties)

Although the study did not find a significant relationship between mentoring and job satisfaction, there was a noticeable difference in the reported means of the scores in the sub-populations of formal and informal mentoring. Comparative means of participants in a formal mentoring relationship mean job satisfaction score (43.00) was higher than the mean score for those in an informal relationship (37.70). Table 13 represents the comparative means by mentor type.

Table 13

Comparative Means by Mentor Type

Variable	Mentor Type	Mean	StDev	Minimum	Median	Maximum	Range	Count
Job Satisfaction Score	Formal	43.00	5.70	30	45	48	18	12
	Informal	37.70	12.77	3	42	48	45	40
	None	38.65	9.32	15	42	48	33	34

Research Question Three

Question three assessed whether perceived levels of mentoring effectiveness correlated with PA faculty turnover intentions. To answer research question three, a Pearson correlation was conducted to describe the relationship between mentor effectiveness and turnover intentions. Descriptive statistics for mentoring effectiveness detail that overall respondents rated mentoring relationships as effective. Participants Respondent mean scores (5.654-4.692) indicate participants agree or strongly agree with all twelve variables related to mentor effectiveness. Also, the descriptive statistics related to faculty turnover intentions indicate overall respondents disagreed with statements related to turnover intent. "Somewhat disagreeing" with intentions of quitting their job (mean = 3.2), "disagreeing" with intentions of looking for a new job (mean = 2.7), and "disagreeing" that they are actively looking for a job (mean = 2.0). Table 14 represents the results of the descriptive statistics for the variables of interest.

Table 14

Descriptive Statistics for Mentoring Effectiveness Frequencies

Variable	Mean	StDev	Minimum	Median	Maximum	Range	n
accessible	5.154	0.894	2	5	6	4	52
professional integrity	5.615	0.661	3	6	6	3	52
content expertise	5.365	1.103	1	6	6	5	52
approachable	5.654	0.738	3	6	6	3	52
supportive	5.442	0.873	2	6	6	4	52
constructive and useful	5.096	1.176	1	5	6	5	52
motivated to improve	5.058	1.211	2	6	6	4	52
Provide direction	5.115	1.166	1	5	6	5	52
answered my questions	5.096	0.913	2	5	6	4	52
acknowledgement	4.865	1.189	1	5	6	5	52
suggested resources	5.058	1.074	2	5	6	4	52

Table 15

Descriptive Statistics for Faculty Turnover Intent Frequencies

Variable	Mean	StDe	Minimum	Median	Maximum	Range	n
quitting this job	3.209	2.036	1	2.0	7	6	86
look for a new job	2.709	1.884	1	2.0	7	6	86
actively looking	2.047	1.714	1	1.0	7	6	86

Table 16 represents the Pearson correlation between mentoring effectiveness and turnover intention. There is a moderately negative (r = -0.329) statistically significant correlation between mentoring effectiveness and PA faculty turnover intentions. Since p = 0.017, less than 0.05, we reject the null hypothesis, concluding there is a statistically significant correlation between these two variables.

Table 16

Pearson Correlation: Mentoring Effectiveness Transformed vs. Turnover Intention

Mentoring	r
Turnover Intention	-0.329

Note: p= 0.017

Also, a multiple linear regression was conducted to predict faculty turnover intentions based on mentoring effectiveness. A significant regression question was found ($F(1.51) = 6.07$, $p = 0.017$), with an R^2 of 0.0904. Study findings indicate a significant predictive relationship exists between mentoring and turnover intentions. Figure 10 represents the linear regression model. Table 17 is the summary of the results of the multiple linear regression, including the regression equation to describe the relationships between the two variables.

Figure 10

Linear Regression Model

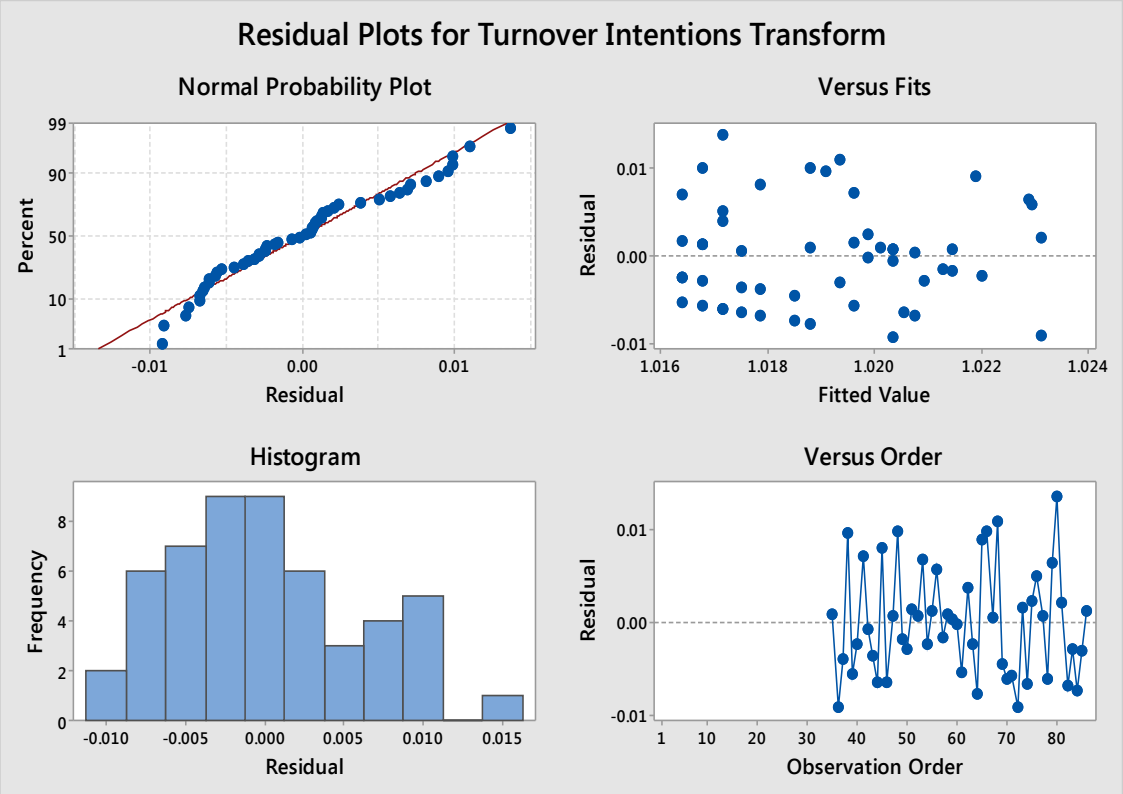


Table 17

Model Summary

S	R^2	R^2(adj)	R^2(pred)
0.0058563	10.83%	9.04%	3.57%

Regression Equation: Turnover Intention = 1.02355- 0 Mentoring Effectiveness

Also, comparative means of participants in a formal (5.42) mentoring relationship had a lower mean score for turnover intention than those in an informal relationship (8.70). However, comparative means had very little difference between informal relationships (8.70) and no mentor (8.00). Table 18 represents the comparative means by mentor type for turnover intention scores.

