ABSTRACT

CONIGLIO, DAVID MARTIN. Factors Predicting Physician Assistant Faculty Intent to Leave. (Under the direction of Dr. Duane Akroyd).

An increasing demand for education of physician assistants (PAs) has resulted in rapid growth in the number of PA educational programs. Faculty for these programs may be recruited from existing programs. Understanding faculty turnover intention is important to guide faculty development and to improve faculty retention. The purpose of this research was to propose and to test a model of factors predictive of PA faculty intent to leave the current position.

The study was a non-experimental, cross-sectional, predictive research design using quantitative analytic measures. A random sample of PA faculty was identified from the Physician Assistant Education Association faculty database. Exploratory factor analysis identified factors for the model. Descriptive statistics summarized respondent characteristics. Multiple regression was used to determine the percent of variance in the dependent variable accounted for by the linear combination of independent variables and to determine which independent variables were significant predictors of intent to leave.

In this study of PA faculty organizational support, age, and role conflict were significant predictors of faculty intent to leave. Future research may identify other predictive factors such as external job opportunities, family considerations, stress and burnout, or organizational commitment. These findings have implications for faculty development and faculty retention efforts.

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Factors Predicting Physician Assistant Faculty Intent to Leave

by
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DEDICATION

To my wife, Lara Campagna; and to my children, John Kyle Coniglio and Amanda Coniglio,
with thanks for your unwavering love and support.

BIOGRAPHY

David Coniglio was born and raised in Nashville, Tennessee. After graduation from West End High School, he entered the University of the South, Sewanee, Tennessee from 1968-1972, earning a Bachelor of Arts in English. Subsequently he earned a Master of Public Administration Degree in 1978, from a joint program between the University of Tennessee, Knoxville, TN and Middle Tennessee State University, Murfreesboro, TN. He earned a Certificate of Completion of Physician Assistant Studies from the Medical University of South Carolina, Charleston, SC, in 1982. In 2007, he was admitted to the Doctoral Program in Adult and Community College Education at North Carolina State University, Raleigh, NC.

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David has served as the President of the North Carolina Academy of Physician Assistants (1989), the Association of Physician Assistants in Oncology (2009-2010), and served as the first Medical Liaison from the American Academy of Physician Assistants to the American Society of Clinical Oncology (2005-2007). He is a member of the Editorial Board of the *Journal of Oncology Practice*, a publication of the American Society of Clinical Oncology. He has published in the fields of medical oncology and physician assistant education.

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In Memoriam

From the beginning my parents, John Coniglio, Ph.D. and Carmen Coniglio, placed the highest priority on my education, as well as that of my brothers. They led by example.

My initial steps down this educational path were illuminated by that bright and shining light which was, and is, the spirit of Dr. Colleen Weissner. It was my privilege to have studied under her direction. I am grateful for that opportunity.

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CHAPTER ONE: INTRODUCTION

Faculty constitute a necessary component of the learning community in formal higher education, graduate education, and professional education settings. Understanding the attitudes and perceptions of faculty regarding their worklife is crucial in the rapidly changing educational climate of the early twenty-first century. Across the spectrum of institutional types, there may be common issues facing all faculty; there are also unique factors affecting faculty worklife in specific institutional settings or disciplines. Influences on faculty worklife arise from individual, organizational, and external environmental settings, and may affect the intention of the faculty member toward staying in or leaving the current position, the institution, or the professional setting. This study was designed to explore the individual, human capital, organizational, and environmental factors influencing intent-to-leave a professional setting among faculty in physician assistant education programs.

Intent-to-leave

Understanding the reasons why faculty leave or maintain their faculty positions provides support for institutional development, for faculty growth and development; as well it extends our understanding of factors affecting faculty worklife. Further, understanding the predictors of faculty turnover should provide academic administrators information that would decrease unwanted faculty departure.

Turnover may be involuntary or voluntary. Voluntary turnover, not related to retirement at the end of a career, may be brought about due to personal factors or perceptions about the current employment setting, such as a concern that salary is inadequate, or that organizational influences such as working conditions are not acceptable. External influences

such as family considerations, or a job offer from a different institution, may also contribute to turnover. The act of leaving may involve departure from a specific position, an institution, or may involve a career change.

Turnover intention may be represented by measures of intent-to-stay, or by measures of intent-to-leave. Intent-to-stay is a measure of a purposeful decision to remain in a setting (Cho, Johanson, & Guchait, 2009; Tett and Meyer, 1993); intent-to-leave, conversely, measures the individual's thoughts and actions indicating a desire to leave a setting in a specified amount of time (Barnes, Agogo, & Coombs, 1998; Daly & Dee, 2006; Heckert & Farabee, 2006; Rosser, 2004; Ryan, Healy & Sullivan, 2012; Smart, 1990; Xu, 2009; Zhou & Volkwein, 2004). While the terms intent-to-stay and intent-to-leave may be considered equivalent turnover measures, some believe that they measure different intentions or behaviors (Cho, Johanson, & Guchait, 2009).

Conceptually, the variables affecting faculty turnover intent have derived from psychological and structural domains. Of the former, job satisfaction is the most studied; others include morale and the effects of stress. Stress variables related to intention to leave included time commitment and sense of community (Barnes, Agogo, & Coombs, 1998) and workplace stress (Ryan, Healy, & Sullivan, 2012). Johnsrud and Rosser (2002) found significant relationships between perceptions of dimensions faculty worklife, professional priorities and rewards, and quality of life on faculty intention to leave career, position and institution, through both direct effects and indirect effects mediated by morale. Many dimensions of job satisfaction have been correlated with turnover intention including salary and benefits, elements of work quality of life, faculty governance and autonomy, and collegial

relations (Daly & Dee, 2004; Heckert & Farabee, 2006; Rosser, 2004; Ryan, Healy, & Sullivan, 2012; Smart, 1990; Zhou & Volkwein, 2004).

Faculty perceptions of structural elements of faculty worklife, the faculty work environment, and other organizational contextual elements have included autonomy and workload (Daly & Dee, 2006; Zhou & Volkwein, 2004); communication, distributive justice, role conflict (Daly & Dee, 2006); components of faculty worklife (Johnsrud & Rosser, 2002; Rosser, 2004, 2005; Zhou & Volkwein 2004); and organizational support and specific measures of faculty productivity (Ryan, Healy, & Sullivan, 2012). The effect on turnover intent of organizational commitment was shown by Daly & Dee (2006) in their study of faculty intention to stay. Organizational worklife dimensions in Rosser's (2004, 2005) conceptual model included technical support, administrative support, committee service work, professional development, advising and course load, and benefits and security. The work of Zhou & Volkwein (2004) framed structural and organizational characteristics (institutional type, employee benefits, and work experience characteristics including productivity, workload, and compensation) in the context of mediating variables measuring job satisfaction (including job security, workload, compensation, autonomy, resources, and institutional climate).

External environmental factors also contribute to the turnover intention of a faculty member. External environmental effects can be job-related such as an external offer, or related to personal considerations including family needs, spousal job opportunities, or other kinship responsibilities. In a study of tenured and non-tenured faculty using the data from NSOPF-99, Zhou and Volkwein (2004) found little influence of external job or family

considerations on tenured faculty intent-to-leave, with similar findings for non-tenured faculty. Conversely, in a study of faculty at urban public universities, Daly and Dee (2006) found significant relationships between external job opportunities and kinship responsibilities on faculty intent to stay. Earlier, Matier (1990) demonstrated a relationship between external offers and faculty turnover, related to the degree of perceived external inducement to leave (“pull”) and factors “pushing” a faculty member away from the current institution. Smart (1990) found indirect perceptions of teaching and research time, research productivity, climate and governance participation to have direct and indirect effects on intent-to-leave in both tenured and non-tenured faculty.

The contribution of individual, personal, and demographic factors to faculty intent-to-leave is widely reported, as these are commonly studied control variables. There are differences across studies in which factors influence intent-to-leave. These variables include age, gender, race or ethnicity, tenure status, faculty rank; and often years in current position or seniority, highest academic degree held, depending on the institution type and setting (Barnes, Agogo, & Coombs, 1998; Daly & Dee, 2006; Smart, 1990; Xu, 2009; Zhou & Volkwein, 2004). Within the literature of higher education, some researchers consider personal characteristics such as *highest degree held*, and *years in current position*, for example, to be elements of human capital (Perna, 2005; Porter & Toutkoushian, 2006; Toutkoushian, 2005; Umbach, 2007). Human capital theory posits that individual characteristics including educational achievement benefit the individual’s position in the marketplace; for example a faculty member with a higher degree may have better opportunity than one with a lesser

degree (Becker, 1964). Within the literature on faculty turnover intent, however, only Xu (2008) has modeled these faculty attributes as a variable *human capital*.

Research methodologies and study populations are varied. Much of the current research of postsecondary faculty turnover intent has been performed on secondary data sets including the National Survey of Postsecondary Faculty 1999 (NSOPF-99), a survey of public and private research and doctoral institutions, (Rosser, 2004; Rosser 2005; Xu, 2008; Zhou & Volkwein, 2004); the Higher Education Research Institute (HERI) Faculty Survey administered as a census survey to faculty at a large public research university in the mid-western United States (Ryan, Healy, & Sullivan, 2012); and the 1989 National Survey of American Professorate conducted by the Carnegie Foundation for the Advancement of Teaching (Barnes, Agogo, & Coombs, 1998). Primary research instruments included census surveys of faculty at a 10 campus western public university (Johnsrud & Rosser, 2002) and a mid-sized public mid-western public liberal arts university with an emphasis on teaching (Heckert & Farabee, 2006). A random sample of faculty at 15 urban public universities was conducted by Daly and Dee (2006) in their study of faculty intent-to-stay.

Analyses of study data varied according to study design and purpose. For testing new conceptual models of turnover intent, including the direct effects of variables as well as some moderating effects, structural equation modeling (SEM) was used (Johnsrud & Rosser, 2002; Rosser, 2004; Rosser, 2005; Zhou and Volkwein, 2004). Daly and Dee (2006) used path analysis in their study of intent-to-stay. Other researchers analyzed the effect of variables on intent to stay using multiple regression (Barnes, Agogo, & Coombs, 1998; Heckert & Farabee,

2006; Xu, 2008) or logistic regression (Ryan, Healy, & Sullivan, 2012) depending on the operationalization of the dependent variable.

Although the intent-to-leave literature on post-secondary faculty is robust, there are gaps in the literature regarding faculty turnover intent. There is little research regarding the turnover intentions of graduate and professional faculty. This study extends the faculty intent-to-leave literature by studying intent-to-leave among physician assistant faculty.

Physician Assistant Faculty

The physician assistant (PA) profession is a relatively new health profession with a unique educational structure. The profession began in the 1960s, as a response to perceived need to train non-physician health care providers to meet the need for shortages in the physician workforce (Cawley, 2007). Currently there are 164 accredited physician assistant educational programs (Accreditation Review Commission on Education for the Physician Assistant [ARC-PA], 2011). Approximately 88% of all PA programs are graduate medical education programs conferring a master's degree (Lane & Scott, 2012).

Physician Assistants are licensed health-care providers who are educated in a medical model. The “medical model” means that the education and training is structured in the same manner as the training of physicians. PA students undergo a didactic phase of training in the basic and clinical sciences, followed by a series of clinical rotations or clerkships, which are supervised experiential training opportunities. After completion of training and completion of a national certification examination (“Boards”), PAs may be licensed to practice medicine by individual states or federal agencies; the license to practice requires a collaborative supervisory relationship with a supervising physician. PAs work in all medical disciplines,

participate in clinical research, and may serve as full-time or part-time academic or clinical faculty in physician assistant education programs. Demand for physician assistants in the health workforce has increased rapidly over the past decade, driven by a number of factors including predictions of severe shortage of physicians and increasing demand for health care services between now and 2020, as well as perceived changes in models of care proposed in the debate about health care reform.

The United States Bureau of Labor Statistics (BLS) projects that the number of PA jobs in the United States will increase by 39 percent between 2006 and 2016 (United States Bureau of Labor Statistics [BLS], 2008-2009a). According to reports published by the American Academy of Physician Assistants (AAPA) the PA profession was ranked the second fastest growing profession in the country in 2007 (American Academy of Physician Assistants [AAPA], n.d.). In a recent review of the best jobs in America, CNN Money ranked the physician assistant profession as the 2nd best job in the country (CNN Money, 2009). The BLS data suggest that the need for PAs engaged in educational programs will increase by 11.8 percent over the same time period (BLS, 2008-2009b).

The projected growth in the PA profession is a stimulus for increasing PA program class sizes. In a survey of PA programs in 2007, 50 percent of the 105 responding programs indicated planned growth in class size (unpublished data, Physician Assistant Education Association [PAEA], n.d.). Among the 137 nationally accredited PA education programs in the United States responding to the annual survey of PA educational programs conducted by the PAEA, approximately 1200 faculty members are employed (Lane & Scott, 2012). Educational programs which train physician assistants are required by national accreditation

standards to maintain core faculty who are nationally certified physician assistants (ARC-PA, 2012). PA educational programs are located in a variety of sponsoring institutions including academic health centers, four-year colleges, community colleges, and universities; and are found in both the public and private sectors. The most recent data from the PAEA documented the addition of 18.8 percent faculty in the 2008-2009 reporting period, with a loss of 9 percent of faculty during the same period (Liang, 2010). This growth and loss data was not reported in the most recent PAEA annual report, published in January 2012 (Lane & Scott, 2012)

The PAEA Annual Report for 2009-2010 (Lane & Scott, 2012) offers a summary of who make up the body of PA faculty. Of reporting institutions, the mean age of faculty was 48.7 years; 56% of respondents were women; 89.2% of respondents were white (non-Hispanic). The majority of faculty (77.7%) were licensed PAs. Faculty had been in their current position for a mean of six years. A majority of faculty held appointments at the rank of Assistant Professor (47.3%) or Lecturer/Instructor (22.6%), with 18.2% of faculty at the rank of Associate Professor, 6% at the rank of Professor, and 5.5% ranked as “Other”. A doctoral degree was held by 32% of surveyed faculty. Regarding tenure status, 70.8% were neither tenured nor on tenure-track. In addition to academic responsibilities, faculty averaged 14.5 clinical work hours per week. Tenure status, academic rank, clinical work expectations in addition to faculty workload, and the percent of women comprising the PA faculty workforce all resonate with themes important in the study of academic faculty worklife, and turnover intention.

Summary information regarding why PA faculty end their employment is not included in the most recent PAEA Annual Report. For 2008-2009, the previous reporting period, the primary reasons for leaving a faculty appointment were: return to clinical practice, geographic relocation, retirement, family obligations, and career advancement (Liang, 2010). Data from this report, however, is gathered from programs (often an academic administrator such as program director) in a retrospective manner, and should not be considered fully representative of predictors of intent-to-leave. Other data suggests that there are a variety of reasons given for faculty terminating employment, including job dissatisfaction, career changes including return to clinical practice or promotion from current faculty position, and changing geographic location (Hooker & Cawley, 2003).

Statement of the Problem

Maintaining engaged, productive, and dedicated faculty members is critical to the success of an academic enterprise. PA educational programs that lack a productive, dedicated, experienced faculty may find it difficult to recruit or retain students, provide a quality education, and recruit and retain faculty and staff. Damage to the institutional reputation may occur. A number of factors may contribute to the intent of a faculty member to leave an institution or remain in a faculty setting at a differing institution. Understanding factors associated with faculty intent-to-leave should contribute information useful to academic administrators seeking to create a more stable faculty, provide better opportunities for recruitment of new faculty, and inform planning of faculty development programs that may increase retention rates.

In the non-health professions faculty literature there is extensive research on intent-to-leave (Callister, 2006; Daly & Dee, 2006; Johnsrud & Rosser, 2002; Matier, 1990; Rosser, 2004; Rosser, 2005; Rosser & Townsend, 2006; Smart, 1990; Xu, 2008; Zhou & Volkwein, 2004). Conceptualizing faculty worklife is difficult; Johnsrud and Rosser (2002, p. 521) note:

To reduce faculty worklife to a subset of issues may be premature, and it certainly risks aggregating to a level of abstraction that renders the constructs meaningless. Nonetheless, it is important to theory building to reduce the complexity of numerous variables of interest to constructs that capture reality in the simplest way that is still meaningful.

Constructs of interest in the current faculty turnover literature include perceptions of worklife (Rosser, 2004; Zhou & Volkwein, 2004); morale and perceptions of worklife (Johnsrud & Rosser 2002); and worklife and job satisfaction (Rosser 2004; Zhou & Volkwein, 2004). The faculty studied in these settings included those of four year colleges, and research-intensive universities; in both public and private university settings. None of the studies examined faculty whose principal role was in health professions education settings.

Many of these studies relied on data from the National Surveys of Postsecondary Faculty (1994, 1999, and 2004). The use of the national databases is not without limitations (Rosser, 2005). Identification of areas of faculty worklife suitable for study is restricted to those concepts identified and queried in the original datasets; often each variable of interest is described by a single item or statement.

Health professions faculty who work in academic settings which include faculty from traditional academic disciplines may experience influences on turnover intent that differ from those of the faculty in the traditional academic disciplines. Xu (2008) demonstrated that discipline matters in considering turnover intention. Understanding the influences on turnover intent of specific health professions faculty may provide academic administrators with data necessary for improving faculty retention. As well, an understanding of factors influencing health professions faculty turnover intent will extend the literature on faculty worklife.

By virtue of the nature of their collaborative work with physicians and other health care providers, PA faculty may work within a dual role structure, serving as both educators and clinicians. The dual nature of the clinician-academician role is further complicated by divisions of labor in how PA programs are structured, with some faculty assigned to roles coordinating the pre-clinical or academic curriculum, and others responsible for coordination of learning in the clinical year. Yet other faculty assume a generalist role and work within both arenas. There is considerable potential for role conflict to arise as a result of these multiple roles. There is an absence of data in the PA education literature regarding whether or not the differences in these academic and clinical roles leads to differing rates of turnover among PA faculty. Understanding the impact role differences may have on faculty turnover intention would assist academic administrators in individualizing faculty development and retention efforts based on faculty roles. The competing roles between clinical and faculty practice, and among elements of faculty work, are likely to influence PA faculty turnover intent due to increasing stress from role conflict; but PA faculty have not been included in

studies of faculty turnover and thus it is unclear whether these factors may contribute to PA faculty intent to leave.

A number of studies in the general faculty turnover literature identify elements of job satisfaction (including age, relative autonomy in the workplace, and tenure status) as having direct effect on, or having indirect effect through satisfaction, on turnover intent (Rosser, 2004; Zhou & Volkwein, 2004). Whether job satisfaction is related to turnover intent for PA faculty has not been studied. It is likely that there are direct and indirect factors influencing PA faculty turnover intent. To identify factors that may have direct effect on turnover intent of PA faculty would inform future research in this field; thus direct effects on turnover intent are the focus of this study.

A study has been reported in the Physician Assistant education literature regarding PA job satisfaction and burnout, but this study did not attempt to correlate job satisfaction to turnover intent (Forister & Blessing, 2007), nor did it identify PA faculty as distinctly from among the surveyed clinical practitioners. Boeve (2007) reported the findings of a study of job satisfaction factors among PA faculty, but did not link his findings to measures of turnover intention. Snyder and colleagues (2010) published findings from a study of faculty who serve as clinical coordinators, reporting that clinical coordinators are satisfied with being on faculty, and being satisfied with the work role. The study did not address turnover intention. These few studies of PA faculty worklife do not offer conceptual frameworks of PA work that were grounded in theory. The body of literature on PA faculty worklife would be extended and improved by research based on clear conceptual frameworks and supporting theoretical context of faculty work.

It is not possible to generalize the findings from the literature regarding the perceptions of work-related factors from the general academic faculty of four-year institutions to PA faculty. PA faculty serve in different circumstances than general academic faculty. Many do not have the terminal degree required by the academic institution to be considered for tenure, the work demands of a dual clinical and academic appointment may create different perceptions of the quality of the academic worklife, and for this population different factors may influence turnover intent. A gap exists in intent-to-leave literature, and findings regarding how these issues affect PA faculty turnover intent may be helpful in extending what we know about faculty intent-to-leave in general.

An important component of faculty worklife is support that the institution provides the faculty member. Support may be administrative (Rosser, 2004; Rosser, 2005), technical (Rosser, 2004; Rosser, 2005), involve provision of adequate resources such as funding, or space (Rosser, 2004), or time to further academic and scholarly work (Rosser, 2004) or advocacy (Johnsrud & Rosser, 2002). A broader perspective on organizational support would include faculty perception of how the organization valued the individual (Fuller, Hester, Barnett, Frey, & Relyea, 2006).

With respect to PA faculty, questions arise regarding benchmarks for promotion and tenure which may be viewed as evidence of organizational regard for the faculty member. For example, research, publication, university service, and teaching all contribute in varying degrees to faculty workload and constitute factors for which faculty are judged for promotion and tenure. Bland and colleagues (2006) reported findings from a study of post-secondary faculty that showed the faculty status, in terms of tenure, was correlated with faculty

perception of work load and intention to leave. Approximately 71% of PA faculty are neither tenured nor tenure-eligible (Lane & Scott, 2012). PA faculty may feel undervalued based on the disparity between organizational expectations for doctorally-prepared faculty, given that the terminal degree for PA education is the Masters Degree.

Other concerns also exist which may mitigate how PA faculty are viewed and supported by their organizations. The majority of PA faculty are reported to be at the lower end of faculty status both as regards level of appointment and lack of opportunity for tenure (Lane & Scott, 2012). The majority of PAs now complete training with a combination of certification regarding clinical competency, and a Master's Degree from the institution attended. No further degree requirements exist for PAs entering the academic environment. Lack of the traditional terminal degree may be seen as a barrier to promotion or being on the tenure track. Less than one third of all PA faculty hold a doctoral degree (Lane & Scott, 2012). Additionally PA faculty may be ill-prepared by virtue of their training or the workload expectations of combined clinical-teaching practice to find time to engage in work required academic pursuits such as research and publication. Barriers to publication by PA faculty include time, resources, and support (Coniglio & Colletti, 2006; Hegmann & Dehn, 2006); and in a recent study Hegmann (2008) reported that almost three-quarters of all PA faculty had no peer-reviewed publications over the length of their careers. In a survey of PA academic leadership (deans and program directors) 58.7% of respondents rated scholarly activity as important for promotion considerations and 74.7% rated research and publication important for the profession, but only 23% thought allowing more time for research and publication was important for retention of faculty (Hegmann & Dehn, 2006). This raises a

serious question about organizational support for PA faculty to engage in traditional faculty work. Understanding whether institutional expectations regarding PA faculty productivity influence PA faculty turnover intention would serve to increase understanding of PA faculty worklife and assist faculty development planning, and retention efforts.

Understanding the factors influencing turnover of PA faculty is important for a number of reasons. Understanding whether dual roles influence PA faculty intent to leave may guide faculty in identification of the proper balance of effort between academic responsibilities and patient care responsibilities. The projected increase in number of faculty needed dictates the need for identifying qualified candidates from the general PA workforce. Recruitment of qualified faculty, as well as retention of faculty, may be improved if the work environment is designed to reduce or mitigate factors contributing to intent-to-leave. Understanding specific factors influencing PA faculty turnover intention may better inform faculty development initiatives.

Recruitment and retention of a diverse faculty is important if the workforce is to reflect the population it serves. Women comprise 56% of the PA faculty workforce; whites make up 89.2% of all PA faculty (Lane & Scott, 2012). The science and engineering (Callister, 2006), medical (Cropsey et al 2008), allied health (Blau & Lunz 1998); and nursing (Garbee & Killacky, 2008; Kovner, Brewer, Greene, & Fairchild, 2009) literature on faculty turnover intent documents that turnover intention among women faculty and minority faculty is much higher than for their male counterparts, for a number of reasons. The proportion of women PA faculty, approximately 56 % (Lane & Scott, 2012), is slightly lower than that of the overall PA workforce (64%; AAPA, 2008); but whites are disproportionately

represented on faculty. Data is not available regarding the percent of women or ethnic minority faculty leaving PA jobs on an annual basis. Understanding if women and minority PA educators share the same perceptions regarding intent-to-leave as do their non-medical faculty colleagues, and understanding the factors which motivate their intention to leave is important to bolster recruitment and retention strategies in order to promote an adequately diverse and representative faculty. There is a substantial gap in the literature in this regard.

Studies of PA faculty have been limited primarily to descriptive studies or bivariate correlations of PA faculty publishing patterns (Hegmann, 2008; Hegmann & Dehn, 2006; retirement intentions (Jones, Repka, Draper, & Orcutt, 2006), faculty benefits (Danielson, 2007) and burnout (Forister & Blessing, 2007). In a study of publishing history among doctorally prepared faculty, Orcutt and Gosdin (2005) did employ multiple regression analysis demonstrating that “years since degree awarded” and “total number of publications within one year of degree award” were positively related to total number of publications, and that their overall model “accounted for 68% of the variance in the total number of publications of PA faculty” (Orcutt & Gosdin, 2005, p 11).

While this data is useful to provide a general picture of the PA faculty workforce it does not provide an understanding of the influences that motivate faculty to remain in their positions, nor does it inform regarding turnover intentions. Using more sophisticated prediction models such as regression analysis for the study of PA faculty worklife would provide a deeper understanding of factors which influence PA faculty perceptions of academic work, and their intent-to-leave through an explanation of the influence of the variables under study on the dependent variable of interest.

The PAEA annual survey of member programs, completed by program directors or their designees, includes a request for information regarding barriers to hiring new faculty (Lane & Scott, 2012; Liang, 2010). The current annual report does not include this data, although the report for 2008-2009 cited barriers including lack of candidates, salary, lack of teaching experience by candidates, degree requirement, location, cost of living, and lifestyle choices (Liang, 2010). Difficulty recruiting implies an even more critical need to understand faculty intent-to-leave, in order to mitigate faculty departures. Reed (2006) published a literature review examining published data from previous PAEA annual reports on reasons cited for PA program personnel departure, citing job dissatisfaction as one element (Reed, 2006); then she reviewed relevant job satisfaction data from the literature of higher education and academic medicine suggesting that PA academic administrators could strengthen PA faculty retention by understanding factors motivating dissatisfaction among faculty in general.

None of the research on physician assistant faculty extends our knowledge of the how PA faculty perceive their roles and what factors may predict their intent to leave their jobs. Understanding these correlates may provide PA academic administrators information with which they could develop or strengthen faculty recruitment and retention initiatives, thereby improving the educational climate for an increasing number of physician assistant learners responding to a growing demand for well-educated, competent clinical providers.

Purpose

The purpose of this research is to examine demographic, human capital, organizational, and environmental factors which impact PA faculty intent to leave their current position.

Research Question

The specific research question is:

What is the predictive ability of demographic factors (age, gender, race, marital status, number of dependent children, employment status, actual hours worked), human capital factors (PA faculty role, faculty rank, tenure status, years as a PA educator, years in current position, and highest degree held), organizational factors (autonomy, organizational support, distributive justice, role conflict, workload), and environmental factors (job opportunities, family considerations), on physician assistant faculty intent-to-leave the current position?

Conceptual Framework

This study proposes a conceptual framework for the study of intent-to –leave, drawn from the work of Daly & Dee (2006) and Zhou & Volkwein (2004), studying domains of demographic variables, organizational variables, and external variables, on the dependent variable. The model includes the addition of a previously unstudied variable, *human capital*, and adds the factor “*organizational support*” to the variable *organizational*. The proposed conceptual model is presented graphically in Figure 1.

Figure 1. Proposed conceptual model of factors that predict physician assistant faculty intent-to-leave.

*Daly & Dee (2006) †Zhou & Volkwein (2004)

Dependent Variable - Intent to leave

Intent-to-leave was defined in this study as intention to leave the current position. Previous research of faculty intent-to-leave has focused on varying components of the intention to leave (intent-to-leave position, institution, or academic career), with some studies included a defined time-frame for the turnover intention (usually one to five years).

Daly & Dee (2006) limited their study of turnover intention to the institution. Zhou and Volkwein (2004) characterized intention to leave as staying in or leaving academe.

Few studies specified a certain time frame for the intended departure. Zhou and Volkwein (2004) used a three-year time frame for turnover intent, as did others (Johnsrud and Rosser, 2002; Smart, 1990). Some researchers have not indicated a time frame (Daly & Dee, 2004; Heckert & Farabee (2006). A variety of other time limits have been modeled including 5 years (Barnes, Agogo, and Coombs, 1998), and 2 years (Rosser, 2004; Ryan, Healy, & Sullivan, 2012; Xu, 2008).

Physician Assistant faculty may have defined academic positions within an institution, such as generalist faculty, academic coordinator, or clinical coordinator. Turnover intention may be related to changing roles, leaving the institution for another teaching opportunity, or leaving the academic career for a return to clinical practice or other work. This study does not attempt to describe these differences.

Independent Variables

Demographic factors.

The demographic items of interest include age, gender, race, marital status, number of dependent children, employment status, and actual hours worked per week. Demographic factors such as age, gender, and ethnicity are important to describe the population of interest in the study. Research has correlated turnover intention with gender (Matier, 1990; Smart, 1990; Zhou & Volkwein, 2004); and age (Smart, 1990), and ethnicity (Zhou & Volkwein, 2004). The importance of marital status and number of dependent children has not been studied. Full or part-time employment status has been shown to be important in understanding differences in community college faculty measures of organizational commitment (Engel,

2010). Other research has failed to link demographic factors with turnover intent (Daly & Dee, 2006; Ryan, Healy, & Sullivan, 2012).

PA faculty are predominantly Caucasian and female. It is not known if these factors influence intent to leave among PA faculty.

Human Capital.

Human capital represents those personal characteristics of the faculty member, such as highest degree held, faculty rank, years in current position, for example) which characterize the member's position in the institution relative to potential or perceived economic benefit, status, or opportunity for advancement or reward (Perna, 2005; Porter & Toutkoushian, 2006; Umbach, 2007).

The items comprising the variable *human capital* are PA faculty role, faculty rank, tenure status, years as a PA educator, years in current position, and highest academic degree held.

Faculty positions in PA education programs are traditionally classified according to function. For positions staffed by PAs, customary positions are Program Director and Associate Program Director, Academic Coordinator (primarily responsible for curriculum in the pre-clinical year) and Clinical Coordinator (primarily responsible for coordination of clinical year activities, when students are in clinical clerkships). Additionally some programs have generalist faculty positions. The workload and stresses and rewards of each position are unique to the role and each may influence turnover intention differently.

Previous faculty research has established the effects of faculty rank (Johnsrud & Rosser, 2002) and tenure status (Rosser, 2004; Zhou & Volkwein, 2004); and time in current

position or length of service (Rosser & Townsend, 2006); and having a doctoral degree (Zhou & Volkwein, 2004) on turnover intent.

PA faculty generally hold Masters Degrees; availability of tenure and faculty rank are highly variable between institutions (Lane & Scott, 2012). Length of service in current position for PA faculty is approximately 6 years (Lane & Scott, 2012), but data on years as a PA educator is not available.

Organizational factors.

Organizational factors included autonomy, organizational support, distributive justice, role conflict, and workload. Each has been shown in studies of faculty turnover to have a significant impact faculty turnover intention.

Autonomy.

Autonomy is defined as control over what gets done, how it gets done, and when it gets done (Daly & Dee, 2006; Johnsrud & Rosser, 2002; Zhou & Volkwein, 2004). The ability to control one's work life and environment has been correlated with turnover intent, with faculty perceiving a high degree of autonomy as having lower intent to leave, and those with low degree of autonomy having a higher likelihood of leaving (Daly and Dee, 2006). For non-tenured faculty Zhou & Volkwein (2004) demonstrated a strong, direct, negative correlation between satisfaction with autonomy and intent-to leave.

There are no studies of PA faculty perceptions of the importance of autonomy in their work lives, or the influence autonomy (or lack of it) may have on turnover intention. Understanding the influence of autonomy on PA faculty intent-to-leave may have particular implications for faculty development programs at the institutional level.

Organizational Support.

A robust definition of organizational support is provided by Fuller and colleagues (2006). This definition encompasses the employee's perception of the both the organization's interest in the individual as well as the degree to which it values the employee's contributions to the organization. Perceived organizational support has been well studied, particularly in the context of the relationship between organizational support and organizational commitment as has been shown for nursing faculty (Carver, 2008) and in the community college setting (Engel, 2010). Support as it has been studied in faculty turnover literature has been limited to faculty perceptions of resources provided by the institution, such as administrative or technical support, financial support for travel or research (Johnsrud & Rosser, 2002; Rosser, 2004; Rosser, 2005).

Understanding PA faculty perceptions of organizational support and its relationship to intent-to-leave would provide valuable insight which may be useful for shaping institutional policies for faculty retention.

Distributive Justice.

Distributive justice is the perception of the employee that the amount and type of compensation received is fair and equitable in terms of work performed, as well as when considering compensation across equals (Daly & Dee, 2006). A broad perception of fair compensation encompasses perceptions of rewards and recognition, including salary but also departmental and institutional reputation (Barnes et al, 1998). Compensation has been shown to be related to faculty intent to leave (Daly & Dee, 2004; Rosser, 2004; Zhou & Volkwein, 2004).

In a study of PA faculty job satisfaction, Boeve (2007) found significant dissatisfaction among PA faculty with their salary and benefits, but the relationship between compensation and intent-to-leave has not been studied among PA faculty. Perceptions of PA faculty regarding the effect of reward and recognition policies on intent-to-leave have not been studied. Understanding the importance of PA faculty perceptions of reward structures may strengthen institutional faculty retention efforts.

Role conflict.

Role conflict is defined as a conflict between organizational expectations for a particular employee position, and the perceptions or expectations of the individual in the role (Daly & Dee, 2006). Role conflict can create a number of problems for the institution or organization if the employee loses confidence in the organization or becomes disenchanted to the point of searching for a new position. In the context of faculty roles these conflicts may be between expectations for teaching, conducting research, and providing service to the university or community.

For physician assistants in the educational setting, role conflict can assume additional dimensions beyond that of teaching versus research or university service. Some PA educators engage in a degree of clinical work in addition to faculty responsibilities, and the competing demands of patient care and faculty work may increase pressure on the faculty member leading to intent to surrender one of the two positions. There is no research data indicating how this may affect PA educators, but literature from academic medicine suggests that physicians may preferentially choose clinical work to remaining in the academic role

(Lowenstein et al, 2007). The effects of role conflict on PA faculty intent-to-leave may have particular implications for faculty development programs at the institutional level.

Workload.

Faculty workload is the combination of type of work, amount of work, and time-allowed for the faculty member to do work. Workload is a particularly relevant factor affecting faculty career (Barnes, Agogo, & Coombs, 1998). Workload may be perceived as too much work or too many tasks, too much work for the time allotted, requiring work to be done at an unexpectedly fast pace (Daly and Dee, 2006). Faculty workload includes available time for preparation for classes, perception of adequate time available to advise students, time to keep current in field, and impression of overall workload and increasing workload (Zhou & Volkwein, 2004). The specific courses taught, time spent with students, and preparation time also constitute the faculty workload (Rosser, 2004).

For PA educators, workload may be perceived as being expected to teach too many classes; being expected to work clinically as well as in a teaching role which may produce conflicting demands on time available; or being asked to work outside of one's career interest (for example: perform activities normally within the realm of the clinical coordination year, when hired to work in the pre-clinical curriculum context). Understanding the impact of workload on intent-to-leave may assist faculty and administration in structuring the faculty work environment in such a manner as to improve faculty retention.