Table 18

Comparative Means by Mentor Type

Variable	Mentor Type	Mean	StDev	Minimum	Median	Maximum	Range	Count
Turnover Intention Score	Formal	5.42	1.98	3	5	8	5	12
	Informal	8.70	5.60	3	7	21	18	40
	None	8.00	5.32	3	6	21	18	34

Research Question Four

Research question four assessed if mentoring served as a moderator between faculty job satisfaction and turnover intentions. Table 19 represents the descriptive statistics for job satisfaction frequencies. All positive variables, indicated by a * in the table below were scored Yes (3), No (0), or ? (1). All negative variables were scored No (3), Yes (0), or ? (1). Results indicate all calculated means were greater than 2.0, except for the variables of "excellent," "superior," and "great."

Table 19

Job Satisfaction Frequencies

Variable	Mean	StDev	Minimum	Median	Maximum	Range	n
Pleasant*	2.488	1.060	0	3	3	3	86
Bad	2.616	0.935	0	3	3	3	86
Great*	1.709	1.421	0	3	3	3	86
Waste of Time	2.895	0.486	0	3	3	3	86
Good*	2.779	0.758	0	3	3	3	86
Undesirable	2.756	0.781	0	3	3	3	86
Worthwhile*	2.791	0.671	0	3	3	3	86
Worse than most	2.744	0.814	0	3	3	3	86
Acceptable*	2.709	0.866	0	3	3	3	86
Superior*	1.349	1.361	0	1	3	3	86
Better than most*	2.279	1.224	0	3	3	3	86
Disagreeable	2.581	1.011	0	3	3	3	86
Makes me content*	2.070	1.309	0	3	3	3	86
Excellent*	1.663	1.411	0	3	3	3	86
Inadequate	2.616	0.935	0	3	3	3	86
Rotten	2.767	0.746	0	3	3	3	86

Note: * indicates positive job variable

Because job satisfaction was not able to be normalized after Box-Cox transformation, assumptions could not be met to run the moderated two-step regression model.

Summary

Chapter four included data analysis to investigate the four questions presented in the study. Data were collected from 86 certified physician assistants that were full-time faculty and participate in the PAEA all-faculty list-serv. Minitab version 17.2 was used for data analysis. Table 12 presents a summary of the research hypotheses and correlating study results.

Table 20

Research Summary

Hypothesis	Result	Test	Summary
H1o: PA faculty are not engaged in either formal or informal mentoring relationships	Reject	Descriptive Statistics	Faculty are engaged in either formal or informal mentoring relationships
H1a: PA faculty are engaged in both formal and informal mentoring relationships			
H2o: There is no statistically significant relationship between mentoring and overall job satisfaction for PA faculty.			
H2a: There is a statistically significant relationship between mentoring relationships and overall job satisfaction for PA faculty.	Reject	Kruskal-Wallis	There is no statistically significant relationship between these two. Since $p > 0.05$, we fail to reject the null hypothesis
H3o: There is no statistically significant relationship between mentoring relationships and PA faculty turnover intentions	Reject	Pearson Correlation & Linear Regression	There is a statistically significant relationship between these two variables. Since $p < 0.05$, we reject the null hypothesis
H3a: There is a statistically significant relationship between mentoring relationships and PA faculty turnover intentions.			
H4o: Mentoring will not moderate the negative relationship between perceived levels of faculty job satisfaction and faculty turnover intentions.			Job satisfaction scores were not able to be normalized after Box-Cox transformation and assumptions could not be met to run the moderated two-step regression model.
H4a: Mentoring will moderate the negative relationship between perceived levels of faculty job satisfaction and faculty turnover intentions.			

Research question one related to the engagement of PA faculty in mentoring relationships identified that of the respondents, 60.5% (n = 52) reported having some form of mentoring in their PA education career. Most faculty characterized the relationship as informal (76.9%). Also, 75% (n = 39) reported the institution provided no protected time or clear objectives for mentoring. The majority of participants (83%) reported mentoring relationships within their current institution.

Research question two, pertaining to the relationship between mentoring and overall job satisfaction, identified that no statistically significant relationship exists between these two variables ($p = 0.482$). Results of job satisfaction versus the categories of formal, informal or no mentoring, was also not statistically significant ($p = 0.483$). Thus, no significant relationship exists between job satisfaction and mentoring, including the categories of formal, informal, and no mentoring.

Research question three assessed whether perceived levels of mentoring effectiveness correlated with PA turnover intentions. Results of the Pearson Correlation indicated that a moderately ($r = - 0.329$) negative, statistically significant ($p = 0.017$) relationship exists between these two variables. Analysis with multiple linear aggression identified a significant ($R^2 =$ 9.04%) predictive relationship between mentoring and turnover intentions.

Research question four, assessed if mentoring would moderate the negative relationship between perceived levels of job satisfaction and faculty turnover intentions. Statistical analysis was not able to be completed because job satisfaction could not be normalized. Non-normally distributed data resulted in a failure to meet assumptions for a moderated two-step regression analysis.

Chapter four presented the results of the study. Chapter five discusses the findings detailed in chapter four, their limitations, potential study implications, and recommendations for further study.

Chapter V: Discussion

Overview of the Study

The purpose of this study was to determine the effectiveness of mentoring and if any correlation existed with job satisfaction and faculty-turn-over intentions in PA education. As the demand for physician assistants increases and physician assistant educational programs expand, there is an increasing need to recruit and retain physician assistant faculty (Graeff et al., 2014; Orcutt, 2007). However, many novice faculty enter academia with limited skills related to teaching and navigating the culture of academia. The difficult transition from clinical medicine to academia has been well documented in the medical literature (Gustin & Tulsky, 2010; Ries et al., 2012; Steele, Fisman, & Davidson, 2013). Novice faculty report feeling overwhelmed and unsupported which correlates with less career satisfaction and greater intent to leave the academic environment (Blood et al., 2012; Hagmeier, Murawski, & Popovich, 2013; Zipp, Maher & Falzarano, 2015). Research on mentoring in academic medicine has established an association between mentoring and increased faculty career skills and psychosocial support (Sambunjak, Straus, & Marusic, 2006). Also, mentorship opportunities have been found to assist novice faculty members in becoming better socialized into the culture of academia. A consistent finding in the literature is a positive correlation between colleague relationships and social support networks with increased overall levels of job satisfaction (Boeve, 2006; Graeff et al., 2014; Quincy et al., 2012).