Environmental factors.

The environmental factors in this study are job opportunities apart from the current position, and family responsibilities.

Job Opportunity.

The opportunity to change jobs depends on perception by the job-seeker that a job may be available, as well as the actual availability of the job (Daly and Dee, 2006). Opportunity may influence intent-to-leave a job for the employee who is not satisfied with a job, but presence of a good opportunity outside of current employment may attract an employee who does not have a particular motivation to leave (Zhou and Volkwein, 2004). In this case the presence of opportunity negatively influences intent-to-stay (Daly and Dee, 2006).

Both internal pressures from a combination of workload stressors or role conflict might influence PA educators in terms of turnover intent. The effect of external opportunities in clinical practice may also be a major influence on PA educator turnover intent. The growing number of PA programs and available faculty positions, as well as leadership positions, suggests that existing PA faculty may be subject to external forces influencing intent-to-leave current position.

The variables studied by Daly and Dee (2006) and Zhou and Volkwein (2004) are of interest in this study of PA faculty; these include the presence of jobs in the immediate geographic area as well as outside of it; factors of the current job market which at the time of writing is favorable to PA faculty who are intent on changing jobs, and the individual perception of commitment to the current employment setting.

Family considerations.

Family responsibilities consist of the variety of situations a faculty member may consider including work opportunities for a spouse and responsibility for the care and well-being of family members, which may influence the intent-to-leave an employment setting.

Studies of the effect of family variables on faculty turnover intent have come to differing conclusions. Zhou and Volkwein (2004) examined influence of family-related variables on intent-to-leave and found no influence. Others have documented the importance of family relationships within a community as having an effect on individual considerations regarding where to live (Mueller, Boer, Price, & Iverson, 1994).

For PA educators, family and social support should be expected to influence how the PA educator feels about a particular employment situation. The influence of family in terms of support and interest in a specific employment setting may influence PA educator decisions about changing jobs.

Significance

Physician Assistant education is in a growth phase marked by increasing demand for clinical providers, resulting in increasing class sizes in existing institutions, and an increasing number of education programs. In order to maintain a consistent high quality of education recruitment and retention of faculty is increasingly important. Although data suggests more PAs are joining faculty than are leaving, the annual turnover rate of approximately 10% per year (Liang, 2010) suggests a significant segment of the PA education workforce changes annually. Currently there is no available data examining the factors which may predict faculty turnover. This study will contribute to the literature regarding faculty intent-to-leave in several ways.

PA faculty occupy a unique role in academic medicine. Accreditation standards mandate that physician assistants occupy key academic roles in the educational program. Traditionally PAs have been trained for a clinical worklife, and may not have terminal

academic degrees considered as essential for academic promotion and tenure. Tension between the demands of academic and clinical life may be different from other academic medical disciplines. There are role differences for PA faculty whose work is primarily in the didactic curriculum of the first year of training as compared to the more administrative and organizational requirements of those PA faculty whose primary role is in coordination of the clinical year of training. Salary and benefits for clinical PAs are generally higher than those for academicians, creating a potential source for extrinsic influence on intention to leave. This study proposes to identify such factors (demographic, human capital, organizational, and environmental) and as such will expand our knowledge of specific influences on faculty-intent to leave in PA education. Such information may suggest interesting research questions for other allied health professions educators whose faculty work lives may be similar.

Recruitment and retention of qualified faculty is important to maintaining a quality educational program. One essential component of recruitment and retention is attention to nurturing a diverse faculty representative of the population of clinical practitioners and the patients they serve. While 56% of PA faculty are women, only 10% of PA faculty are non-white. There is conflicting data on the role of gender and ethnicity in mediating faculty intent-to-leave. This study should identify if gender and ethnicity are important factors in influencing PA faculty turnover intent. This information would be useful for PA education administrators, as well as college and university administrators sponsoring PA programs, in order to strengthen efforts to recruit and retain a diverse faculty.

This study extends the literature on faculty turnover intention by introducing a new variable, *human capital*. The influence of such elements as time in career, faculty rank, and

highest degree held has been linked to turnover intention, when studied as control variables. Particularly in the higher education literature regarding gender and ethnic faculty worklife, *human capital* has been shown to be an important variable for study. No study of PA faculty worklife has considered the importance of faculty-specific measures of human capital.

The literature on PA faculty worklife is largely descriptive in nature. Few studies employ analytic measures beyond descriptive statistics and bivariate correlations. This study proposes to explain the predictive value of variables (human capital, organizational elements of work autonomy, role conflict, organizational support, distributive justice, and workload, as well as the environmental influence of external job offers and kinship responsibilities) using multiple regression analysis, which may demonstrate the relative weights of importance of these variables on turnover intent.

Understanding the perceptions of PA faculty regarding their turnover intention and factors predicting turnover intention should inform academic decision making and policy formation regarding PA faculty development and retention. The *human capital* variables studied here may confirm for academic administrators the importance of clearly defined promotion and retention policies; an understanding of which organizational factors influence turnover intent should allow faculty and academic administrators to better design workforce and worklife environments. The influence of external elements on faculty turnover intent should shape recruitment and retention policies.

This study will address specifically the question of factors predicting PA faculty intent-to-leave. The results will not be generalizable to non-PA faculty in regard to intent-to-leave. The addition of a body of data on this specific population may, however, raise

questions which may stimulate additional research on faculty turnover intention in other disciplines, particularly those of a clinical nature. Further, the study may raise additional questions regarding the utility of the conceptual model in studying faculty intent-to-leave.

Chapter Summary

Faculty intent-to-leave has been found to be a predictor of actual faculty turnover. Faced with a growing demand for physician assistants, there is a growing need for experienced PA faculty who remain in their positions. PA faculty turnover is fairly consistently 10% per year. There is abundant research available addressing faculty intent-to-leave, but no studies have been identified which address the question of predictors of faculty intent-to-leave in the PA educator population. This study utilizes a conceptual framework to identify demographic, human factor, organizational, and environmental factors which may influence PA faculty intent-to-leave. It is hoped that the data derived from this study extends the body of research on faculty intent-to-leave; and as well, offers PA faculty and administration information that will inform recruitment and retention of a diverse PA faculty.

Definitions

Academic Coordinator: A term used in PA education to denote a PA faculty member whose primary responsibility is coordinating and teaching in the academic or didactic phase of PA education.

Accreditation Review Commission on Education for the Physician Assistant (ARC-PA): The national accrediting body for physician assistant education programs.

American Academy of Physician Assistants: A national professional association representing physician assistants.

Clinical Coordinator: A term used in PA education to denote a PA faculty member whose primary responsibility is to coordinate the clinical phase of PA education.

Generalist Faculty Member: A PA or other member of the health-care team who may teach, precept, or mentor PA students.

Intent-to-leave: a worker's intention (faculty member) to end employment in a particular position or organization.

PA: See "Physician Assistant", below.

PA Program: An accredited educational program for training in an accredited sponsoring institution such as a medical school, college or university, or health system

PA Program curriculum: PA curricula are generally approximately 24 months in length, divided into an academic or didactic phase where students are engaged in classroom and other learning experiences; and a clinical phase during which students practice under the supervision of preceptors in a series of clinical "rotations" or clerkships.

PA Program Director: A faculty member who is charged with full-time administrative responsibility for the conduct of the PA education program at a particular institution.

This faculty member may be a PA or a Doctor of Medicine or a Doctor of Osteopathy.

Physician Assistant (PA): a licensed health-care provider who is educated in a medical model and licensed to practice medicine by individual states or federal agencies.

Physician Assistant Education Association (PAEA): A national organization representing physician assistant educational programs in the United States.

Turnover intention: An alternative term for intent-to-leave (see above).

CHAPTER TWO: REVIEW OF THE LITERATURE

Introduction

The purpose of this chapter is to review the literature regarding faculty intent-to leave, associated relevant faculty worklife considerations, and the PA faculty workforce. PA faculty work may occur in a variety of academic and clinical settings. The majority of PA education programs grant the Master's Degree, with few granting the Baccalaureate, and a very few awarding an Associate Degree or Certificate (Lane & Scott, 2012). The academic setting varies from the academic medical center of a research intensive university to the community college; and faculty appointments are equally as varied when considering rank, tenure status, and the many obligations of faculty life regarding teaching, research, service, and clinical work. A review of the literature on worklife and turnover intent of faculty in these disparate settings is important for understanding turnover intent among PA faculty.

The chapter begins with a review of literature establishing the foundational elements of turnover intention. Subsequent sections of the literature review describe historical and current research of turnover intent among faculty in higher education in general; followed by a review literature of turnover intent among health professions faculty; and, concluded with a review of the literature on physician assistant faculty worklife and employment. There is no literature on PA faculty turnover intention.

Employee turnover is a well studied phenomenon, with a number of reviews of the literature and a meta-analysis, presenting both qualitative and quantitative analyses (Bluedorn, 1982; Cotton & Tuttle, 1996; Mobley et al, 1979; Price, 1977). Employee turnover can be involuntary or voluntary. Turnover may result from employees being dismissed from their

positions or from employees retiring from the organization. Voluntary turnover may be the result of an employee leaving a certain position for another position within the same organization, or the turnover may represent the employee leaving the organization and possibly leaving the occupation or profession.

Employee turnover, whether voluntary or not, has impact on the organization. Turnover is associated with costs for recruitment and training of a replacement, impact on employee morale and job satisfaction, and may also impact customer or client perceptions (Gray, Niehoff, & Miller, 2000). An understanding of factors leading an employee to consider leaving may allow the organization an opportunity to intervene with the employee. In a similar manner, understanding factors which influence an employee to stay should allow the organization an opportunity to enhance retention efforts, thus potentially mitigating the costs associated with employee turnover.

It is not uncommon to find in the research on turnover intent that the terms *intent-to-leave* and *intent-to-stay* are used interchangeably or interchangeably with the term *turnover intention* (Black & Stevens, 1989; Kovner, Brewer, Greene, & Fairchild, 2009; Marchiori & Henkin, 2004). There are differences in the how the terms are interpreted (Cho, Johanson, & Guchait, 2009). Intention to leave is a subjective concept suggesting an employee's desire to leave in a near term (Mobley, Horner, & Hollingsworth, 1978); and intention-to-stay implies a conscious effort on the part of an employee to remain with an organization (Tett & Meyer, 1993). Both intent-to-leave and intent-to-stay are considered excellent predictors of actual turnover (Bluedorn, 1982; Igharia & Greenhaus, 1992; Steele and Ovalle, 1984; Tett & Meyer, 1993).

Turnover Intention - Higher Education Faculty

The study of faculty turnover is not new. In 1917, Hugo Diemer discussed causes of turnover among college faculties, including “insufficient pay, insufficient opportunities for promotion, educational experience answered its purpose, namely that of a stepping stone, artificial atmosphere, and too wide a variety of activities demanded” (Diemer, 1917).

More recently, a robust body of literature has developed on the topic of faculty intent-to-leave and faculty turnover intent. The conceptual frameworks guiding the several studies of faculty turnover intent bring differing foci to the question of what variables should be studied, and how they should be studied. It is common to find that specific variables may be considered as indicators of one domain in one study, and as a different domain in a subsequent study. Thus, discussion across conceptual models is difficult; this review will describe the literature using a combination chronological and thematic approach.

Although there are a few physician assistant education programs housed within community colleges, the vast majority are associated with four year colleges, or academic medical centers and research-extensive universities. Thus, this review summarizes salient data which is useful to inform the current study of faculty intent to leave, with a focus on faculty of colleges and universities, and does not include the study of community college faculty or faculty from elementary or secondary education.

The combination of endogenous, exogenous & job satisfaction dimensions

The conceptual model proposed by Smart (1990) was built on components of employee turnover models from economics, sociology, and psychology, as well as education. Smart synthesized from this literature three major sets of determinants which he classified as

exogenous variables; *work environment* variables; and *job satisfaction* variables. The dependent variable was *intention to leave* current position. The primary purpose of the study was to propose and test a causal model of turnover intention. Smart proposed to go beyond simply demonstrating a relationship between certain variables and turnover; extending the research by providing evidence of causation.

Exogenous variables included both individual and institutional characteristics. Career age was defined as the number of years after receipt of highest academic degree. Gender was female or male. Marital status included respondent status of “not married”, “married, spouse not employed”, “married, and spouse is employed”. Research time was defined as the number of hours devoted to research activities in a week; responses were coded in ten categories from “none” to “21 or more hours”. Teaching time was defined similarly to research time. Organizational decline was a seven-item measure of perceptions of the respondent regarding institutional enrolment changes, financial status changes, institution response to these issues, and likelihood of faculty job loss due to enrolment or financial issues. Campus governance was also a seven-item construct of perceptions of democratic character of the respondent’s department, and institution, faculty involvement and effectiveness in governance, and administrative support for academic freedom.

The variable work environment was comprised of four constructs. Governance participation was a four item measure of participation in department and institutional faculty meetings, and institutional committees and administrative advisory committees. Governance influence measured two items, perceived influence in institutional policies and perceived influence in departmental policies. Research productivity measured total number of

publications in the preceding two years and if respondents were currently engaged in work anticipated to be published. Salary was a fifteen-category range, with all responses standardized to a nine-month academic year equivalent.

Job satisfaction included scales measuring organizational satisfaction, salary satisfaction, and career satisfaction. Organizational satisfaction rated 11 items including respondent overall satisfaction with institution, intellectual environment at the institution, student-to-faculty ratio, faculty salaries, teaching loads, administration, satisfaction with the respondent's department for intellectual environment, personal relations among faculty, and the academic ability of students in the department. Salary satisfaction was a single item measure regarding respondent satisfaction with current salary. Career satisfaction was assessed using a five item scale of overall satisfaction with careers, by measuring enthusiasm for current work; desire to be in a different profession, retrospective regarding choosing the career if starting anew, and the source of stress from the job as well as time constraints on being attentive to work tasks.

The dependent variable in this conceptual model, intention-to-leave, was a single-item regarding immediate intention to accept an academic or non-academic job. The five possible responses were: "would not consider an offer", "would seriously consider an offer", "am actively looking", "am now negotiating", and "have found and accepted one".

The data for this study came from a 1984 Carnegie Foundation for the Advancement of Teaching national survey of faculty. Smart drew from a randomized sample of full time, doctoral-level faculty; having randomly selected institutions prior to selecting faculty (Smart, 1990).

Initial regression analyses were performed which demonstrated that tenure status was significant in its interactions, requiring that separate models for all variables be run according to tenure/non-tenure status. Regression analyses for each group demonstrated direct and indirect causal effects for a number of variables.

For the exogenous variables turnover intention was significantly associated with career age for both tenured and non-tenured faculty; younger faculty were more likely to leave. Gender was significant for tenured men, but not for tenured women. Tenured faculty devoting more time to research were also more likely to leave. Teaching time did not have a significant effect, nor did marital status.

The regression analyses for the work environment measures demonstrated significance in both the tenured and non-tenured faculty regarding perception of influence in campus governance with higher perception of influence associated with lower intention to leave, due to higher organizational and job satisfaction. Research productivity was significant for tenured faculty.

The results for the job satisfaction variables for organizational and career satisfaction were negatively associated for both tenured and non-tenured faculty indicating that higher levels of satisfaction were associated with reduced intention to leave. Salary satisfaction was significant for non-tenured faculty with the negative association indicating higher salaried non-tenured faculty had a reduced intention to leave.

In summary, the causal model developed by Smart (1990) accounted for 13% of the variance of tenured faculty and 14% of the variance of non-tenured faculty intentions to leave their current institution. Regarding direct influence on turnover intention the model is

significant for career age, indicating faculty early in their careers are more likely to leave; tenured men are more likely to leave than tenured women, and that satisfaction with salary is a significant indicator of turnover intent for non-tenured faculty. Additional important findings include the effect of perceived organizational decline and level of campus governance influence turnover intention.

External influences and ease of movement.

Voluntary faculty turnover may result from a number of individual motivations having to do with individual faculty member's perception of factors related to the current employment setting, or factors external to the current work setting. Matier (1990) used the setting of one urban and one rural university to examine the effects of perceived *ease of movement, desirability of movement, inducements and contributions* perceived by the individual to result from the perceived ease and desirability of movement, and the individual decision regarding faculty turnover intent (Matier, 1990).

Perceived *ease of movement* was determined by evaluating personal characteristics, faculty member professional recognition outside of the employing institution, and the faculty member's propensity for seeking other employment. The personal characteristics were: age, length of institutional service, marital status, spouse employment, and dependent financial support. Faculty member professional visibility external to the employing institution was measured by scholarly activity including publishing and presenting, as well as editing, and membership in professional organizations. Propensity to search was measured by previous application attempts, nominations or solicitations, offers tendered, and the transferability of ongoing research (Matier, 1990).

Tenure-track faculty at two research-intensive universities were sampled in the 1987-1988 academic year. One institution was located in a large urban area; the other was remotely located in a rural area. Both universities were undergoing severe budgetary restrictions at the time (Matier, 1990). Individuals holding firm offers of opportunity to leave were identified. Of the 239 faculty identified, 64% responded, completing a written survey and a follow-up personal interview.

Analysis of the results suggests several significant findings; the authors point out that the findings are not generalizable to all faculty due to the unique nature of circumstances at the two institutions. Of faculty having firm offers, approximately a quarter of the faculty at the urban university reported offers that would not require them to move; at the rural institution, all faculty receiving offers would have had to relocate. In both cases salaries offered with new positions represented a substantial increase over current salary. Other offers and inducements to move were cited by faculty at both institutions as considerations in the decision making process (Matier, 1990). Of the responding faculty, 46% indicated they had resigned a current position to accept an offer. An additional 14% secured a leave of absence while considering the offer, and then did not return to the original institution, raising to 60% the rate of faculty turnover in this study. The inducements to leave included salary increases as well as promotions in rank and position (Matier, 1990).

Analysis of ease of movement criteria for both institutions showed high ease of movement indicators for personal characteristics, visibility outside the existing institution, and personal job search likelihood or history. Financial considerations were thought to contribute to perceptions of ease of movement. Perceived desirability of movement was measured

individually by having respondents rank importance of 33 factors; the results were aggregated and reported in rank order of importance. Intangible benefits such as opportunities for research, and relationship or reputation of colleagues rated as important to both those who left a position and those who stayed. Important tangible benefits included salary, additional non-salary benefit package, and income potential. Geographic location was important as an inducement both to leave and to stay depending on the institutional location. Enticements to leave a setting differed from enticements to stay at an institution. Six intangible benefits and one tangible benefit ranked in the top ten factors influencing faculty turnover decision, for both institutions. The intangible benefits were congeniality of associates, rapport with departmental leadership, research opportunities, reputation of department, reputation of institution, and reputation of colleagues. The tangible benefit was cash salary (Matier, 1990).

In summary, the author presents a conceptual framework suggesting that a faculty member's decision to leave an institution is influenced by personal characteristics, and the perceived strengths and weaknesses of inducements inherent in staying when considered with the perceived strengths and weaknesses perceived in the external offer. Using a "push/pull" metaphor, Matier demonstrates that there must be sufficient push to leave an institution and sufficient pull to the new institution, for movement to occur. Insufficient push to leave, in the face of sufficient pull from an offer, and vice-versa, are not as likely to produce movement (Matier, 1990).

Effects of stress.

Barnes, Agogo, & Coombs (1998) tested a model of the relationship of stress as a direct effect, and the moderating effect of personal and environmental characteristics, on faculty intent to leave academia.

The stress variables were reward satisfaction, time commitment, influence of the department and the institution, and student interaction. The personal moderating factor was individual interest in the faculty member's discipline, and the environmental moderator was the faculty member's perception of the institutional sense of community. The effects of academic discipline, faculty member gender, and tenure status were also tested.

Reward satisfaction measured items such as the faculty member's perception of criteria for evaluation, recognition for service, satisfaction with personal salary, a satisfaction with institutional salary levels in general. *Time constraints* included perceptions of insufficient time to attend to work items, work time infringing on personal time, and job factors creating personal stress. *Influence* measured the perception of the faculty member regarding faculty influence in departmental activities such as opinion of the value of department meetings, influence in departmental and institutional decision making, and service on policy, budgetary, of governance committees. *Student interactions* included the faculty member's perception the academic and intellectual preparation and capabilities of students enrolled in the institution (Barnes, Agogo, & Coombs, 1998).

In addition to testing the direct effect of the five stressors on faculty intent to leave academia, the authors studied the effect of personal and environmental moderators on the relationship between stressors and intent to leave. The personal moderator was faculty

member level of interest in the specific academic discipline. This item measured the faculty member's perception of developments in the academic discipline and the faculty member's relative level of interest in those developments. The rationale cited was that level of interest in the discipline would reduce stress leading to intent to leave. A similar relationship was posited for the environmental variable *sense of community* (Barnes, Agogo, & Coombs, 1998). Sense of community measured the faculty member's general feelings about the institution and its intellectual environment, the quality of life, and the perceived sense of community (Barnes, Agogo, & Coombs, 1998).

The dependent variable was faculty intent to leave academia. The measures of intent to leave were: considering a permanent departure, seeking an administrative position outside academia within the next 5 years, considering a different line of work, considering leaving the profession in the next 5 years, wishing one had entered another profession (Barnes, Agogo, & Coombs, 1998).

The authors used a two stage sampling strategy (institutions, then faculty within the institutions), with respondents representing faculty from 306 schools across nine Carnegie classifications. The authors cite a 54.5 response rate of 5450 faculty, but included only 3070 faculty respondents in the final analysis. Respondents were limited to tenure track positions at the rank of Assistant Professor or above, and with no plan to retire within five years of the study (Barnes, Agogo, & Coombs, 1998).

With over 3000 respondents, the authors noted that all effects were significant, and thus emphasized the findings of practical significance (Barnes, Agogo, & Coombs, 1998). Using hierarchical multiple regression analyses, the model explained 23% of the variance in

faculty intent to leave. The most significant stressor was time commitment, contributing 11% of the variance in intent to leave. The interaction of personal and environmental moderators with stressors did not significantly affect the variance. The environmental moderator *sense of community* did have a direct effect on intent to leave. Additional findings included that males and non-tenured faculty were more likely to leave; gender and tenure status were not significant to the model. Discipline classification was weakly associated (Barnes, Agogo, & Coombs, 1998).

To summarize, Barnes and colleagues have developed a causal model in which faculty stress demonstrated direct effect on intent to leave. The most significant stressor was time commitment; although all stressors contributed to the model. Personal and environmental moderators did little to affect the relationship between stress and turnover intent, although sense of community had a direct effect on intent. Worklife and work environment are supported as important variables in turnover studies.

Tenure status.

Differences in tenured and non-tenured faculty intention-to-leave among faculty at research and doctoral institutions was studied by Zhou and Volkwein (2004). The conceptual framework for this study of faculty turnover intention was drawn from existing research in employee turnover, job satisfaction, organizational perspectives, and individual characteristics. The proposed conceptual framework for this study, like that of Smart (1990) and Matier (1990), identified internal and external factors influencing intent-to-leave. In this conceptualization, internal factors included individual and family characteristics, organizational characteristics, and work experience. Each of these categories was viewed as

having an effect on job satisfaction, an additional internal factor. Individual and work characteristics were seen to directly affect intent. Outside or external factors included the external job market, extrinsic rewards, research opportunities, teaching opportunities and family considerations.

One set of internal factors consisted of variables measuring individual and family characteristics. *Gender* was a dichotomous variable. *Ethnicity* was scored as a dichotomous variable (minority/non-minority). *Doctoral degree* was also dichotomous: doctoral degree or master's degree or lower. *Family/Marital status* was comprised of four categories: single with or without dependents and married, with or without dependents. *Family socioeconomic status* was stated as "average household income" but the scale was not identified (Zhou & Volkwein, 2004).

A second set of internal factors was labeled "institutional characteristics". *Institutional type* was a dichotomous variable for public or private. *Institutional size* and *institutional wealth* were numerical values. *Institutional diversity* was a percent of minority enrollment; *unionization* the percent of unionized faculty. *Instructional consolidation* was four-item survey of institutional policies designed to consolidate instruction and decrease faculty size. *Employee benefits* was a three question item of benefits options and degree of subsidization (Zhou & Volkwein, 2004).

The third set of internal factors was *work experiences*. *Academic rank* was a categorical variable of four choices. *Work hours* and *compensation* were either averages or not otherwise specified. *Scholarly productivity* was a five item scale measuring a variety of publication and presentation types. *Funded research* was a two-item scale measuring number

of grants and total funds. *Teaching productivity* was a five-question scale characterizing teaching load by student enrollment, credit hours taught, sections taught, hours per week spent teaching, and total courses taught. *Committee service* was a continuous variable representing the number of committees on which the respondent served. *Seniority* was measured by career age, age, and length of service at the current institution (Zhou & Volkwein, 2004).

Within the conceptual framework described by Zhou and Volkwein (2004), job satisfaction and perceptions of work environment was a construct influenced by the other three constructs. In this model, a number of structural elements measured satisfaction and perception of work environment. Satisfaction with *workload* was a 5 item scale covering items such as time available for preparation for classes, student advisement, overall workload, time to stay current in field, and opinion on workload increase. Satisfaction with *job security* was a two-item scale covering security and advancement statements. Satisfaction with *compensation* was a two item scale for salary and benefits. *Job autonomy* was a three item scale for satisfaction with authority to decide courses taught, course content, and other decisions. Satisfaction with *resources* was a 14-item scale but the items were not identified in the study, and a reliability coefficient was not given. *Campus climate* was a two item scale regarding treatment of women and minorities. *Perceived institutional decline* was a four element question covering perceptions of the institution, quality of research, atmosphere for expression of ideas, and mix of full-time and part-time faculty (Zhou & Volkwein, 2004).

The external variables included identification of academic discipline from a list of ten fields, a five item factor measuring 'rewards' a faculty member might value in seeking another position, the attraction of research opportunities available in an outside situation,

opportunities for teaching in a different institution, and family issues that might influence intent to leave (Zhou & Volkwein, 2004).

The dependent variable, intent-to-leave, was a single item measuring the likelihood of a faculty member accepting a full-time or part-time position in another academic setting or outside of academics within three years (Zhou & Volkwein, 2004).

The authors studied tenured and non-tenured faculty at research institutions using a sample from the 1999 National Study of Postsecondary Faculty. The elements comprising the domains in the internal and external constructs were confirmed by a factor analysis procedure, and structural equation modeling was performed to test the model and confirm the significant effects of variables on intent to leave.

Structural equation modeling demonstrated the significant effects exerted by a number of variables for both tenured faculty and non-tenured faculty. For tenured faculty seniority had significant direct effect on intent to leave and indirect effect through satisfaction with resources. Three elements of the satisfaction domain demonstrated significant impact on turnover intention including compensation, job security and resources. These were negative correlations in that the higher the satisfaction the lower the intention to leave. Higher faculty rank was related to higher intention to stay (Zhou & Volkwein, 2004). Among non-tenured faculty, having a doctoral degree, seniority, and job security are strongly associated with intention to stay. Academic rank among non-tenured faculty is associated with a higher likelihood of leaving, but increased teaching responsibility is associated with a higher likelihood of staying. Satisfaction measures with salary, autonomy and job security also increase likelihood of staying (Zhou & Volkwein, 2004).

In summary, Zhou and Volkwein have proposed a complex conceptual model of internal and external factors which have direct and indirect effects on faculty turnover intention. For both tenured and non-tenured faculty the effects of seniority, compensation, and satisfaction with compensation, job security, and having a doctorate all contribute to faculty turnover intention. Academic rank has differing effects on turnover intention depending on tenure status, with tenured faculty of higher rank more likely to stay, but with untenured faculty of higher rank having higher intention to leave. For tenured faculty workload has strong impact on intention to leave, but for untenured faculty work activities and productivity have more influence.

Worklife and job satisfaction.

The relationship between faculty *worklife*, and *faculty job satisfaction*, and certain individual or demographic factors, as contributors to faculty turnover intention, were the constructs proposed by Rosser (2004) in a national study of faculty, drawn from the 1999 National Study of Postsecondary Faculty. The conceptual model proposed that worklife, satisfaction, and certain demographics directly affected intent to leave, and that demographics and worklife also had indirect effects, through job satisfaction.

Faculty *worklife* was concerned with faculty professional and institutional issues. *Professional development* concerned support for release time, research funding, travel, and sabbaticals. *Committee and service work* evaluated the time spent in committee service including number of times and percent of time spent. *Administrative support* included secretarial support, library support, and teaching or graduate assistants. *Technical support* measured technical, computing, and facilities support (Rosser, 2004).

Two constructs constituted *satisfaction*. One section was concerned with issues of *advising and course workload* including time teaching, time advising, number and content of courses, and overall workload. The second component of construct for satisfaction was *benefits and security* which included salary, job security, benefits, academic rank, decision-making, and leadership, as well as a statement of overall job satisfaction (Rosser, 2004).

The demographic variables studied in this model included gender, ethnicity, faculty rank, and tenure status.

The dependent variable was faculty members' intent to leave. This was operationalized with two sets of questions. The first covered intent to leave career for full-time or part-time employment within 3 years. Leaving the institution for a full-time or part-time position within three years was the second component (Rosser, 2004).

The 1999 National Survey of Postsecondary Faculty dataset was used to gather data regarding faculty from 2-year and 4-year postsecondary institutions.

Rosser used structural equation modeling to test the conceptual model and determine significant variables exerting direct and indirect effects on intent to leave. Tests of model fitness, as reported, indicated a good model fit (Rosser, 2004). The variable constructs *worklife*, *satisfaction*, and *intent to leave* were all significantly measured and defined by SEM, indicating the model was valid.

Significant relationships demonstrated by the model included tenure status which had negative impact on worklife and intent to leave, but a positive impact on satisfaction; rank of assistant professor, which has a negative impact on worklife perception; and female gender, which had a negative impact on satisfaction. Minority status had an impact on turnover

intention. Worklife had a positive impact on satisfaction but not on intent to leave.

Satisfaction had a negative impact on intent to leave.

In summary, Rosser proposed a conceptual model in which demographic variables and the constructs of worklife and job satisfaction had direct and indirect effects on intent to leave. Some demographic effects impacted intent to leave but the majority of significant impact on intent to leave was through worklife perceptions and job satisfaction.

Worklife and morale.

The components which have been studied constituting the construct *faculty worklife* vary. Johnsrud and Heck (1998) examined a model of faculty worklife, identifying professional priorities, institutional support, and quality of life as relevant to faculty worklife. Building on this concept, Johnsrud & Rosser (2002) tested a model of faculty worklife and faculty morale intent to leave, in an attempt to identify important factors influencing faculty intent to leave for individuals and across institutions. At the level of the individual level the analysis included the effect of demographic variables on perceptions of worklife, on morale, and on intent to leave; the effect of perceptions of worklife on morale; and the effect of morale on intent to leave. At the institutional level the analysis examined structural variables effect on perceptions of worklife, faculty morale, and intent to leave; the effect of perceptions of worklife on morale; and the effect of morale on intent to leave.

For analysis of individual variables demographic variables included sex, minority status, faculty rank, faculty classification, appointment period, and years worked on campus. Individual perceptions of faculty worklife were categorized as *professional priorities and rewards, administrative relations and support, and quality of benefits and services*.

Professional priorities included collegial relations, students, rewards and evaluations, and professional worklife, and the quality of benefits and services such as support services and standard of living. *Administrative relations and support* measured perceptions of advocacy for faculty, confidence in leadership, and faculty governance. *Quality of benefits and services* included support services and the standard of living (Johnsrud & Rosser, 2002).

For analysis of individual and institutional variables, faculty morale contained three concepts. *Engagement with work* included enthusiasm for work, intellectual stimulation, sharing a common purpose, and satisfaction with work. *Regard for the institution* comprised perceived extent that the faculty member was valued, scholarship supported, and faculty loyalty to the institution. *Sense of well-being* was a single item assessment of personal morale level (Johnsrud & Rosser, 2002).

Structural variables measured institutional characteristics. These characteristics included amount of resources available to the campus, size of the institution (number of Full-time Equivalents), and community college or four-year institution (Johnsrud & Rosser, 2002).

The dependent variable, intent to leave, was a three-item variable which asked about the faculty member's intent to leave the current position, leave the institution, or leave the profession or career (Johnsrud & Rosser, 2002).

The study population was the faculty of a multi-institution state system in the western United States. The system was comprised of 10 institutions, seven community colleges, with the remaining institutions being 4 year colleges. This was a census survey of all 2932 faculty, with a response rate of 52% (Johnsrud & Rosser, 2002). The authors used structural equation

modeling to test the relationships between the independent and dependent variables for analysis at both the individual and group level.

At the individual level, faculty rank of full professor was associated with a significant negative impact on morale and intent to leave. No other demographic factor had significant impact explaining faculty intent to leave or faculty morale. Positive perceptions of measures of faculty worklife and morale had a direct effect on intent to leave; the effect of worklife having a positive influence and that of morale having a negative influence. This, the authors suggest, indicates that the quality of faculty worklife matters in influencing faculty morale, and that morale affects intent to leave (Johnsrud & Rosser, 2002). At the institutional level, the institutional type does not explain morale or intent to leave (Johnsrud & Rosser, 2002).

In summary, this conceptual model demonstrates that faculty perceptions of quality of worklife affect morale, and that morale level is directly related to faculty intent to leave. These differences occur across institutions (Johnsrud & Rosser, 2002).

Satisfaction in a teaching-focused liberal arts university.

Little research on regarding faculty intent-to-leave has been conducted among faculty at large institutions emphasizing research. Heckert & Farabee (2006) examined the relationship between faculty job satisfaction factors and intent-to-leave among faculty at a mid-sized Midwestern institution which emphasized teaching.

This study was a census of all faculty members conducted in the spring semester of 2000. The survey measured 22 job satisfaction characteristics; intention to leave was measured by a single question regarding intent-to-leave within 12 months. All response items were measured on a 7-point Likert scale. Factor analysis was performed on the 22 items

leading to the identification of four factors: income (satisfaction with base salary, summer salary, opportunities to supplement income, dependents' medical benefits), load (satisfaction with teaching and service load), facilities (satisfaction with technology in classroom, teaching environment, office space), and support (satisfaction with research support, travel support, library resources, computer support). Internal reliability estimates for these factors were *income* $\alpha = .78$, *load* $\alpha = .68$, *facilities* $\alpha = .84$, and *support* $\alpha = .71$ (Hechert & Farabee, 2006).

The response rate was 41%, and the mean turnover intent was low at 2.8 (SD 2.2) on the 7-point scale. Intent-to-leave was not related to personal and demographic characteristics, but was negatively related to years teaching at the institution ($r = -.23$, $p = .03$). Turnover intent was also related to satisfaction with pay, work itself, and load. Using multiple regression analysis, the model accounted for 31.5% of the variance in turnover intentions (Heckert & Farabee, 2006).

Turnover intention among faculty primarily engaged in teaching at a Midwestern, mid-sized, liberal arts institution demonstrated that turnover was low. The study further showed that measures of job satisfaction with income, the work itself, and workload were significant factors in predicting intent-to-leave.

Academic discipline.