This study was designed within the theoretical framework of organizational behavior to better understand the interaction between mentoring, job satisfaction and faculty intentions to leave academia. Social Development Theory and Social Exchange Theory frame how mentoring

functions can influence faculty job satisfaction and intent to stay in academia. In social development theory, faculty mentoring is characterized by the More Knowledgeable Other (MKO) disseminating new knowledge to the protégé based in social interactions in a step-wise fashion (SDT, 2016). The progression moves from observation to modeling, to the application of the learned skill or behavior, resulting in the construction of new knowledge (Kahle-Piasecki, 2011; SDT, 2016).

The mentoring relationship explored in Social Exchange Theory (SET) is rooted in the norm of reciprocity. The phenomenon of SET is based on the exchanges between the two parties that form the foundation for the development of high-quality relationships (Dawley, Andrews, & Bucklew, 2010). Within SET, mentoring relationships have the potential to increase employee satisfaction by investing greater resources in an employee than is dictated in a normal monetary contract. Utilizing mentoring as a tool for investing in the socio-emotional aspects of the employee can yield a far greater return, if it promotes a greater intention to continue employment with the organization (Dawley, Andrews, & Bucklew, 2010).

Chapter 5 will provide an overview of the study, major study findings and an interpretation of the results in the context of the current literature. Additionally, the scientific and practical implications of the findings, the study limitations, and suggested topics for future research will be explored.

Research Questions

The study was designed to answer the following research questions: (1) What forms of mentoring relationships are currently being utilized in PA education? (2) To what extent, if any, do perceived levels of mentoring effectiveness correlate with PA faculty perceived levels of job satisfaction? (3) To what extent, if any, do perceived levels of mentor effectiveness correlate

with reported faculty turnover intentions? (4) To what extent, if any, does mentoring act as a moderator between faculty job satisfaction and faculty turnover intentions? The first question applied descriptive statistics to better understand the current forms of mentoring relationships and support in PA education. For the second question, the Kruskal-Wallis test was applied to the analysis of job satisfaction and mentoring. The third question applied a Pearson correlation and linear regression for analysis. The fourth question was unable to be analyzed do to non-normalizing data. Any significant effects were identified at an appropriate significance level of ($p \leq 0.05$).

The findings of this study revealed that the majority of participants reported having a mentor in their career (60.5%), with 76.9% characterizing the mentoring relationship as informal. However, most participants indicated their mentoring relationship was unsupported by their employer, with 75% reporting no protected time or clear objectives provided by their institution.

This study also examined the relationship between mentoring and job satisfaction. Findings revealed that no statistically significant relationship existed been mentoring and overall job satisfaction, as measured by the Job in General Scale (JIG). In addition, no statistically significant relationship could be established between job satisfaction and the sub-populations of formal, and informal mentoring. Therefore, mentorship did not have a strong relationship with faculty reported job satisfaction.

Finally, this study examined the relationship between effective mentoring and faculty intent to turnover. Findings revealed a moderately negative, statistically significant correlation between mentoring effectiveness and PA faculty turnover intentions. Also, the multiple linear regression found a negative predictive relationship between mentoring and turnover intentions. The following pages will discuss these questions and highlight other related findings.

Major Findings

Research question one. Descriptive analysis of the forms of mentoring relationships in PA education. The descriptive analysis of participant mentoring revealed that the majority of PA faculty (60.5%) had at least one mentor while working in PA education. Of the mentored group (n = 52), the majority of participants characterized their mentoring relationship as informal (76.9%) and indicated a mean of 2.33 mentors and mean of 3.08 years of total mentoring in their careers in PA education. Also, 83.0% of the mentees indicated their mentor was from within their current academic institution. Descriptive statistics for mentoring effectiveness detail that overall respondents mean scores (4.692-5.654 out of a maximum of 6) indicate the majority of mentoring relationships were effective.

Limited literature addresses the current state of mentoring in PA education. To date, results from only one nationwide research study have been published. The formal mentoring program was created by PAEA for novice faculty researchers to increase scholarly production and was not well-utilized (Hegmann, 2014). Little other quantitative data in PA education defined the types of mentoring relationships, number of faculty participating in mentoring, and how effective protégé perceive the relationships to be (Graeff et al., 2014; Hegmann, 2014). Current research has filled gaps in the literature, highlighting that majority of PAs have had a mentor in their academic career and overall mean scores indicate the mentoring relationships were effective. However, respondent data on institutional support frequencies indicate the majority of participants received little to no support with mentor/mentee relationships with most (75.0%) reporting no protected time, no help with scholarly initiatives (57.6%) or assistance in mentor matching (61.5%). Study results add to Berk et al. (2006) conclusions on the difficulty of quantifying mentor effectiveness. Although study respondents indicated mentoring relationships

as effective based on the instruments item statements, it is hard to conclude if those variables can be attributed to and characterize effective mentoring in PA education. With minimal literature on mentoring in health-related academic environments, further research is needed to more accurately measure and discern how to measure the effectiveness of these relationships. Overall, this research has added to the limited literature on the current mentoring practices in PA education.

Research question two: Correlation of perceived levels of mentoring effectiveness with PA faculty perceived levels of job satisfaction. A Kruskal-Wallis test revealed no significant correlation ($H(1) = 0.48$, $p \leq 0.482$) between mentoring and PA faculty reported levels of job satisfaction.

Current medical literature has shown a correlation between effective mentoring and improved job satisfaction (Blood et al., 2012; Cannon, 2014; Emmerik, 2004). Prior research in medical education has identified that faculty mentoring programs were beneficial in promoting faculty career satisfaction (Emerik, 2004; Ries et al., 2012). The results of this study did not identify a significant correlation between mentoring relationships and perceived levels of faculty job satisfaction. Therefore, this study of PA faculty did not support the conclusions from previous studies.

Prior research on medical faculty mentoring suggests that mentors who understand the specific needs of the mentee's profession and institutional expectations create a supportive environment and encourage better faculty job satisfaction (Blood et al., 2012; Cannon, 2014; Emmerik, 2004, Falzarano, 2011). This study was not aligned with prior research on mentoring in medical education. Instead, data analysis found no significant correlation between mentoring relationships and job satisfaction in PA education. Descriptive statistics of job satisfaction

results indicate all calculated means were greater than 2.0 (maximum of three), except for the variables of "excellent," "superior," and "great." With an average mean of 2.588 for all job satisfaction variables, study results align with Boeve (2006) findings that overall, PA faculty have high overall job satisfaction.