Xu (2008) further investigated variations in faculty turnover intent based on classification of academic discipline. To classify the academic disciplines Xu (2008) established a framework based on the work of Biglan (1973) to create eight clusters. These were based on three dimensions: hard/soft, pure/applied, and life/non-life, as described by

Smart and Elton in 1982 (as cited by Xu, 2008). Using data from the 1999 National Study of Post-Secondary Faculty (NSOPF:99), Xu classified the discipline areas as hard/pure/life (HPL), hard/pure/nonlife (HPN), hard/applied/life (HAL), hard/applied/nonlife (HAN), soft/pure/life (SPL), soft/pure/nonlife (SPN), soft/applied/life (SAL), and soft/applied/nonlife (SAN) (Xu, 2008).

The data analyzed from NSOPF:99 were limited to those respondents who were full-time faculty from Research and Doctoral institutions (Xu, 2008).

The dependent variable of interest was the likelihood, within a three year period, of leaving one academic appointment for another academic appointment on nonacademic position.

Five categories of independent variables were identified. *Individual and demographic* characteristics included gender, age, race, and citizenship status. *Job experience* indicators included years in current position, academic rank, and tenure status. *Workload and productivity* measures included hours/week spent in administrative service and in teaching/advising duties, career total publications, and dollar value of research funding. *Work environment* factors included the perception of the respondent regarding the quality of the students encountered, level of enjoyment in student interactions, support for research, faculty autonomy, and satisfaction with salary. *General satisfaction* measures included perceptions of campus culture, opportunity for advancement, job security, governance, and academic freedom (Xu, 2008).

Using hierarchical multiple regression, Xu tested the variables in the model independently for each discipline cluster and for all clusters and all variables. A number of

findings supported Xu's hypothesis that academic discipline should be considered in studies of turnover intent. The proportion of turnover intent predicted by the five independent variables differed across disciplinary clusters (Xu, 2008). The identified independent variables were better at predicting turnover intent among faculty in *hard* disciplines than in the *soft* disciplines (Xu, 2008). Demographic variables contributed to the model in some clusters, while workload and productivity measures did not contribute to any degree in any of the clusters; in all clusters faculty perception of the work environment and reward was significant in predicting turnover intention (Xu, 2008).

In summary, Xu (2008) has provided evidence that personal, institutional, and environmental factors which influence faculty turnover intention differ among the academic disciplines. Future studies of faculty turnover should consider discipline-specific factors as part of study design. Findings may allow more focused and relevant attention within a discipline, to efforts to mitigate discipline-specific turnover, and improve faculty retention.

Organization and environment.

As noted previously, intent to stay is thought by some to be conceptually different from intent to leave, although the terms have been used interchangeably (Cho, Johanson, & Guchait, 2009). Daly and Dee (2004) studied intent to stay among faculty in urban public universities. The urban public university was a unique setting to study faculty turnover intent due to unique circumstances for faculty including the larger population of non-traditional learners including older learners, first-generation students in university and learners new to the English language (Daly & Dee, 2006). The authors postulated that these and other unique

aspects of urban university life might contribute to higher than normal rates of faculty turnover.

The conceptual model that Daly and Dee proposed was grounded in expectancy theory, which postulates that to the degree that expectations employees bring to the workplace are met, employees stay in the workplace (Kim, Price, Mueller, & Watson, 1996). From this background Daly and Dee identified three constructs in which variables of interest fit. Using intent-to-stay as the target, they categorized the predictor variables as structural, external environmental, and psychological. Structure and environment were conceptualized to affect directly turnover intent, and to affect the psychological variables which mediated their effect on intent to stay. The psychological variables also were proposed to affect intent directly. A number of control variables were also thought to act on intent both directly and through the psychological construct. (Daly and Dee, 2004)

The five structural variables were *autonomy*, *communication*, *distributive justice*, *conflict* and *workload*. Nine statements addressed faculty *autonomy* and covered freedom to choose work content and methods, work schedule, evaluation of performance, work goals and objectives. *Communication* was measured by five statements regarding openness of communication: ease and degree of enjoyment in talking to colleagues, open communication at university level, level of understanding during dialogue. *Distributive justice* measured perceived reward in money and recognition for efforts, and level of responsibility. *Role conflict* was measured by perception of conflict in expectations from department chair and from different administrators. Workload was measured by three statements regarding the

amount of work required, the time required to complete work, and the speed with which work had to be done.

The external environmental variables were *job opportunity* and *kinship responsibility*. Six questions comprised this variable, summarizing respondent perception of academic opportunities in the immediate metropolitan area and outside the immediate area; the perceived difficulty of finding a job due to job market or preference to keep current job, and two statements regarding the ease with which the respondent could find academic and non-academic work outside the current institution.

Psychological variables were *job satisfaction* and *organizational commitment*. Four statements made up the *job satisfaction variable*, covering general dissatisfaction with job, boredom with job, level of enjoyment of and enthusiasm for current job.

Organizational commitment was measured by six statements, some positively framed, some negatively framed, regarding the respondent's opinion of the university reputation, attitude toward the university, and concern for the future of the university.

Control variables included demographic information such *gender*, *race*, *marital status*, and professional factors including years at *current institution*, *years in profession*, and *academic rank*.

The dependent variable was intent to stay. This was measured by four statements regarding respondent plan to leave or plan to stay, and respondent reluctance to leave.

The population of interest in this study was faculty of urban public universities. The authors obtained a random sample of 1500 faculty from 15 randomly selected public urban

universities. Response rate was 51% (Daly & Dee, 2004). To study the direct and indirect effects of the variables of interest on intent-to-stay the authors used path analysis.

The model explained 53 % of the variation in faculty intent to stay. Positive correlations were seen with autonomy, communication openness, distributive justice, job satisfaction, and organizational commitment. Negative correlations were seen with role conflict, workload, and job opportunity (Daly & Dee, 2004). The path analysis demonstrated significant direct effects on intent to stay with job satisfaction, organizational commitment, and job opportunity. Indirect effect through satisfaction included autonomy, communication, role conflict and workload. Indirect effects through organizational commitment were from non-white race, autonomy, communication, distributive justice, role conflict, and workload (Daly & Dee, 2004).

To summarize, this conceptual model, derived from concepts of intent-to-stay based on expectancy theory, demonstrates significant relationships between structural, external environmental and psychological variables and faculty intent to stay. As hypothesized, intent to stay was positively affected by autonomy, open communication, a sense of justice in the reward structure. These effects were both direct, and indirect through job satisfaction and organizational commitment. Opportunities outside the current employment setting, perception of unfair workload, and role conflict were associated with decreased intent to stay.

Integrated model of multidimensional factors.

Ryan, Healy, and Sullivan (2012) proposed an integrated model to study multiple dimensions of predictors of intent-to-leave, on two different intent characteristics. This model proposed four dimensions of study: stress, satisfaction, support and fit, and scholarly

productivity. Further, the dependent variable “intent-to-leave” was considered for both intent-to-leave institution, and intent-to-leave academe. The authors used a secondary data set from the 2005 Higher Education Research Institute (HERI) of the University of California – Los Angeles. This particular HERI Faculty Survey was a census of all faculty of a large public Midwestern research university (Ryan, Healy, & Sullivan, 2005, p. 426). The census survey of tenured or tenure-track faculty had a response rate of 37.4% (Ryan, Healy, & Sullivan, 2012).

Control variables included marital/partner status (married or partner, or not), gender, and ethnicity (White/Other), years at institution, rank (Full, Associate, Assistant), Biglan Type discipline typology (Soft/Pure, Hard/Pure, Soft/Applied, Hard/Applied).

The independent variables for this study of intent-to-leave were stress factors, satisfaction factors, support and fit factors, and scholarly productivity factors. The dependent variables were dichotomous (yes/no) outcomes for the statements regarding considering leaving institution for another institution in the last 2 years, and considering leaving Academe in the past 2 years (Ryan, Healy, & Sullivan, 2012).

The stress factor asked the question “How much has this been a source of stress during the past 2 years?” and answers were rated on a 3-point scale (3 = extensive, 2 = some, 1 = none). Exploratory factor analysis (EFA) for the family stress factor showed loadings of .57 to .82 for four components: household responsibilities, child care, children’s problems, and being part of a dual-career couple. Internal consistency was confirmed by an alpha of .69 for this category. Publishing stress included the review/promotion process, research/publishing demands, job security, self-imposed high expectations, and change in work responsibilities.

Factor loadings ranged from .33 to .75; alpha was .64 for publishing. For the work category the internal consistency alpha was .66; with factor loadings ranging from .21 - .77 for working with underprepared students, lack of personal time, teaching load, institutional procedures and “red tape”, faculty meetings, and committee work (Ryan, Healy, & Sullivan, 2012).

Satisfaction factors were measured by responses to the statement “How much have each of the following been a source of satisfaction during the past 2 years?”; the responses were scored on a 4-point scale where 5 = very satisfied, 4 = satisfied, 3 = marginally satisfied, and 2 = not satisfied. EFA suggested three distinct elements, *job* (salary and fringe benefits, opportunity for scholarly pursuit, teaching load, autonomy and independence, overall job satisfaction, opportunity to develop new ideas, and prospects for career advancement); *institution* (quality of students, office/lab space, visibility for jobs at other institutions, relationships with administration, availability of child care, clerical/administrative support), and *faculty* (professional relations with faculty, social relations with faculty, competency of colleagues). The factor loadings for *job* ranged from .60 - .85, for *institution* .48 to .80, and for *faculty* they were .68 - .82; internal consistency was confirmed by alphas ranging from .61 to .87 (Ryan, Healy, & Sullivan, 2012).

The independent variable “Support and Fit” was comprised of two factors. “Support” was measured on a 4-point response scale (4 = agree strongly, 1 = disagree strongly) and consisted of nine items: faculty involvement in decision making, value congruency with institution, faculty/administration relations, rewards for being good teachers, adequate support for faculty development, teaching valued by department, respect for diverse values and

beliefs, faculty respect, and research valued by faculty. Factor loadings ranged from .49 to .73; alpha was .70. “Fit” was measured by responses on a 3-point scale measuring how descriptive a statement was of the responding faculty member (3 = very descriptive and 1 = not descriptive). The statements were “feel good about direction in life”, “feel work adds meaning to your life” and “have alignment between work/personal values”. Factor loadings were .67 to .79 and alpha was .69 (Ryan, Healy, & Sullivan, 2012).

The Scholarly Productivity factor was a categorical variable with categories consisting of a range of numbers (e.g. none = 1, 1-2 = 2, 3-4 = 4, etc.). Respondents scored the following four questions: number of chapters in edited volumes, number of articles in academic/professional journals, number of publications in past 2 years, number books, manuals, monographs. Factor loadings ranged from .58-.81, and the alpha was .76 (Ryan, Healy, & Sullivan, 2012).

The results were presented separately for intent to leave institution and intent to leave Academe. As the dependent variables were dichotomous, logistic regression was used. Factors predicting intent to leave varied depending on the intent to leave institution or Academe, with the exception that Biglan type was significant in both models. For intent to leave the institution the model accounted for 20.7% of the variance in intent to leave. Significant factors included Work Stress, Scholarly Productivity, Biglan Type soft and pure, and Years at Institution. For the intent to leave Academe, the significant factors included Family Stress, Fit, Support, Biglan Type (non-hard, and applied less likely), and Married/Partner Status. The model predicted 35.8% of the variance in intent to leave Academe (Ryan, Healy, & Sullivan, 2012).

Ryan, Healy & Sullivan (2012) have presented a robust multidimensional model for predicting faculty intent to leave, for both institution and Academe. Results for the two dependent variables did vary. Together, the models suggest that elements of work and organizational life such as work stress and scholarly productivity, support and fit, external factors such as family stress, and the demographic factor marital status, all predict for faculty intent to leave.

Summary of Higher Education Faculty Turnover Intention

The literature on faculty intent-to-leave offers insight into faculty turnover intention from a variety of perspectives. The studies present conceptual models of faculty turnover built on individual and demographic factors and measures of faculty worklife, and external environmental influences on turnover intent. These factors were shown to influence faculty turnover intention, with the effects being either direct or mediated through factors such as job satisfaction, stress, and morale (Daly & Dee, 2006; Johnsrud & Heck, 1994; Johnsrud & Rosser, 2002; Smart, 1990; Zhou & Volkwein, 2004). Measures of faculty worklife have included a broad variety of organizational dimensions including worklife factors such as organizational support (administrative and technical), rewards and compensation, professional development, workload (Johnsrud & Heck, 1998; Johnsrud & Rosser, 2002; Rosser, 2004) and the impact of academic discipline on turnover (Xu, 2008). One recent study integrates salient features of previous studies to combine personal, psychological, structural and environmental factors to predict both intent-to-leave institution and intent-to-leave Academe (Ryan, Healy, & Sullivan, 2012).

Personal and demographic factors serve to describe the population of interest. In studies of faculty turnover, common demographic descriptors include age, gender, race/ethnicity, and indicators of academic position: faculty rank, tenure status or seniority, highest degree held, and years at current position. Although not previously tested as an independent variable in the intent-to-leave literature, the indicators of academic position are considered as human capital factors in the higher education literature (Perna, 2005; Porter & Toutkoushian, 2006; Umbach, 2007). Age, gender and ethnicity have been shown to influence intent-to-leave, largely indirectly through other mediating factors such as job satisfaction (Rosser, 2004; Xu, 2008; Zhou & Volkwein, 2004). Measures of human capital including years at current position (Heckert & Farabee, 2006; Ryan, Healy, & Sullivan, 2012), highest degree held (Zhou & Volkwein, 2004), seniority or tenure status (Rosser, 2004; Zhou & Volkwein, 2004), and faculty rank (Johnsrud & Rosser, 2002; Rosser, 2004; Xu, 2008; Zhou & Volkwein, 2004). These demographic and human capital factors are included in this study of PA faculty intent to leave as both descriptors of the population and because characteristics of the population suggest that it is important to understand if they predict for PA faculty intent to leave. PA faculty are primarily women, Caucasian, non-tenured, and not holding a doctorate. In institutions where degree, tenure status, and faculty rank are highly regarded, these factors may impact PA faculty turnover intent.

Organizational factors have been studied from differing perspectives. This makes comparison of results difficult. For example studies of the impact of salary and benefits on intent-to-leave have placed salary and benefits within the framework of satisfaction (Heckert & Farabee, 2006; Ryan, Healy, & Sullivan, 2012); a more global variable such as distributive

justice, which included other rewards and recognition (Daly & Dee, 2006), or may be measured directly (Zhou & Volkwein, 2004). Similarly aspects of workload have been linked to turnover intention either directly (Daly & Dee, 2006) or indirectly through mediators such as stress (Barnes, Agogo & Coombs, 1998; Ryan, Healy, & Sullivan, 2012), job satisfaction (Heckert & Farabee, 2006). Other factors have been drawn from the literature, employing previously validated tools. Daly & Dee (2006), for example, have used the work of Breugh (1985) for the study of autonomy while others used results taken from secondary survey data (Ryan, Healy, & Sullivan, 2012). It is interesting that autonomy in the former study was shown to be related to turnover intent in the first instance; in the second, the variable job dissatisfaction (which included autonomy along with six disparate elements) was significant only for leaving Academe. Variables of interest for this study of PA faculty turnover intent are modeled after Daly & Dee (2006) based on their findings for autonomy, distributive justice, role conflict, and workload; and workload elements from Zhou & Volkwein (2004)

Few studies examine the influence of external environmental factors. Opportunities to leave a position for another position at another institution or for a move to a non-academic job are the two factors well documented in the turnover literature. Both Daly & Dee (2006) and Zhou & Volkwein (2004) demonstrated significant relationships between external opportunities and turnover intention. Daly & Dee (2006) showed a significant relationship for intent-to-stay for respondents with local family ties, as opposed to those with no kinship responsibility. These findings, however, did not include family responsibilities such as pressure to relocate for a spouse having a job offer away from the faculty member's place of work. Job opportunity may exert influence on the PA faculty member from recruitment efforts

of other institutions, given the rapid growth of both the number of programs and the increasing class sizes, which usually mean added faculty members. Further, PA faculty, by virtue of their clinical training and experience, may be candidates for recruitment to high paying clinical jobs in geographic locations that may be attractive for reasons of location, or regulatory climate. Thus it is important to include the study of external influences on PA faculty intent-to-leave.

The review of existing literature regarding faculty turnover intent should include a summary of the methodological considerations of the various studies. In the existing literature the study populations varied, from higher education faculty at a single institution (Johnsrud & Heck, 1998), to multiple institutions in a single university system (Johnsrud & Rosser, 2002), multiple institutions (Barnes, Agogo, & Coombs, 1998; Matier, 1990), and urban public universities (Daly & Dee, 2006). Other researchers relied on data from national surveys of university faculty including a national survey of faculty by the Carnegie Foundation (Smart, 1990) and data from National Surveys of Postsecondary Faculty (Johnsrud & Rosser, 2002; Rosser 2004; Rosser, 2005; Zhou & Volkwein, 2004). None of these studies provided any indication of the inclusion or exclusion of professional or medical education faculty, although it is likely that in some cases graduate faculty may have been surveyed.

Studies of post-secondary faculty intent-to-leave establish the importance of several variables for the study of PA faculty intent-to-leave, but these studies also have limitations. Within the general faculty literature there is not uniform agreement on the influence of demographic factors such as age, gender, ethnicity, or measures of human capital on intent-to-leave. Studies derived from national datasets such as the National Survey of Postsecondary

Faculty have not identified if the faculty studied work in the setting of graduate or professional education. Thus there are significant gaps on the faculty turnover literature. This study contributes to this literature by directly studying a specific faculty population engaged in professional education, and by studying the direct effect of variables of interest to faculty including autonomy, organizational support, role conflict, reward structures, and workload, as well as external job opportunities and family responsibilities and obligations.

Turnover intention among health professions faculty

The literature on health professions faculty worklife and turnover intent is helpful to focusing discussion regarding the study of physician assistant faculty turnover intent. Academic and clinical settings for the training of PAs, medical doctors, nurses, and allied health personnel differ many ways, particularly regarding the type of content taught. Similarities exist, however. Educators in all settings may have multiple roles: educator, clinician, and researcher. Physician assistant education is modeled directly after that of medical schools, although the content and time devoted to teaching are attenuated compared to most physician training programs. PA educational models include didactic and clinical experiential phases, as do medical, nursing, and allied health programs, thus the worklife experiences of faculty in other disciplines may be similar to factors which affect PA faculty. Faculty turnover studies from medicine, nursing, and allied health disciplines are identified in the literature.

Medical faculty

Lowenstein, Fernandez, and Crane (2007) studied the prevalence and predictors of intent to leave academic careers among full-time faculty at a single mid-western School of

Medicine, using a 75 item scale, written by a committee of faculty and administrators. The stated objectives of the study were to measure the proportion of faculty with serious intent to leave academic medicine, and to identify the factors influencing that intent. An additional objective was to measure career progress. Of the surveyed faculty, 38% responded. Of the responding faculty, 42% indicated a serious intent to leave academic medicine within the next five years. The response for the measure of career progress was similar; 40% responded regarding perceived unsatisfactory career progression. Clinical faculty were more likely to report serious intent to leave compared to members of interdepartmental centers. Factors not associated with intent to leave included gender, minority status, faculty role, or highest degree held. A “top-ten” list factors predicting serious intent to leave with two criteria from each of five categories: quality of life, teaching, clinical service, faculty development, and governance. The specific criteria, respectively, were: difficulty balancing family and work responsibilities, lack of sense of academic community; lack of recognition for innovative or high quality teaching, failure to reward teaching excellence; clinical work not recognized for promotion, lack of support for clinical excellence; lack of effective faculty development program, individual academic progress not regularly evaluated; senior administration does not understand demand placed on faculty, no opportunity to evaluate performance of institutional leaders (Lowenstein, Fernandez, & Crane, 2007).

Attitudes of clinical faculty regarding career progress, career success, and commitment to academic medicine was also studied by Buckley and colleagues (Buckley, Sanders, Shih, & Hampton, 2000) at an eastern medical college and associated clinical facility. In this study outcome data was compared between respondents based on the amount of effort spent in

clinical duties, with one group spending $\leq 50\%$ of time in clinical practice and the other group spending more than 50% of their time in clinical practice. The group spending greater than 50% of time in clinical practice reported less time for scholarly activity, less likely to have tenure and promotion criteria discussed during evaluations, valued excellence in patient care over scholarship, and reported greater dissatisfaction with academic medicine and less of a commitment to an academic medicine career than respondents who spent less time in clinical care. Respondents spending a greater amount of time in clinical settings were found to be less likely to hold higher academic rank, and less likely to be tenured. Demographic and personal characteristics of the two groups were similar (Buckley, Sanders, Shih, & Hampton, 2000).

To understand why women faculty and minority faculty leave academic medicine positions, Cropsey and associates (2008) surveyed 160 faculty from an east coast medical school. The authors reported that at the time of leaving their employment, significantly more women left at rank of instructor/assistant professor, and significantly more men left at rank of professor. For minority faculty similar results were reported, with significantly more non-white faculty leaving at the rank of instructor or assistant professor as compared to white faculty. Of the responding faculty, 42.8% left to work in a different academic setting; 31.3% left to work in private practice or a nonteaching hospital, 9% retired, and the others went to other settings, or no response was given. In aggregate, the most three common reasons for leaving were career/professional advancement (29.8% of respondents), low salary (25.5%), and chairman/departmental leadership issues (22.4%). For women the top reasons cited were chairman/departmental issue (30.8%), career/professional advancement (29.8%), and salary (25%) and personal reasons (25%). Whites left for career/professional advancement (29.3%),

low salary (25.2%), and chairman/departmental leadership reasons (21.1%); while nonwhites left because of career/professional advancement (32.4%), low salary (29.4%), and personal reasons (29.4%) (Cropsey, et al, 2008). The authors reasoned that the data suggested that a substantial degree faculty turnover could be ameliorated by attention to faculty development and retention efforts.

Nursing Faculty

As noted above, faculty intent to leave and faculty intent to stay are thought to measure different behavior intentions. An extensive literature search using keywords “nursing faculty” with “turnover intent”, “intent to stay” and “intent to leave” produced a single published study on nursing turnover intent (Garbee & Killacky, 2008). In this study the authors randomly sampled nursing faculty from Southern United States nursing programs in order to determine predictors of nursing faculty intent to stay in nursing education, as well as to document the relationship between intent to stay and job satisfaction. Factors studied included the role of mentoring, the level of organizational commitment of the faculty member, dean leadership behavior; the predictor variables were characterized as demographic, academic, experiential, or attitudinal. This study included qualitative analysis of themes of satisfaction and dissatisfaction. Results included the finding that job satisfaction was positively associated with intent to stay in nursing education for 1 year and intent to stay in nursing education for 5 years. Mentoring relationships were not significantly related to intent to stay. Organizational commitment scores indicated that organizational commitment was a predictor of intent to stay at both one and five years. Leadership behavior was weakly associated with intent to stay. The authors concluded that faculty intrinsic qualities,

organizational fit, and employer attention to extrinsic influences such as work hours, work environment, and leadership style may have impact on nursing faculty intent to stay in nursing education;, and that retention efforts should be geared at faculty between their first and third years of employment (Garbee & Killacky, 2008).

Pharmacy Faculty

The allied health literature includes recently published data regarding faculty intention to stay from the domains of physical therapy education and pharmacy education. Education and training in pharmacy education may occur in a number of sub-disciplines including pharmacy practice, basic pharmaceutical sciences, and/or clinical research (Carter, Nathisuwan, Stoddard, & Munger, 2003). Both pharmacy faculty and physical therapy faculty may engage in teaching, service, research, and clinical practice, as has been described for other health professions educators.

Carter et al (2003) used a database of the American Association of Colleges of Pharmacy to track turnover of faculty from 1996-2001 as reported by 80 Colleges of Pharmacy, comparing pharmacy practice faculty to those faculty teaching in basic pharmacy sciences. Over the five year period, a significantly greater number of pharmacy practice faculty resigned compared to basic science faculty. Within pharmacy practice more women faculty resigned than did men faculty. This trend was also seen in the basic sciences, where significantly more women resigned than did men. In both groups, men were employed in greater numbers of women. These data remained constant for all years of study. The study did not gather data regarding minority faculty, nor did it attempt to determine predictors of turnover intent.

In 2007, Conklin and Desselle undertook a census survey of faculty listed with the American Association of Colleges of Pharmacy in order to determine rates of, and reasons for, pharmacy faculty turnover. The response rate to this web-based survey was 22.7%. Of the respondents, 20.7% indicated a preference to leave the current institution within the next 2 years. Of these, 60% indicated an intention to remain in academia. Reasons cited for intention to stay included autonomy in work, geographic location, benefits, collegial relationships, job security, and institutional reputation. Reasons cited underlying intention to leave were excessive workload, desire to change, poor salary, collegial and leadership relations, geographic location, high stress, and lack of research time. Reasons for leaving previous positions, as cited by the respondents included: a desire of change, poor salary, geographic location, unsolicited job offer, previous position not meeting expectations, lack of research support, and poor collegial relations. Measures of organizational commitment, including leadership support, research support, teaching environment, and membership in a pharmacy practice department were significantly associated with turnover intention (Conklin & Desselle, 2007).

Physical Therapy Faculty

The study of physical therapy faculty turnover (Radtka, 1993) came at a time of a shortage of physical therapy faculty. The purpose of the study was to determine factors predictive of job turnover. Turnover data was examined at the level of the individual faculty member and in aggregate fashion at the level of the academic program. Turnover in each case referred to employment change within a 1 year period at the time of the survey. Despite the fact that the study was published in 1993, the data reviewed was taken from survey of

program directors and program faculty based on a database of the American Physical Therapy Association, said data having been gathered in 1983 and 1984. Findings included a one year faculty turnover rate of 10%; and weak but significant correlations between higher turnover and fewer years of employment, high job stress, low salary, behavioral intentions to leave, and presence of job alternatives (Radtka, 1993). The study suffered from a number of methodological flaws including the time from data acquisition to publication, and discrepancies in the number of respondents in two separate surveys used 12 months apart to gather data.

Summary of Health Professions Faculty Turnover Intention

The literature regarding intent-to-leave among health professions faculty is sparse. Studies of medical school faculty might be informative since the physician assistant educational process is modeled on medical education, and because physician assistant faculty share similar academic and clinical roles. The data from studies of medical education faculty suggests that many medical school faculty are thinking of leaving their academic positions (Lowenstein, 2007); that those faculty with clinical responsibilities feel less well regarded than their strictly academic colleagues (Buckley, Saunders, Shih, Hampton, 2000), and that for women and minority medical school faculty issues of career advancement, and rewards and recognition are significant factors influencing intent-to-leave (Cropsey, Masho, Shiang, Sikka, Kornstein, Hampton, 2008). These studies are significant as PA faculty are trained and work in a medical model similar to that of physicians. The “pull” of clinical opportunities may exist for PA faculty as an external influence on intent-to-leave. The majority of PA faculty are

women, but most PA faculty are Caucasian. Whether issues of faculty rank, rewards and recognition, or faculty status are important for PA faculty have not been established.

Other health professions faculty turnover intentions have been studied, but again there are limited studies available. Organizational commitment has been shown to have an impact on intent-to-stay in nursing (Garbee & Killacky, 2008) and pharmacy (Conklin & Deselle, 2007). Other factors influencing pharmacy faculty turnover have included salary, years of faculty service, and gender (Carter, Nathisuwan, Stoddard, Munger, 2002; Radtka, 1992).

Health professions faculty share a number of commonalities in that most are expected to maintain a balance of academic and clinical responsibilities. The limited data available from the study of medical, nursing, and allied health faculty suggest that concerns including features of organizational commitment and role conflict, distributive justice (including salary and benefits and rewards and recognition), and demographic factors such as gender and ethnicity, have an influence on health professions faculty intent-to-leave or intent-to-stay. Whether these factors also may influence PA faculty turnover intention is not known.

Medical education faculty worklife is unique in many respects, particularly given the dual role most faculty play, and the unique aspects of a combination of worklife elements. It is important to understand if factors such as organizational support, distributive justice, and demographics have direct effects on PA faculty intent-to-leave, as answers to these questions should reveal strategies for improving faculty development, and retention.

Physician Assistant Faculty

The physician assistant education literature contains a number of studies of PA educator roles and attitudes toward a number of workforce and worklife issues, but none

directly examine PA educator turnover intent. The Physician Assistant Education Association conducts an annual survey of member programs which gathers information regarding a number of aspects of programmatic and administrative elements regarding faculty, including age, gender, job role, faculty rank, salary, and number faculty in each educational program. From this data aggregate turnover rates can be estimated. No other studies of PA faculty turnover rates have been identified.

There are no studies of PA faculty intent-to-leave in the literature. The only source for PA faculty turnover data is the PAEA Annual Report in which estimates have averaged around 10% a year, with the most recent report citing a turnover rate of 9% (Liang, 2010). Data is provided from PAEA regarding information regarding why PA faculty leave positions. Furthermore this turnover rate reflects all turnover, voluntary and involuntary. Hooker and Cawley (2003) and Cawley (2007) suggest that there are a variety of reasons are given for faculty terminating employment, including job dissatisfaction, career changes including return to clinical practice or promotion from current faculty position, and changing geographic location.

As noted previously, there is extensive literature describing the relationship between job satisfaction and turnover intent (Hagedorn 2000; Mobley, Griffeth, Hand, & Meglino 1979; Porter and Steers 1973; Rosser & Townsend 2004; Smart 1990). The physician assistant literature regarding job satisfaction is limited. Forister & Blessing (2007) reported levels of burnout among PA educators, using the Maslach Burnout Inventory-Educators Survey to study PA faculty members. PA faculty scores were below or equal to norms reported for medicine and post-secondary education; 22% of respondents scored high for

emotional exhaustion, 13% indicated lack of personal satisfaction, and 6% scored high in depersonalization of students (Forister and Blessing, 2007). This study did not attempt to correlate job satisfaction or burnout to turnover intent. Job satisfaction of PA faculty holding the role of clinical coordinator was reported by Snyder and colleagues (2010) in a larger study of the physician assistant education experiential (clinical) year. Overall satisfaction was high, but job satisfaction was not linked to turnover intent.

Wallace Boeve (2007) also studied job satisfaction factors among physician assistant faculty. In an unpublished dissertation he reported a 45% response rate from a survey of 1156 PA faculty. Boeve based his research on the two-factor theory of intrinsic and extrinsic factors proposed by Herzberg (1966), and used the Job Description Index (JDI) of Smith, Kendall, & Hulin (1969) to determine differences in specific JDI variables and overall PA faculty satisfaction; to identify differences between intrinsic and extrinsic factors and overall satisfaction; and to determine if personal and professional characteristics, intrinsic, and/or extrinsic factors predicted overall satisfaction. The JDI factors were found to correlate with overall satisfaction. Intrinsic and extrinsic factors both correlated with overall satisfaction. A linear regression analysis of all factors and JDI job satisfaction factors on the dependent variable job satisfaction showed that 49% of the variance of overall satisfaction was accounted for by years in PA education, PA education work, advancement opportunities, supervisor support, and coworker relations (Boeve, 2007, p. 71). Factors such as time in career, career opportunities, and supervisor and coworker relationships have been linked to turnover intention, but Boeve did not examine turnover intent in this study.

Using a literature review methodology Reed (2006) summarized higher education literature regarding job satisfaction and faculty retention. Her stated purpose was to identify factors which might be applicable to PA education, and thus provide a framework for improving PA faculty retention. Personal or internal variables of importance included achievement, recognition, responsibility, opportunity for advancement, and regard for the work performed; environmental or extrinsic variables included support, institutional climate, and collegial relationships. Reed (2006) also specifically identified job satisfaction issues important in consideration of women faculty and faculty from underrepresented minorities. Reed concluded that findings from higher education research on faculty job satisfaction suggested many avenues for programmatic improvement and research regarding PA faculty job satisfaction, faculty development initiatives, and strengthened retention policies but in this discussion there was no specific attention given to research regarding the causes of faculty turnover (Reed, 2006).

The majority of studies addressing physician assistant faculty worklife measure in some form or manner the issue of scholarly productivity in the form of scholarly publication. Areas of study included publication history of doctorally-prepared PA faculty (Orcutt & Gosdin, 2005), opinions of PA program directors toward the importance of faculty participation in research and publication (Hegmann & Dehn, 2006), a benchmark of PA faculty scholarship activities (Hegmann, 2008), and a surveys of physician assistant faculty publishing patterns (Coniglio & Colletti, 2006; Hegmann, 2002; Jones, Cawley, & Capozzi, 1997).

In the last decade, the number of PA programs has grown, and the number of PA programs granting the Master's Degree as a terminal degree, has also increased (PAEA, 2009). Concomitantly there has been an increase in the number of doctorally-prepared physician assistant faculty. Orcutt and Gosdin (2005) published an analysis of the peer-review publication history of doctorally-prepared faculty listed in a directory of faculty maintained by the Association of Physician Assistant Programs (now the Physician Assistant Education Association) with an interest in respondent degree type, type of degree-granting institution from which the degree was obtained, and the method of degree acquisition. Notable findings were that the majority of respondents reported holding a doctor of philosophy or doctor of education degree, from a doctoral or research-extensive university, with approximately half the respondents having studied as full-time students. Regression analysis of factors on publication history resulted in a model in which number of years since degree awarded and number of publications in first year after degree awarded accounted for 68% of the variance in predicting total number of degrees awarded (Orcutt & Gosdin, 2005). The authors concluded that scholarly productivity of PA faculty prepared at research-extensive universities, who publish in the first year after degree acquisition, are most likely to maintain productive scholarly output. Teaching, university and community service, and scholarly productivity are considered the three core components of faculty life. Scholarly productivity is usually considered to include some component of research and publication of findings in a peer-reviewed venue, usually print media. Academic leadership such as department heads, deans, and program directors, influence the amount of faculty effort allotted to each of the three core areas. With the increase in number of PA programs, and growing number of faculty, Hegmann

and Dehn (2006) undertook a study to document the opinions of PA program directors toward the importance of research and publication by PA faculty. Ninety-three of 130 surveyed program directors responded. The mean percent of effort program directors considered ideal for faculty to engage in research and publication was 15%; however when asked to rank faculty member duties in order of importance the order of importance was (1) teaching, (2) service, (3) clinical practice, (4) research. Other findings included that only 12% of program directors felt that offering research time was extremely or very important as a recruiting tool, and 23% thought allowing more time for these activities was important for retention of faculty. 58.7% of responding program directors believed, however, that research and publication for promotion; and 74.7% of respondents felt that research and publication were important for the profession. Barriers to research and publication were lack of time due to other responsibilities, lack of training in research design, and lack of experience (Hegmann & Dehn, 2006).