Although the study did not find a significant relationship between job satisfaction and mentoring, there was a noticeable difference in the reported means of the scores in the sub-populations of formal and informal. Comparative means of participants in a formal mentoring relationship mean job satisfaction score (43.00) was higher than the mean score for those in an informal relationship (37.70). This data also supports Mayer (2014) findings that formal faculty mentoring programs have a greater impact on faculty perceptions of job satisfaction than informal mentoring. Dunham-Taylor et al. (2000) noted that effective mentoring happens in a collaborative environment in which clear expectations are outlined and evaluated. Results from this study indicated the majority of mentoring relationships were informal (76.9%), with most (75%) indicating they received no institutional support with establishing clear mentor/mentee objectives.

In summary, although no statistically significant correlation was established between job satisfaction and mentoring relationships in PA education, comparative means provide more information related to the types of mentoring (formal) more beneficial to PA faculty and support previous research that PA faculty report high levels of job satisfaction (Boeve, 2006).

Research question three: Correlation of perceived levels of mentoring effectiveness with reported faculty turnover intentions. The Pearson correlation for mentoring effectiveness and faculty turnover intentions revealed a moderately negative, statistically significant correlation ($p = 0.017$) between mentoring effectiveness and turnover intentions. Miller (1998) provides

guidelines when interpreting the magnitude of the coefficient of determination (r) effect size in correlations, where (+/-) 0.01-0.09 is negligible, 0.10-0.29 is low, 0.30-0.49 is moderate, 0.50-0.69 is substantial, 0.70-0.99 is very high, and 1.0 is perfect. Applying Pearson's r correlation and Miller's definitions, the analysis found a moderate (negative) relationship (r = - 0.329) between mentoring effectiveness and faculty turnover intentions. Results indicate that the more effective the mentoring, the lower reported faculty turnover intention.

A multiple linear regression was calculated to predict faculty turnover intentions based on mentoring effectiveness. A significant regression question was found ($F(1,51) = 6.07$, $p = 0.017$), with an $R^2 = 0.0904$. Results of the simple regression indicate that mentoring effectiveness has a significant relationship but low (9%) magnitude for predicting faculty turnover intention. Data from the regression equation illustrates the turnover coefficient is unchanged by mentoring effectiveness (-1.02355- 0 mentoring effectiveness transformed). Meaning that although the relationship is theoretically predictive, mentoring effectiveness may have little impact on the actual event of faculty turnover.

Current research supports previous studies in academic medicine that found a correlation between effective mentoring and decreased faculty intent for turnover (Canon, 2014; Nalia et al., 2016; Ries et al., 2012; Zipp, 2014). Nalia et al. (2016) reported faculty deemed mentoring as the most beneficial factor contributing to job retention. The results of this study cannot confirm mentoring as the most significant factor related to job retention but did establish a negative correlation between effective mentoring and faculty turnover intentions. Prior research identified that retention of faculty participating in formal mentoring programs was significantly higher than those participating in informal mentoring. The results of this study, specific to the comparative means by turnover intention scores defined by mentor type, indicate a difference in formal (5.42)

versus informal mentoring (8.70). Although not statistically significant, the comparative means suggests that formal mentoring may be associated with less intent for turnover intentions when compared to faculty in an informal relationship.

In conclusion, this study of PA faculty supported the conclusion from previous studies in academic medicine that mentoring correlates with decreased faculty intention for turnover (Canon, 2014; Nalia et al., 2016; Ries et al., 2012; Zipp, 2014).

Research question four: Mentoring as a moderator between faculty job satisfaction and faculty turnover intentions. The variable of job satisfaction did not have normality of distribution, so data was transformed using Box-Cox transformation (Osborne, 2010). Box-Cox transformation was unable to normalize the data for job satisfaction. Assumptions for running the moderated two-step regression model were unmet, resulting in an inability to answer research question four.

Implications/ Discussion

The findings of this study lay the groundwork for understanding the nature of mentoring in PA education. Results of the study indicate that mentored faculty report no correlation between effective mentoring and job satisfaction. However, a relationship was found between effective mentoring and lower turnover intentions. The findings from this study do not clearly support the continuation and development of mentoring for faculty as a solution for influencing job satisfaction but do support mentoring as a tool for faculty retention.

Although a statistically significant correlation was not established for job satisfaction and mentoring relationships in PA education, comparative means of participants in a formal mentoring relationship (43.00) versus those in an informal relationship (37.70) result in a noticeable difference. Therefore, the comparative means provide clarification on the mentoring

(formal) relationship that may have a greater influence on job satisfaction. Mayer (2014) similarly found formal mentoring had a greater impact on faculty perceptions of job satisfaction. Further research is needed to understand if informal versus formal mentoring relationships influences overall perceptions of job satisfaction.

Also, this study found a moderate relationship between mentor effectiveness and faculty turnover intentions. Similar to findings in the medical education literature, this study found effective mentoring relationship were associated with lower intent for turnover (Canon, 2014; Nalia et al., 2016; Ries et al., 2012; Zipp, 2014). Zipp (2014) concluded that mentored faculty feel more valued and therefore have increasing commitment and loyalty to their institution.

Utilizing the lens of Social Exchange Theory (SET), intent to stay is motivated by individual investment beyond the compensation and benefits dictated in the employee contract (Dawley, Andrews, & Bucklew, 2010). An investment by the institution in an individual through a mentoring relationship is theorized to increase employee loyalty. The mentoring relationship explored in SET is rooted in the norm of reciprocity. The foundation for increasing loyalty between two parties is based on a mutual exchange (Dawley, Andrews, & Bucklew, 2010). Therefore, this study supports the theory that faculty feeling greater support in their mentoring relationship may reciprocate a fair exchange by staying in their current position, evidenced by lower turnover intentions.

Limitations

Certain limitations should be considered when examining the results of this study. These limitations include: sample population, survey instrument selection, response bias, and normality of distributed data.

Sample Population. The inclusionary criteria were meant to indicate participant eligibility as a full-time physician assistant faculty and certified PAs for homogeneity of the population sample. Therefore, different results may be possible with a larger sample size. Low survey response rates resulted in a smaller sample size, less statistical significance, and overall reduced study generalizability

Survey Instrument Selection. The survey instruments selected for this study were the Mentoring Effectiveness scale, Job in General Scale (job satisfaction), and the Turnover Intention Scale (Xu & Payne, 2014). All three instruments had good reliability, consistent with previous research. Attempting to quantify a complex psychological variable such as "job satisfaction" and "intention to leave" a current job is difficult (Xu & Payne, 2014). A cross-sectional survey design limited data to one point in time and responses could have been influenced by either a "good" or "bad" day at work. Also, the Turnover Intention Scale only measured intent for turnover and did not include participant comments related to the reason for leaving. Data related to the reason for participant's intent for turnover such as; retirement, career advancement or a return to clinical practice would add clarity to study findings.