There are four studies of PA program faculty which attempt to identify and characterize faculty scholarly activity, particularly scholarly publications. Research designs differed, and strict comparisons between the studies are not possible, but the data are useful for a general understanding of PA faculty scholarly effort over the decade in which the studies were done. In 1997 Jones and colleagues (Jones, Cawley, & Capozzi, 1997) reported on data from a 1993-1994 survey of PA educators in which they noted found that 68.9% of respondents had not published in the past three years. Hegmann surveyed PA faculty in 2002, in a two-part descriptive study of PA program director opinions regarding the importance of faculty research and publication as described previously (Hegmann, 2006), and PA program

faculty regarding 3-year and total publication history and perceived barriers. Results from the faculty survey revealed that 36.2% of respondents had published in peer-reviewed journals in the preceding 3 years, and that 39.6% of respondents had published in any format (journal articles, chapters, textbooks) in their careers (Hegmann, 2002). Coniglio and Colletti performed a descriptive study of PA faculty publishing patterns in 2005-2006 (Coniglio & Colletti, 2006). This study was limited by a poor response rate, with only 22% of surveyed faculty responding. Of those respondents, 53% reported submitting a manuscript for publication within three years of the survey period; of those 53% reporting submission of scholarly work, 92% reported being published. Two-thirds of respondents indicated having submitted material more than once, and 37% reported submitting more than three times. The publication rate was similar for these groups, with 64% of respondents being published more than once and 37% being published more than 3 times in three years. Although 72% of respondents replied that publication was required for promotion or tenure, only 36% indicated receiving institutional support for research and writing. Primary reasons for not producing scholarly activity were lack of time and lack of institutional support (Coniglio & Colletti, 2006). Most recently, Hegmann (2008) studied PA faculty to current PA faculty publication rates, and to compare this data to historical trends. She reported that 73.3% of responding faculty had no peer-reviewed publications over the length of their careers, and that the mean number of publications over a three year period, of those respondents with a history of publication, was 1.0 publications. She concluded that PA faculty scholarly activity, as measured by publication rates, had not changed significantly over a decade, and that faculty

development programs should address this issue if scholarly activity was important to promotion and tenure decisions and career development (Hegmann, 2008).

Physician Assistant faculty workforce characteristics are described in a limited number of descriptive studies focusing on a variety of educational issues such as doctoral preparation (Orcutt, Hildebrand, & Jones, 2006), and employment concerns, such as retirement intentions (Jones, Repka, Draper, & Orcutt, 2006) and perceptions of faculty benefits (Danielson, Simon, Wendell, & Bay, 2007). Additionally the PAEA Annual Report summarizes demographic and personal data from an annual survey of PA Programs (Liang, 2010).

The rapid growth of the number of PA programs in the 1990s and early 21st century, accompanied by the transition to graduate-level of medical education by the majority of PA programs, has led to an increasing attention being paid to the issue of faculty and their adequate preparation for their roles. Faculty participation in institutional governance, eligibility for promotion or tenure, and faculty standing in many institutions are influenced by whether the faculty member holds a relevant, earned, doctoral degree. In 2006, Orcutt and colleagues published findings from a survey of non-doctorally prepared PA faculty to describe their intentions and motivations regarding the pursuit of doctoral education. Of the 400 respondents, 83 indicated being enrolled in a doctoral program, with the majority pursuing either the PhD or the EdD. Requirement of the advanced degree for promotion, and personal motivation to obtain the advanced degree were cited as the principle reasons for undertaking the course of study. Of the 336 faculty not enrolled in doctoral programs, 43% indicated that they were investigating enrolment, but only 6% intending to apply within the proximal 6

month time frame. The authors predicted a trend toward a flattening of the growth curve of doctorally-prepared PA faculty (Orcutt, Hildebrand, & Jones, 2006).

Projecting non-voluntary faculty turnover such as resignations assists in workforce planning. One reason for voluntary faculty turnover may be that faculty may wish to transfer institutions to fill vacancies provided by departing faculty. Additionally, an ability to project turnover, coupled with an understanding of projected program growth, allows for adequate planning for needed increases in the workforce. Jones, Repka, Draper, and Orcutt (2006) surveyed 1030 PA program faculty in 2006 with the intent to determine educator retirement intentions. The response rate to the survey was 43%. Mean age of respondents was 48.1 years. The authors reported findings of interest including that female faculty reporting a desire to retire at an earlier age than male faculty, but more women faculty indicated concern that they would never be financially able to retire. Only 10% of respondents anticipated retiring within 5 years, 19% within 10 years, and 23% within 15 years. Factors important to faculty in retirement planning included anticipated retirement income, health, and availability of health benefits (Jones, Repka, Draper, & Orcutt, 2006).

Benefits of employment are one factor which is important during faculty recruitment, and for retention of faculty once hired. Although faculty salary information is readily available from the Annual Report of the Physician Assistant Education Association (Liang, 2010, for example), there has been only one study of faculty benefits. In 2007, Danielson and colleagues surveyed PA program directors regarding benefits provided to faculty. Greater than 90% of respondents indicated that faculty were granted clinical release time and time away for continuing medical education (CME), but the amount of financial support given for CME

varied widely. Of programs responding, 55% indicated that faculty were given time away for higher education study, while 63% of programs indicated offering tuition reimbursement for pursuit of an advanced degree. Few programs (28%) reported having a policy regarding telecommuting. There was wide variation in programs paying for professional dues and licensure, with 47% of responding programs not paying any professional dues or licensure fees. Over 90% of responding institutions indicated offering retirement plans, health insurance, dental insurance, and life insurance, with fewer institutions offering disability insurance. The authors conclude with the assessment that benefits for PA faculty are favorable, generally, but that careful attention to benefits planning is important for an institution to retain faculty and improve recruitment of new faculty (Danielson, Simon, Wendel, & Bay, 2007).

The Physician Assistant Education Association (PAEA) conducts an annual survey of member programs. This census survey includes a request for information regarding salary and benefits, administrative elements, faculty and student characteristics, etc. The results of the survey are made available to member programs. This survey is sent to member programs where it may be completed by the Program Director or other assigned faculty or staff. The Annual Report current at the time of this study does not report data on faculty turnover, but a previous Annual Report indicated a 9% faculty turnover rate. This report did not differentiate voluntary turnover from involuntary turnover. Individual faculty were not surveyed, therefore individual reasons for turnover were not given (Liang, 2009).

Summary of Studies of Physician Assistant Faculty

Studies of PA faculty are descriptive studies; there are no studies of factors predicting PA turnover intent. PA faculty job satisfaction is generally reported to be high (Boeve, 2007; Forister & Blessing, 2007). A study of PA clinical coordinators, a specific PA faculty role, also demonstrated high job satisfaction (Snyder, 2010). The majority of studies document faculty or administrative perceptions of worklife and workload concerns regarding faculty productivity (Hegmann, 2008; Hegmann & Dehn, 2006); publications history and expectations (Coniglio & Colletti, 2006; Hegmann, 2008). There are a number of studies describing the workforce including doctoral preparation of faculty (Orcutt & Gosdin, 2005; Orcutt, Hildebrand, & Jones, 2006), faculty benefits (Danielson, Simon, Wendel, Bay, 2007). A general overview of the demographics of the PA faculty workforce is published in an annual report by the Physician Assistant Education Association.

The PA faculty workforce is growing in response to an increasing demand for educational programs, and increase in seats available in programs. The demographics of the workforce are well-documented in an annual census report (PAEA, 2009). A growing body of literature describes the population of faculty. There is no literature correlating the attitudes, opinions, and beliefs of the faculty to issues of faculty work, and worklife, including faculty turnover intentions. It is important to understand the beliefs and motivations of the workforce in order to better plan faculty development programs and programs that support and strengthen faculty retention.

Chapter Summary

This chapter reviews the relevant literature which serves as a foundation for the study of faculty turnover intention. Employee turnover intention may be characterized as intent-to-leave or intent-to-stay in a position; the factors leading a faculty member to leave a position, institution, or career, may differ from those which encourage the faculty member to remain in a position. Among voluntary “quits”, intention to leave a position precedes the action of leaving, and this intention to leave is a reliable proxy for actual turnover.

For faculty in general a number of individual, organizational and environmental factors affect turnover intent. These include demographic and personal variables; worklife and work culture influences including issues specific to the academic role, organizational influences, as well as social and institutional support. In the case of clinician-educators the unique demands of the tripartite role of teacher, clinician, and researcher also affect turnover institution. External stress also plays a role and may influence job satisfaction, which may influence turnover intent.

The literature demonstrates considerable variability in the design of conceptual models and frameworks for the study of faculty turnover. The majority of the research interest has focused on faculty of four-year colleges and universities, across academic disciplines. There has been less study of faculty in professional or graduate education settings, including medicine and allied health fields. There is a dearth of literature describing Physician Assistant faculty worklife, job satisfaction, turnover intention, or other features of their faculty role.

CHAPTER THREE: METHODOLOGY

Chapter three describes the methodology used in the study. Following the explanation of the research design, the population of interest is described, sampling method and methods of data collection are outlined. The dependent variable and the independent variables are defined and operationalized. The method of data analysis for the research question is described. The purpose of this study was to identify predictors of intention to leave among physician assistant faculty in physician assistant education programs. Prior to the initiation of the research, the research proposal was submitted to the Institutional Review Board of North Carolina State University, where it was reviewed and accorded Exempt status (Appendix A).

Research Design

The study utilized a non-experimental cross-sectional predictive research design using quantitative analytic methods (Johnson, 2001), gathering data from physician assistant faculty at a single point in time. A quantitative research design is well-suited for drawing inferences from a small sample to the larger population (Cresswell, 2009; Agresti & Findlay, 2009). The specific sampling strategy is described below.

Population and Sample

The population of interest was all physician assistants serving as faculty currently employed full-time in a PA education program in the United States. There are 164 accredited physician assistant programs (ARC-PA, 2012). The standards of accreditation for physician assistant education programs mandate that a minimum of four full-time faculty positions in these programs be filled by physician assistants (ARC-PA, 2012), and that the physician assistant program director be either a physician assistant, physician, or doctor of osteopathic

medicine. The Physician Assistant Education Association, the national association of physician assistant education programs and faculty, maintains a directory of all programs and faculty. The most recent annual report published by the PAEA described a survey response rate from PA programs of 100% (Lane & Scott, 2012) but not all programs completed all items on the survey. The number of faculty accounted for from the 137 programs providing complete faculty data was 1,189 (Lane & Scott, 2012). Of responding programs the average number of faculty per program was 12.9 (Lane & Scott, 2012). If the average number of faculty per program is 12.9, and there are 164 accredited programs, then the population of faculty may be estimated to be just over 2100. This annual census survey further reports that among responding institutions 77.7% of faculty are PAs (Lane & Scott, 2012). From this data it may be derived that approximately 1500 PA program faculty member are PAs. Data is not reported on the number of full-time versus part-time positions.

For this study the database of faculty members maintained by the Physician Assistant Education Association (personal communication, C. Scott, PAEA Data and Research) represented the population of interest ($n = 1500$, see above). The Physician Assistant Education Association maintains a Research Department to conduct and assist in the conduct of research regarding Physician Assistant Education. This research office provided email addresses of 1000 randomly selected members identified in the PAEA database as PAs to be used as the sample for this study (personal communication, C. Scott, PAEA Data and Research).

The use of a randomly selected sample of the population is preferred in order to be able to draw inferences to the general population (Creswell, 2009; Agresti & Findlay, 2009).

O'Rourke, Hatcher, & Stepanski, (2005) suggest a sample size when using multiple regression of approximately 15-30 subjects per independent variable in the model. This study has 8 *demographic* variables, 5 *human capital variables*, 5 *organizational* variables, and 2 *environmental* variables. A preferred sample size for the current study was calculated to be between 300 – 600 subjects. Given the small size of the population, and assuming a 50% response rate, the researcher chose a sample size of 1000.

An initial email letter of invitation to participate in the survey was sent to the randomly selected sample population of physician assistant faculty (Appendix B). The email letter contained a brief description of the intent of the research and invited participation by selecting a hyperlink to the study contained in the email invitation. Every fourteen days over an eight week period, the invitation letter was re-sent as a follow-up request to complete the survey. Of the original 1000 emails sent, 41 were returned as non-deliverable.

Instrumentation

The data for this survey was collected using a self-administered questionnaire. The survey was internet-based. Utilization of internet-based surveys is “respondent-friendly” as it offers the opportunity for rapid completion without paper handling or return mailing; it also offers potential for a high response rate due to ease of use. It is also cost-effective. Internet-based surveys reduce paper use, and as such represent an environmentally friendly method of data collection. Caution must be undertaken with internet-based implementation of the survey in order to guarantee security of the survey-site, to limit access to the desired respondents, and to prevent a respondent from completing the survey more than once.

The survey instrument consisted of several sections. Sections were designed to gather attitudes, opinions, and beliefs regarding the dependent variable of interest (*intent-to-leave*) and the independent variables (*organizational factors* and *environmental factors*). Other sections contained questions related to individual and personal information (the *demographic factors*) and the *human capital factors*.

The survey instrument consisted of survey scales which have been previously described in the literature, and well as scales that have been developed specifically for this study. The following paragraphs describe the variables of interest, the applicable survey scales, and the validity and reliability of each scale. Appendix C contains the survey instrument.

Study Variables

Dependent Variable

The dependent variable was *intent-to-leave*. *Intent-to-leave* measured the faculty member's intent to leave current position. The variable consisted of four questions derived from the work of Daly & Dee (2006): "I plan to leave this program as soon as possible", "Under no circumstances will I voluntarily leave this program before retirement", "I would be reluctant to stay in this program", and "I plan to stay in this program as long as possible". The wording of questions was changed slightly to reflect PA faculty employment (i.e. substitution of the word "program" for the word "university"). Responses were recorded on a Likert-like scale ranging from 7 = *strongly agree* to 1 = *strongly disagree*, with 4 representing a neutral position. Two statements were reverse coded. Scores were summed for a total *intent-to-leave score*; the total range of scores for *intent-to-leave* is 4 – 28. A stronger intent-to-leave is

indicated by a higher score; low intent to leave is indicated by a lower score. The intent-to-leave variable is summarized in Table 1.

Table 1 *Description of the questions that constitute the dependent variable*

-
1. I plan to leave this program as soon as possible.
 2. Under no circumstances will I voluntarily leave this program before retirement. (R)
 3. I would be reluctant to stay in this program.
 4. I plan to stay in this program as long as possible. (R)
-

Note. Likert scale scoring: 1 = strongly disagree, 2 = moderately disagree, 3 = slightly disagree, 4 = neither disagree nor agree, 5 = slightly agree, 6 = moderately agree, 7 = strongly agree.
(R) = reverse coded.

Validity and reliability.

Because the validity and reliability of the scale employed in this research has not been established, exploratory factor analysis (EFA) will be performed on this variable. The purpose of factor analysis is to establish factor structure and to provide evidence of construct validity and internal reliability. EFA is used to determine if, and how well, the survey items represent the variable.

Reliability is a measure of the reproducibility of the survey results (Lizwin, 1995). One of the outputs of factor analysis will be reliability coefficients for each item in the factor analysis

Independent Variables

The independent variables for this study were demographic factors, human capital factors, organizational factors, and environmental factors.

Demographic factors included age, gender, race, marital status, number of dependent children, employment status (full-time or part-time), and actual hours worked per week.

Human capital factors were PA faculty role, faculty rank, tenure status, years as PA educator, years in current position, and highest degree held.

The variable *Organizational* factors included autonomy, organizational support, distributive justice, role conflict, and workload.

The variable *Environmental* factors included job opportunity and family considerations.

Table 2 summarizes the independent variables in this study, and a description of the operationalization of each.

Table 2 *Description of the independent variables*

Variable	Item	Definition	Measure
Demographic	Age	Self-reported age	Years
	Gender	Self-reported gender	1 = F 2 = M
	Race	Self-reported Race/ethnicity	1 = Caucasian 2 = African-American 3 = Asian-American 4 = Hispanic 5 = Native American 6 = Other (specify)
	Marital Status	Self-reported marital status	1 = Single 2 = Married/Partnered 3 = Separated/Divorced/ Widowed 4 = Other (specify)

Table 2 Continued

Variable	Item	Definition	Measure
Human Capital	Dependent children	Self-reported number of children under 18 years of age	Number
	Employment Status	Self-reported full-time or part-time employment	1 = Full-time 2 = Part-time
	Hours	Self-reported hours worked per week	Hours
	PA Faculty Role	Self-reported faculty role, using conventional PA faculty descriptors	1 = Program Director/Chair/Dean 2 = Associate Director 3 = Academic Coordinator 4 = Clinical Coordinator 5 = General Faculty 6 = Other (specify)
	Faculty Rank	Self-reported faculty rank	1 = Professor 2 = Associate Professor 3 = Assistant Professor 4 = Instructor 5 = Clinical Associate 6 = Other (specify)
	Tenure Status	Self-reported tenure status	1 = Tenured 2 = On tenure track, not yet tenured 3 = Not on tenure track 4 = Other (specify)
	Highest Degree held	Self-reported highest academic degree held	1 = Doctorate 2 = Masters 3 = Baccalaureate 4 = Associates 5 = Other (specify)
	Years PA educator	Self-reported total years as a PA educator	Years
Organizational	Years in current position	Self-reported total years in current position	Years
	Autonomy	9 questions regarding job autonomy	Likert-scale scoring 1 = strongly disagree – 7 = strongly agree

Table 2 Continued

Variable	Item	Definition	Measure
	Organizational support	8 questions regarding organizational support	Likert-scale scoring 1 = strongly disagree – 7 = strongly agree
	Distributive Justice	5 questions regarding salary and benefits, rewards, recognition	Likert-scale scoring 1 = strongly disagree – 7 = strongly agree
	Role conflict	8 questions regarding conflict in faculty and clinical roles	Likert-scale scoring 1 = strongly disagree– 7 = strongly agree
	Workload	5 questions regarding perceived workload	Likert-scale scoring 1 = strongly disagree– 7 = strongly agree
	Job opportunity	6 questions regarding job opportunities outside the current institution	Likert-scale scoring 1 = strongly disagree – 7 = strongly agree
Environmental	Family Considerations	4 questions regarding family concerns	Likert-scale scoring 1 = strongly disagree – 7 = strongly agree

Demographic Variables

The variable *demographics* was comprised of data which was useful to describe the population of interest. This information includes *age, gender, race, marital status, number of dependent children, employment status, and actual hours worked*. Age, number of dependent children, and actual hours worked were continuous variables. Gender, race, marital status, and employment status were categorical variables.

Validity and reliability.