Response Bias. The cross-sectional survey design with voluntary participation may be subject to self-selection bias. Given the voluntary nature of participation, the sample may be more representative of faculty inherently more interested in mentoring relationships or those more satisfied with their job. Theoretically, a non-response bias from a population that chose not

to participate may have led to different responses and different conclusions. Also, data did not account for current versus past faculty mentorship. Thus, recall of the effectiveness of mentoring may have changed participant responses.

The *Normality of Distributed Data*. All variables in the study did not meet the assumption of normality of distribution and were transformed using Box-Cox Transformation. The results of the transformation were normally distributed data with equal variances for mentoring effectiveness and faculty turnover intentions. This transformation allowed for statistical analysis with parametric testing. However, job satisfaction scores were unable to be normalized, limiting data analysis to non-parametric testing for research question two (Kruskal-Wallis) and the inability to meet assumptions for statistical analysis of question four. The sample size and limited flexibility in the JIG scale affected the normality of data distribution, limiting the ability to answer research question four.

Recommendations

The data from this study is a catalyst for the development of future studies that will provide a greater understanding of mentorship and its role in PA education. Based on the study's results, the following recommendations are provided:

- Additional research on mentoring in PA education utilizing varying methodologies are needed. A longitudinal study is needed to explore outcomes of mentored/non- mentored PA faculty members and the associated long-term impact on job satisfaction and academic career longevity. Also, qualitative studies should examine and define if/what characterizes a quality mentoring relationship that is supportive, constructive, and encourages personal/professional growth for PA educators.

- Additional research should examine early-career PA educators (less than three years in education) and the association of mentoring on the transition to academia including; parameters related to academic success and academic socialization (Falzarano, 2011; Hegmann, 2014).
- Additional research should be conducted to more fully explore the impact of mentoring relationships on faculty career decision making. Establishing the reasoning for faculty intentions for turnover, either a new position, career advancement in academia, or returning to clinical practice would clarify the role mentoring has on faculty intentions to leave academia.
- Additional research on the mentor's experience could serve to inform the profession of what led the mentor to this professional service and the associated personal and career outcomes for the mentor.
- Additional research should be conducted to more fully explore the differences in formal and informal mentoring and their impact on faculty job satisfaction and turnover intention. Further research is needed to define the specific factors that contribute to making formal versus informal mentorship more successful.
- Additional research should be done to explore the various aspects of mentoring that influence faculty career satisfaction to investigate if any differences exist across gender.
- Additional research should be done to identify barriers to mentoring and the challenges of faculty mentoring relationships: not enough time, fit, lack of mentors (Falzarano, 2011). Future findings would contribute to the understanding

of how to prepare faculty for a mentoring role, the time required and the benefits and challenges of implementing mentoring relationships in PA education.

- Additional research should investigate the specific factors important to increasing perceived effectiveness of the mentor/mentee relationship including the role institutions and senior administration play in influencing mentoring effectiveness. Future research should focus on how institutions can better support faculty in pursuing and establishing mentoring opportunities.
- Additional research should be done to explore how mentees prioritize the benefits of mentoring: socialization, personal, and professional development.
- Additional research should explore PA faculty perceived importance of the themes related to the ideal function of a mentor to include: career guide (Dickson et al., 2014), psychosocial support (Carmel, 2015; Eby et al., 2013; Mueller & Judge, 2008), research assistant.
- Additional research should explore the relationship between mentor effectiveness and faculty academic success in scholarly production, tenure, and teaching effectiveness (Falzarano, 2011).

Concluding Comments

This study contributes to the understanding of the role of mentoring and its correlation with faculty job satisfaction and faculty intentions for turnover in PA education. The majority of study participants (60.5%) reported having a mentor while working in PA education and most characterized the relationship as informal (76.9%). Study results indicated that no statistically significant correlation could be made between mentoring and job satisfaction. Study results do not align with previous research in medical education that found a correlation between mentoring

and job satisfaction. Although no significant relationship was found between mentoring and job satisfaction in PA education, there was a noticeable difference in the reported means of the scores in the categories of formal and informal mentoring. Participants in a formal mentoring relationship (43.00) mean job satisfaction score was higher than the mean score for those in an informal relationship (37.70).

Perceived levels of mentoring effectiveness had a moderately negative, statistically significant correlation with faculty turnover intentions. Meaning the more effective the mentoring, the lower reported levels of faculty turnover intentions. With high levels of faculty attrition, researchers have sought a greater understanding of what motivates PA academicians to stay in education (Graeff, Leafman, Wallace, & Stewart, 2014; Quincy, Archambault, Sedrak, Essary, & Hull, 2012). Results of this study suggest that academic institutions, PA program directors, and faculty consider mentoring as a tool to improve rates of faculty turnover in PA education.

Ultimately, the present study identifies new data related to current mentoring practices in PA education. Results of this study provide administrators, PA Program Directors, and faculty, a better understanding of the current mentoring practices in PA education. As the demand for physician assistants increase and physician assistant educational programs expand, the need to recruit and retain physician assistant faculty members will continue (Graeff et al., 2014; Orcutt, 2007). Study results indicate effective mentoring is correlated with lower turnover intentions and should be further explored as a tool for faculty retention. Gaining a greater understanding of what motivates faculty to stay in academic medicine has important implications for the PA profession.

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Appendix A

Survey Instrument

Please complete the screening for inclusionary criteria for the study. Click the button to select your choice.

	Yes (1)	No (2)
Full-time Physician Assistant faculty member (1)	❍	❍
Licensed Physician Assistant (2)	❍	❍

If No Is Selected, Then Skip To End of Survey

Q1 At any time during your academic career have you had a mentor?

- ❑ Yes (1)
- ❑ No (2)

If No Is Selected, Then Skip To Part III: Job Satisfaction Job in Gen...

Q2 How many mentors have you had in your career?

- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5+ (5)

Q3 On average, how many years of mentoring have you received?

- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5+ (5)

Q4 Based on the following definitions, how would you best categorize your mentoring experience? **Formal Mentoring**- established by the institution or organization and typically is planned with specific goals, schedules, and guidelines developed for participants.

Informal Mentoring- relationship development that naturally develops over time, out of mutual interests, research initiative, connection or colleague relationships.

- ❍ Formal (1)
- ❍ Informal (2)

Q5 Instruction: Please select your choice for the items below:

	Yes (1)	No (2)
Do you have a faculty mentor at your institution? (1)	❍	❍
Is your mentor a faculty member or administrator within your department? (2)	❍	❍
Is your mentor a faculty member or administrator on your campus? (3)	❍	❍
Is your faculty mentor from outside your institution? (4)	❍	❍

Q6 Does your institution support the mentoring relationship with

	Yes (1)	No (2)	NA (3)
protected time for mentoring meetings? (1)	❍	❍	❍
clear objectives for mentoring relationships? (2)	❍	❍	❍
support for mentoring on scholarly initiatives? (3)	❍	❍	❍
availability of formal or informal mentor or protégé trainings? (4)	❍	❍	❍
assistance in matching a mentor/protégé. (5)	❍	❍	❍

Part II: Section A: Please rate the level of effectiveness of your mentoring relationship. If you have had multiple mentors, please rate your most recent mentoring experience. Copyright 2002 The Johns Hopkins University School of Nursing

	Strongly agree (1)	agree (8)	Somewhat agree (9)	Neither agree or disagree (10)	Somewhat disagree (2)	disagree (3)	Strongly disagree (4)
My mentor was accessible. (1)	❍	❍	❍	❍	❍	❍	❍
My mentor demonstrated professional integrity. (2)	❍	❍	❍	❍	❍	❍	❍
My mentor demonstrated content expertise in my area of need. (3)	❍	❍	❍	❍	❍	❍	❍
My mentor was	❍	❍	❍	❍	❍	❍	❍

approachable. (5)							

Section B: Please rate the level of effectiveness of your mentoring relationship. If you have had multiple mentors, please rate your most recent mentoring experience. Copyright 2002 The Johns Hopkins University School of Nursing

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree or disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly Disagree (7)
My mentor was supportive and encouraging. (1)	❍	❍	❍	❍	❍	❍	❍
My mentor provided constructive and useful critiques of my work. (2)	❍	❍	❍	❍	❍	❍	❍
My mentor motivated me to	❍	❍	❍	❍	❍	❍	❍

improve my work product. (3) My mentor was helpful in providing direction and guidance on professional issues (e.g., networking). (4)	❍	❍	❍	❍	❍	❍	❍

Section C: Please rate the level of effectiveness of your mentoring relationship. If you have had multiple mentors, please rate your most recent mentoring experience. Copyright 2002 The Johns Hopkins University School of Nursing

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree or disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly Disagree (7)
My mentor answered my questions satisfactorily (e.g., timely response, clear, comprehensive) (1)	❍	❍	❍	❍	❍	❍	❍
My mentor acknowledged my contributions appropriately (e.g., committee contributions,	❍	❍	❍	❍	❍	❍	❍

awards). (2) My mentor suggested appropriate resources (e.g., experts, electronic contacts, source materials). (3)	❍	❍	❍	❍	❍	❍	❍
My mentor challenged me to extend my abilities (e.g., risk taking, try a new professional activity, draft a section of an article) (4)	❍	❍	❍	❍	❍	❍	❍

Part III: Job Satisfaction

Think of your job in general. All in all, what is it like most of the time? Click on the "Yes" if it describes your job, "No" if it does not describe it, "?" if you cannot decide.

	Yes (1)	No (2)	? (3)
Pleasant (14)	❍	❍	❍
Bad (15)	❍	❍	❍
Great (16)	❍	❍	❍
Waste of Time (17)	❍	❍	❍
Good (18)	❍	❍	❍
Undesirable (19)	❍	❍	❍
Worthwhile (20)	❍	❍	❍
Worse than most (21)	❍	❍	❍
Acceptable (22)	❍	❍	❍
Superior (23)	❍	❍	❍
Better than most (24)	❍	❍	❍
Disagreeable (25)	❍	❍	❍

Makes me content (26)	❍	❍	❍
Excellent (28)	❍	❍	❍
Inadequate (27)	❍	❍	❍
Rotten (30)	❍	❍	❍

Part IV: Think about your current job and please rate below your current level of your intent to leave your position.

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
I often think about quitting this job (1)	❍	❍	❍	❍	❍	❍	❍
I will probably look for a new job during the next year (2)	❍	❍	❍	❍	❍	❍	❍
I am actively looking for	❍	❍	❍	❍	❍	❍	❍

another job (3)							

Part V: This last section asks you to provide information about yourself. Please be reminded that all your answers are confidential

Q11 What is your current position within the PA program?

- ❍ Program Director (1)
- ❍ Academic Director (2)
- ❍ Clinical Director (3)
- ❍ Medical Director (4)
- ❍ Professor (9)
- ❍ Associate Professor (5)
- ❍ Assistant Professor (6)
- ❍ Instructor (7)
- ❍ Other (8)

Are you:

- ❍ Clinical track (1)
- ❍ Tenure track (2)
- ❍ Tenured (3)
- ❍ Not eligible for tenure (4)

Total years in PA education:

- ❍ less than 1 year (1)
- ❍ 1-5 years (2)
- ❍ 5-9 years (3)
- ❍ 10-15 years (4)
- ❍ 15+ years (5)

What is the highest degree you have earned?

- ❍ Doctorate (1)
- ❍ Master (2)
- ❍ Bachelor (3)
- ❍ Associate (4)
- ❍ Certificate (5)

What is your gender?

- ❍ Male (1)
- ❍ Female (2)

Comments

Appendix B

Mentoring Effectiveness Scale

Sep 8, 2016

Amy Bronson <a-bronson@bethel.edu>

Dr. Berk,

I am e-mailing you in reference to your article published in Academic Medicine Vol. 80 No. 1, 2005, titled, Measuring the Effectiveness of Faculty Mentoring Relationships. I am wondering if I might be able to use your survey instrument in my dissertation on mentoring in Physician Assistant Education. Any other advice or feed-back you may have from your own research experience with this topic, is also greatly appreciated.

Please contact me if you any further questions or concerns,

Thank you in advance,

Amy

Amy J. Bronson, PA-C

Doctoral Student

Bethel University

Sep 9

Ronald Berk <rberk1@jhu.edu>

Dear Amy:

Thank you for your inquiry. I hereby give you permission to use the mentorship scales intact or modified for your target population in your mentoring research for your thesis as long as the copyright line, which has been updated, remains affixed at the bottom and the article is referenced. Indicate that you adapted the scale for your research.

The most recent reformatted version can be found on www.ronberk.com (Publications, click Articles, scroll down to article, click PDF, enjoy!) and also in my book *Thirteen Strategies to Measure College Teaching*. There is also another article on the matching of mentor to mentee you might find of interest based on speed dating.

I hope you find these materials useful in your doctoral research. Thank you for your interest in our work. If I can be of further help, please don't hesitate to ask.

Sincerely,

Ron

Ronald A Berk, PhD
Professor Emeritus, Biostatistics & Measurement,
Former Assistant Dean for Teaching,
The Johns Hopkins University
Email: **rberk1@jhu.edu** **Phone: 410-940-7118**
Speaking Brochure: **http://www.ronberk.com/docs/brochure_education.pdf**
Websites: **www.ronberk.com** **www.pptdoctor.net**
LinkedIn: **http://www.linkedin.com/in/ronberk/**
Facebook: **http://www.facebook.com/pptdoctor** **www.facebook.com/raberk**

Appendix C

Turnover Intentions Measure

PsycTESTS Citation: Xu, X., & Payne, S. C. (2014). Turnover Intentions Measure [Database record]. Retrieved from PsycTESTS. doi: http://dx.doi.org/10.1037/t37749-000

Instrument Type: Rating Scale

Test Format: The 3 items on the Turnover Intentions Measure are scored on a 5-point agreement scale.

Source: Xu, Xiaohong, & Payne, Stephanie C. (2014). Quantity, quality, and satisfaction with mentoring: What matters most? Journal of Career Development, Vol 41(6), 507-525. doi: 10.1177/0894845313515946, © 2014 by SAGE Publications. Reproduced by Permission of SAGE Publications.

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PsycTESTS™ is a database of the American Psychological Association

doi: http://dx.doi.org/10.1037/t37749-000

Turnover Intentions Measure

Items

I often think about quitting this job.

I will probably look for a new job during the next year.

from Cammann et al. (1983)

I am actively looking for another job.

from Mayfield and Mayfield's (2007) ''intentions to stay'' scale

Appendix D

Job in General Scale

jdi_ra@bgsu.edu e-mail correspondence Sept. 9

Thank you for requesting JDI-related scales.

Terms of Use

Terms of Use for JDI-related scales (i.e., JDI/JIG, aJDI/aJIG, SIG, and TIM)

1. I understand that the JDI scales provided on this website are owned by BGSU, are proprietary to BGSU and BGSU owns the copyright to these JDI scales.
2. I understand that the JDI scales provided on this website are provided free of charge, but that a valid e-mail address is required for access to and use of the JDI scales. (Note: We respect your privacy and will never distribute or sell your information to any third party.)
3. I understand that the JDI Office may occasionally contact me via e-mail about its products and services.
4. I understand the scales are for my sole use only and will not distribute them to any third party.
5. I understand the scales may not be reprinted or otherwise published in their full form, and I will contact the JDI Office to obtain specific sample items that may be published should the need arise.
6. I understand the scales were developed by researchers at Bowling GreenState University and any publication/presentation involving the scales must include proper and scholarly citation.
7. I understand the scales are intended to be used "as is" without any modifications to the items and/or the scoring procedure.

Appendix E

Solicitation Letter/Email for Prospective Participants

Dear Prospective Study Participant,

I am Amy Bronson, A Doctoral Candidate in the Educational Leadership in Higher Education program at Bethel University.

You are invited to participate in a study on mentoring in physician assistant education. You were selected as a possible participant in this study because of your current role as an educator in a physician assistant program. You are receiving this message via an email distribution to all faculty members of PA programs on the PAEA all faculty listserv.

The purpose of this study is to investigate the correlation between the effectiveness of mentoring, faculty perceived levels of job satisfaction, and faculty turn-over intentions for Physician Assistant(PA) Educators in the United States. This will include gathering information related to the nature and extent of the current mentoring practices in PA education.
Researchers investigating faculty transition from the clinic to academia across various medical disciplines have found a significant correlation between mentoring relationships and increased overall career satisfaction (Faurer, Sutton, & Worster, 2014; Gustin & Tulsky, 2010; Straus, Johnson, Marquez, & Feldman, 2013; Xu, et al., 2014). Mentoring offers the guidance faculty need to gain the skills and tools necessary to achieve goals associated with a successful academic career.

To participate in this study, you must:

1. Be a full-time physician assistant faculty member
2. Be a licensed physician assistant
3. Have access to the internet and the ability to access the link to the online survey.

Your participation is voluntary. You may choose not to participate. If you decide to participate in this survey, you may withdraw at any time. If you decide not to participate in this study or if you withdraw from participating at any time, you will not be penalized.
The procedure involves filling out an online survey that will take less than 5 minutes to complete. Your responses will remain confidential and disclosed only with your permission. In any written reports or publications, no one will be identified or identifiable and only aggregate data will be presented. The results of this study will be used for scholarly purposes only.

This research project has been approved by my research advisor in accordance with Bethel's Levels of Research with Humans. If you have any questions about the research and/or research participants' rights or wish to report a related injury, please contact Researcher- Amy Bronson 303 842-0001 or Faculty Advisor-Wallace Boeve: 651 635-1013.

By completing and returning the survey, you are granting consent to participate in this research.
Your participation is greatly appreciated.

Sincerely,
Amy Bronson, MMS, PA-C

Appendix F

Bethel IRB Approval

Amy Bronson <a-bronson@bethel.edu> Jan 26

Hi Craig

I am excited to submit my formal request for approval of my planned dissertation research with human subjects. Please find attached the IRB proposal, which includes the following appendices:

1) Appendix A- Informed Consent

2) Appendix B- Survey Instrument

3) Appendix C- Permission Documents

Please let me know if you have any questions or need any further information. I look forward to hearing from you.

Best Regards, Amy

Craig Paulson Jan 26

Hi Amy,

Your IRB proposal has been approved at Level II by the Bethel University Education Department IRB Committee. It has the approval code of 012617-01.

Congratulations on moving forward so well with your research.

Best wishes !

Craig

For office use only:

Code number __ **012617-01**_____ Action: Approved at Level II by the Bethel University Education Department IRB Committee

Date reviewed _1.26.17_____

Appendix G

Physician Assistant Education Association Member Directory

Donovan Lessard <dlessard@paeaonline.org> Oct 31 (12 days ago)

to me

Hello Amy,

Good morning. I received your email regarding using the PAEA all-faculty listerv and the process for approval to survey faculty through the listerv. Regarding the procedure: PAEA does not circulate unsolicited surveys to our membership. The membership directory information is unrestricted, however, and members can create a sample through pulling email addresses and names manually.

With that said, there is a high likelihood that we already collect the information you're looking for. What exactly are you interested in? If we have the information you can put in either a raw data request or a research report (links halfway down page): http://paeaonline.org/research/paea-data-request/. There are separate member and non-member rates, but it could be very worth it to save the trouble of administering a survey yourself.

Let me know.

Thanks,

Donovan Lessard, MA

Director of Research/Senior Data Analyst

Appendix H

Codebook

	Code	Question	Answer				
Inclusionary Criteria	Q1_1	Full-time Physician Assistant faculty member	Yes	No			
	Q1_2	Licensed Physician Assistant	Yes	No			
	Q2	At anytime during your academic career have you had a mentor?	Yes	No			
Mentee Experience	Q3	How many mentors have you had in your career?	1	2	3	4	5+
	Q4	On average, how many years of mentoring have you received?	1	2	3	4	5+
	Q5	How would you best categorize your mentoring experience?	Formal	Informal	None		
Mentor Information	Q6_1	Do you have a faculty mentor at your institution?	Yes	No			
	Q6_2	Is your mentor a faculty member or administrator within your department?	Yes	No			
	Q6_3	Is your mentor a faculty member or administrator on your campus?	Yes	No			
	Q6_4	Is your faculty mentor from outside your institution?	Yes	No			
Institution Support	Q7_1	protected time for mentoring meetings?	Yes	No	N/A		
	Q7_2	clear objectives for mentoring relationships?	Yes	No	N/A		
	Q7_3	support for mentoring on scholarly initiatives?	Yes	No	N/A		

	Q7_4	availability of formal or informal mentor or protege trainings?	Yes	No	N/A				
	Q7_5	assistance in matching a mentor/protege.	Yes	No	N/A				

Mentoring Effectiveness	Q8_1	My mentor was accessible.	Strongly Disagree = 0	Disagree = 1	Somewhat Disagree = 2	Neither Agree Nor Disagree = 3	Somewhat Agree = 4	Agree = 5	Strongly Agree = 6
	Q8_2	My mentor demonstrated professional integrity.	Strongly Disagree = 0	Disagree = 1	Somewhat Disagree = 2	Neither Agree Nor Disagree = 3	Somewhat Agree = 4	Agree = 5	Strongly Agree = 6
	Q8_3	My mentor demonstrated content expertise in my area of need.	Strongly Disagree = 0	Disagree = 1	Somewhat Disagree = 2	Neither Agree Nor Disagree = 3	Somewhat Agree = 4	Agree = 5	Strongly Agree = 6
	Q8_5	My mentor was approachable.	Strongly Disagree = 0	Disagree = 1	Somewhat Disagree = 2	Neither Agree Nor Disagree = 3	Somewhat Agree = 4	Agree = 5	Strongly Agree = 6
	Q9_1	My mentor was supportive and encouraging.	Strongly Disagree = 0	Disagree = 1	Somewhat Disagree = 2	Neither Agree Nor Disagree = 3	Somewhat Agree = 4	Agree = 5	Strongly Agree = 6
	Q9_2	My mentor provided constructive and useful critiques of my work.	Strongly Disagree = 0	Disagree = 1	Somewhat Disagree = 2	Neither Agree Nor Disagree = 3	Somewhat Agree = 4	Agree = 5	Strongly Agree = 6
	Q9_3	My mentor motivated me to improve my work product.	Strongly Disagree = 0	Disagree = 1	Somewhat Disagree = 2	Neither Agree Nor Disagree = 3	Somewhat Agree = 4	Agree = 5	Strongly Agree = 6
	Q9_4	My mentor was helpful in providing direction and guidance on professional issues (e.g., networking).	Strongly Disagree = 0	Disagree = 1	Somewhat Disagree = 2	Neither Agree Nor Disagree = 3	Somewhat Agree = 4	Agree = 5	Strongly Agree = 6
	Q10_1	My mentor answered my questions satisfactorily (e.g., timely response, clear, comprehensive)	Strongly Disagree = 0	Disagree = 1	Somewhat Disagree = 2	Neither Agree Nor Disagree = 3	Somewhat Agree = 4	Agree = 5	Strongly Agree = 6
	Q10_2	My mentor acknowledged my contributions appropriately (e.g., committee contributions, awards).	Strongly Disagree = 0	Disagree = 1	Somewhat Disagree = 2	Neither Agree Nor Disagree = 3	Somewhat Agree = 4	Agree = 5	Strongly Agree = 6
	Q10_3	My mentor suggested appropriate resources (e.g., experts, electronic	Strongly Disagree = 0	Disagree = 1	Somewhat Disagree = 2	Neither Agree Nor Disagree = 3	Somewhat Agree = 4	Agree = 5	Strongly Agree = 6

		contacts, source materials).							
	Q10_4	My mentor challenged me to extend my abilities (e.g., risk taking, try a new professional activity, draft a section of an article)	Strongly Disagree = 0	Disagree = 1	Somewhat Disagree = 2	Neither Agree Nor Disagree = 3	Somewhat Agree = 4	Agree = 5	Strongly Agree = 6
Job Satisfaction	Q11_14	Pleasant	Yes = 3	No = 0	? = 1				
	Q11_15	Bad*	Yes = 0	No = 3	? = 1				
	Q11_16	Great	Yes = 3	No = 0	? = 1				
	Q11_17	Waste of Time*	Yes = 0	No = 3	? = 1				
	Q11_18	Good	Yes = 3	No = 0	? = 1				
	Q11_19	Undesirable*	Yes = 0	No = 3	? = 1				
	Q11_20	Worthwhile	Yes = 3	No = 0	? = 1				
	Q11_21	Worse than most*	Yes = 0	No = 3	? = 1				
	Q11_22	Acceptable	Yes = 3	No = 0	? = 1				
	Q11_23	Superior	Yes = 3	No = 0	? = 1				
	Q11_24	Better than most	Yes = 3	No = 0	? = 1				
	Q11_25	Disagreeable*	Yes = 0	No = 3	? = 1				
	Q11_26	Makes me content	Yes = 3	No = 0	? = 1				
	Q11_28	Excellent	Yes = 3	No = 0	? = 1				
	Q11_27	Inadequate*	Yes = 0	No = 3	? = 1				
	Q11_30	Rotten*	Yes = 0	No = 3	? = 1				
Turnover Intentions Measure	Q12_1	I often think about quitting this job	Strongly Agree = 7	Agree = 6	Somewhat Agree = 5	Neither Agree Nor Disagree = 4	Somewhat Disagree = 3	Disagree = 2	Strongly Disagree = 1
	Q12_2	I will probably look for a new job during the next year	Strongly Agree = 7	Agree = 6	Somewhat Agree = 5	Neither Agree Nor Disagree = 4	Somewhat Disagree = 3	Disagree = 2	Strongly Disagree = 1
	Q12_3	I am actively looking for another job	Strongly Agree = 7	Agree = 6	Somewhat Agree = 5	Neither Agree Nor Disagree = 4	Somewhat Disagree = 3	Disagree = 2	Strongly Disagree = 1
Demographic Information	Q14	What is your current position within the PA program?	Program Director	Academic Director	Clinical Director	Medical Director	Professor	Associate Professor	Assistant Professor	Instructo
	Q15	Are you:	Clinical track	Tenure track	Tenured	Not eligible for tenure = 0			
	Q16	Total years in PA education:	Less than 1 year = 0	1-5 years = 1	5-9 years = 2	10-15 years = 3	15+ years = 4		

Q17	What is the highest degree you have earned?	Doctorate = 4	Master = 3	Bachelor = 2	Associate = 1	Certificate = 0
Q18	What is your gender?	Male = 1	Female = 0			
Q19	Comments					