Demographic items do not require tests of validity and reliability since they do not represent ambiguous attitudes, opinions, or beliefs, rendering them less likely to be misinterpreted.

Human Capital Variables

The variable *human capital* was comprised of data describing attributes of the faculty member. This is a researcher designed variable. This variable includes *PA faculty role, faculty rank (professor associate professor, assistant professor, instructor, clinical associate, other), tenure status (tenured, on tenure track, not on tenure track, other), years as a PA educator, years in current faculty position, and highest degree held (doctorate, masters, baccalaureate, associates, other)*. Years as a PA educator, and years in current position were continuous variables. PA faculty role, faculty rank, tenure status, and highest degree held were categorical variables.

Validity and reliability.

The items of interest in the variable *Human Capital* are categorical in nature. Tests of validity and reliability are not required of such items since they do not represent ambiguous attitudes, opinions, or beliefs, rendering them less likely to be misinterpreted.

Organizational Variables

The variables of interest in this study are: autonomy, organizational support, distributive justice, role conflict, and workload.

Autonomy.

Autonomy concerns the ability of the faculty member to control work content and methods of work performance. In this study autonomy was measured utilizing nine questions regarding various aspects of control over worklife, conceptualized by Daly & Dee (2006) as a single factor. Responses to the questions were scored on a 7-point Likert-scale where 1 = strongly disagree, and 7 = strongly agree. Scores for the scale were summed; high scores on this scale represent greater autonomy and lower scores indicate less job autonomy. Lower scores were thought to be associated with higher intent-to-leave.

Validity and reliability.

Daly and Dee (2006) do not provide evidence for the validity of this scale. Because the validity of the scale employed in this research has not been established, exploratory factor analysis (EFA) will be performed on this variable. The purpose of factor analysis is to establish factor structure and to provide evidence of construct validity and internal reliability. EFA is used to determine if, and how well, the survey items represent the variable *autonomy*.

Daly and Dee (2006) reported a reliability coefficient of .84 for this scale in their study of faculty intent-to-stay.

Organizational support.

Faculty perception of organizational support was measured using a short form of the Survey of Perceived Organizational Support (SPOS-8) designed to measure an employee's perception of the employer's commitment to the employee. SPOS-8 consists of eight questions in 2 factors; one factor comprises 5 questions regarding valuation of the employee's

contributions, and three questions regarding organization caring about the employee's well-being (Eisenberger, Huntington, Hutchison, & Sowa, 1986).

In this study the SPOS-8 utilized a 7-point Likert-scale (1=strongly disagree and 7=strongly agree). Some questions were reverse coded. Scores were summed; high scores on this scale indicate a higher degree of perceived organizational support. Lower scores were thought to be associated with higher intent-to-leave.

Validity and reliability.

Validity of the SPOS-8 was demonstrated by Lynch, Eisenberger, and Armeli (1999) in a study of employees in a variety of organizations with a principal components analysis and confirmatory factor analysis of the 8-item scale demonstrating factor loadings of .64 to .85 (Lynch, Eisenberger, & Armeli, 1999).

In the same study, the authors demonstrated reliability estimates for the SPOS-8 with Chronbach's alpha of .89 - .90 (Lynch, Eisenberger, & Armeli, 1999).

Distributive justice.

Distributive justice measured the respondent's self-reported attitude and perception of rewards given by the employer in exchange for work performed. Daly & Dee (2006) employed this scale as a five item scale measuring one construct. This five item scale measures the employee agreement with questions regarding reward for effort, reward based on responsibilities, reward based on level of expertise and experience, clear expectations for promotion, and equity of salary and benefits compared to other employees in the institution. This is a five item scale that utilizes a 7-point Likert-scale to score responses to the questions. The scores ranged from 1 = *strongly disagree* to 7 = *strongly agree*. The scores from this

scale were summed; higher scores indicate positive perceptions regarding distributive justice; lower scores indicating poor perception of distributive justice were thought to be associated with higher intent-to-leave.

Validity and reliability.

Daly and Dee (2006) do not provide evidence for the validity of this scale. Because the validity of the scale employed in this research has not been established, exploratory factor analysis (EFA) will be performed on this variable. The purpose of factor analysis is to establish factor structure and to provide evidence of construct validity and internal reliability. EFA is used to determine if, and how well, the survey items represent the variable *distributive justice*.

Daly and Dee (2006) reported a reliability coefficient of .87 for this scale in their study of faculty intent-to-stay.

Role conflict.

The role conflict scale utilized in this study is taken from the Role Ambiguity and Conflict Questionnaire developed by Rizzo, House, and Lirtzman (1970). The original measured Role Ambiguity and Role Conflict. Gormley (2005), in a study of nursing faculty, and Engel (2010), in a study of community college faculty, have both utilized elements of this questionnaire.

For this study only the Role Conflict questions will be used. This is an eight item scale that utilizes a 7-point Likert-scale to score responses to the statements. The scores ranged from 1 = *strongly disagree* to 7 = *strongly agree*. Scores from this scale were summed; high

scores indicate a higher degree of role conflict, thus, higher scores were thought to be associated with higher intent-to-leave.

Validity and reliability.

Rizzo, House, and Lirtzman (1970) established the validity of the ambiguity and role conflict scales. Their factor analysis demonstrated the two factors accounted for 56% of the variance. Gormley (2005) demonstrated that the two factors accounted for 100% of the variance in role ambiguity and conflict among the nursing faculty studied.

Reliability of the ambiguity and conflict scales has been established. Rizzo, House and Lirtzman (1970) demonstrated alpha coefficients of 0.82 for role conflict; and similarly Gormley (2005) found an alpha coefficient of .83 for role conflict.

Workload.

The variable *workload* is a researcher developed scale. This scale measured the respondent's belief about several aspects of work, including the amount of work required, whether the work load demands exceeded the amount of time allotted, perceptions of support necessary for the work load, the role of scholarly productivity in the PA faculty work load, and the balance between the expectations for teaching, clinical work, and scholarly productivity.

This variable is comprised of five questions operationalized by adding the scores of the response scales. A 7-point Likert-scale was employed to score responses to a five questions. The scores ranged from *1 = strongly disagree* to *7 = strongly agree*. Scores from this scale were summed; higher scores on this scale indicate the faculty member perceives the workload to be appropriate, with adequate time to prepare, meet obligations for service and

faculty productivity, with a reasonable balance in work expectations. Lower scores on this scale were thought to be associated with higher intent-to-leave.

Validity and reliability.

Because the validity and reliability of the scale employed in this research has not been established, exploratory factor analysis (EFA) will be performed on this variable. The purpose of factor analysis is to establish factor structure and to provide evidence of construct validity and internal reliability. EFA is used to determine if, and how well, the survey items represent the variable *workload*.

Reliability is a measure of the reproducibility of the survey results (Lizwin, 1995). One of the outputs of factor analysis will be reliability coefficients for each item in the factor analysis.

Environmental Variables

A number of external environmental factors have been shown to influence faculty turnover intent. In the conceptual model proposed for this study those factors of interest were job opportunity and family considerations.

Job opportunity.

Job opportunity represents the aspects of an external job opportunities that might influence the PA faculty intent to leave a current position. This is a researcher designed scale. The external job opportunity questions are: 1) leaving a current position for a new position which offers a tenure appointment, 2) leaving to accept a position in a PA faculty role (e.g. Director, Academic Coordinator, Clinical Coordinator) different from the current one, 3) external faculty opportunity that offer better salary and benefits, 4) a clinical practice job, 5)

clinical practice in a state with “PA friendly” regulatory climate, 6) external clinical practice opportunity that offered better salary and benefits. Responses were scored using a 7-point Likert-scale. Scores from this scale were summed; high scores on this variable indicate higher likelihood of leaving for external job opportunities.

Validity and reliability.

Because the validity and reliability of the scale employed in this research has not been established, exploratory factor analysis (EFA) will be performed on this variable. The purpose of factor analysis is to establish factor structure and to provide evidence of construct validity and internal reliability. EFA is used to determine if, and how well, the survey items represent the variable *job opportunities*.

Reliability is a measure of the reproducibility of the survey results (Lizwin, 1995). One of the outputs of factor analysis will be reliability coefficients for each item in the factor analysis.

Family considerations.

This is a researcher developed four question scale to determine the influence of family and kinship responsibilities on intent-to-leave. One question measured current faculty job impact on quality of family life. One question measured willingness to relocate to a different geographic location for family or spouse opportunity; the other questions measured faculty perceptions of the importance of geographic location for family quality of life or faculty member interest in a new position. The scores were recorded using a 7-point Likert-scale, ranging from 1 = *strongly disagree* to 7 = *strongly agree*. Scores from this scale were summed; a higher score was thought to be associated with a higher intent-to-leave.

Validity and reliability.

Because the validity and reliability of the scale employed in this research has not been established, exploratory factor analysis (EFA) will be performed on this variable. The purpose of factor analysis is to establish factor structure and to provide evidence of construct validity and internal reliability. EFA is used to determine if, and how well, the survey items represent the variable *family considerations*.

Reliability is a measure of the reproducibility of the survey results (Lizwin, 1995). One of the outputs of factor analysis will be reliability coefficients for each item in the factor analysis.

Analysis

Data analysis was performed using the statistical package SAS 9.3.

Research Question.

What is the predictive ability of demographic factors (age, gender, race, marital status, number of dependent children, employment status, number of hours worked per week), human capital factors (PA faculty role, faculty rank, tenure status, years as a PA educator, years in current position, and highest degree held), organizational factors (autonomy, organizational support, distributive justice, role conflict, workload), and environmental factors (job opportunities, family considerations), on physician assistant faculty intent-to-leave.

Descriptive statistics.

Descriptive statistics were used to describe the population of interest and to summarize respondent characteristics. The use of descriptive statistics also allows the researcher to examine variables for normal distribution and possible skewness.

Factor Analysis.

Factor analysis was used to establish factor structure and to provide evidence of construct validity and internal reliability. Factor analysis measures shared variance among variables (Merttler & Vannatta, 2010). Exploratory factor analysis identifies items believed to represent the variable through several steps, including extraction of variables to identify the amount of variance in each item; determination of how many items to retain based the amount of variance expressed by each item, and identification of items which correlate with each other (Hatcher, 1994).

Correlation.

Following confirmation of the validity and reliability of the variables of interest using EFA, a test of correlation of the variables was performed. This procedure computes correlations between the variables in order to evaluate the relationship between them. This is important for understanding the relationship between the dependent variable (intent-to-leave) and independent variables (human capital, autonomy, organizational support, distributive justice, role conflict, job opportunity, family considerations) as well as the relationship between the independent variables. (O'Rourke, Hatcher, Stepanski, 2005).

Regression analysis.

To answer the research question, multiple regression analysis was used to determine the percent of variance in the dependent variable accounted for by the linear combination of independent variables; which independent variables were significant predictors of intent to leave position; the magnitude of contribution of each significant predictor on intent to leave; and the uniqueness indices of the variables. Multiple regression analysis is appropriate since

there is one dependent variable operationalized as a continuous variable and multiple independent variables measured on interval or ordinal scales (O'Rourke, Hatcher, Stepanski, 2005).

Chapter Summary

The proposed study was a non-experimental cross-sectional, predictive design. The survey tool was Web-based, capturing demographic information and Likert-scale responses to statements surveying the variables of interest. The dependent variable was physician assistant faculty member *intent-to-leave*. The independent variables were divided into four factors: demographic, human capital, organizational, and environmental. The study population comprised PA faculty of current PA education programs. Measurement scales were either previously validated tools, or scales validated by exploratory factor analysis. Descriptive statistics were used to characterize the study population; and inferential statistics using multiple regression were used to describe the significant variables predicting intent-to-leave.

CHAPTER FOUR: RESULTS

Chapter four presents the results of the analysis described in the preceding chapter.

The research question was:

What is the predictive ability of demographic factors (age, gender, race, marital status, number of dependent children, employment status, actual hours worked), human capital factors (PA faculty role, faculty rank, tenure status, years as a PA educator, years in current position, and highest degree held), organizational factors (autonomy, organizational support, distributive justice, role conflict, workload), and environmental factors (job opportunities, family considerations), on physician assistant faculty intent-to-leave the current position?

This chapter is comprised of four main sections. The first section describes the response rate. The second section contains the results of the exploratory factor analysis (EFA) of the independent variables *workload*, *autonomy*, *distributive justice*, *job opportunity*, *family considerations*, and the dependent variable *intent to leave*. The third section presents personal characteristics (age, gender, race, marital status, number of dependent children, employment status, and actual hours worked per week) as well as descriptive information of the respondents which are characterized as *human capital* (PA faculty role, faculty rank, tenure status, years in current position, years as a PA educator, and highest degree held). The final section of this chapter presents the results of the multiple regression analysis of the effect of demographic, human capital, and organizational variables on physician assistant faculty intent to leave the current position.

Response Rate

The study sample consisted of 994 physician assistant faculty. A total of 343 surveys were returned, for a response rate of 34.5%. It is noted that some respondents opted not to answer some survey items. The final number for analysis was 271 (27.3%).

Factor Analysis

The purpose of this study was to identify predictors of intention to leave among physician assistant faculty in physician assistant education programs. The survey instrument utilized multi-item scales to survey respondent attitudes, opinions and beliefs regarding *workload, autonomy, organizational support, distributive justice, role conflict, job opportunity, family considerations, and intent to leave*. Exploratory Factor Analysis (EFA) was used to establish construct validity by identifying the factor structure in the data set (Hatcher, 1994).

EFA was used to identify the underlying factor structure of the latent variables related to *workload, autonomy, organizational support, distributive justice, role conflict, job opportunity, family considerations, and intent to leave*. Refer to Figure 2 for a graphic representation of the variables in the proposed model, noting that the variables included in the EFA are highlighted in bold text.

In this study, the initial extraction of factors was performed using the principal factors method (SAS option *method = prin*). In the principal factors method each extracted factor accounts for a maximum amount of variance not already accounted for by all other factors.

Figure 2. Proposed conceptual model of factors that predict physician assistant faculty intent-to-leave.

*Daly & Dee (2006) †Zhou & Volkwein (2004)

In the next step, prior communality estimates were calculated, using the SAS option *priors=smc*. Communalities refer to the variance in an observed variable accounted for by the common factors; *smc* reports the prior communality estimates as squared multiple correlations; a variable with a high communality estimate is strongly influenced by at least one of the common factors (Hatcher, 1994). Following the initial extraction of the factors, the

EFA provides an option for rotation to a final solution; for this study an oblique rotation (*promax*) was used to account for possible intercorrelation of factors (Hatcher, 1994). The rotated factor pattern produces a matrix of items loading on the selected factors.

The following criteria were used to determine the retention of a factor. Factors were examined for eigenvalues ≥ 1.0 and for the proportion (percent) of variance accounted for by each factor (Hatcher, 1994). Criteria for considering a factor loading to be significant were: 1) an item must have had a factor loading of .40 or greater and, 2) an item could not load on more than one factor with a loading greater than or equal to .40.

Outcome from Factor Analysis

Following the criteria described above, it was determined that there were 6 factors (see Table 3): *organizational support*, *autonomy*, *intent-to-leave*, *workload*, *distributive justice*, and *role conflict*. Eigenvalues for the six factors were all above the minimum criteria of 1.0: *organizational support*, 18.04; *autonomy*, 3.27; *intent-to-leave* 2.58; *workload* 1.83; *distributive justice*, 1.64; and *role conflict*, 1.51. The percent of variance explained by each factor was as follows: *organizational support*, 51%; *autonomy*, 9%; *intent-to-leave* 7%; *workload* 5%; *distributive justice*, 5%; and *role conflict*, 4%. The eigenvalues and proportions of variance are shown in Table 3.

The rotated factor pattern (*promax*) identified the significant items (standardized regression coefficients) loading on each of the six retained factors (Table 3). The rotated factor pattern demonstrated factor loadings above .40 for nine items comprising *autonomy*,

Table 3 Survey items, corresponding factor loadings, and final communality estimates

Code	Factor 1 Organizational Support $\alpha=.94$	Factor 2 Autonomy $\alpha=.92$	Factor 3 Intent to Leave $\alpha=.87$	Factor 4 Workload $\alpha=.92$	Factor 5 Distributive Justice $\alpha=.83$	Factor 6 Role Conflict $\alpha=.81$	h^2
Load1	-.13	.12	-.04	.77	-.03	-.03	.59
Load2	-.05	.06	.04	.90	.01	.09	.75
Load3	.00	.13	.06	.80	.05	.14	.68
Load4	.28	.04	-.05	.35	.08	-.10	.50
Load5	.11	-.03	.02	.75	.01	-.07	.71
Load6	.00	.09	.01	.82	.05	-.01	.78
Auton1	.13	.78	.04	-.08	.05	.01	.67
Auton2	.15	.79	-.02	-.09	.03	.00	.72
Auton3	.09	.77	-.04	-.08	.06	-.02	.67
Auton4	-.09	.69	-.08	.08	.08	-.03	.56
Auton5	-.09	.81	-.07	.04	.01	.07	.62
Auton6	-.12	.79	-.10	.11	.03	.10	.64
Auton7	.10	.46	.12	.15	.04	-.04	.35
Auton8	.04	.58	.08	.16	-.06	-.18	.53
Auton9	.14	.61	.05	.14	-.12	-.12	.59
OrgSup1	.85	.09	.04	-.06	.08	.08	.74
OrgSup2	.58	-.07	-.05	.08	.15	.07	.47
OrgSup3	.75	.05	.01	-.08	.06	-.06	.62
OrgSup4	.84	.05	.05	-.02	-.02	-.04	.66
OrgSup5	.76	.00	.01	.02	.12	-.03	.72
OrgSup6	.84	.04	.01	-.02	-.05	-.07	.73
OrgSup7	.88	-.03	-.02	-.02	.04	.00	.78
OrgSup8	.78	.13	.07	.01	.05	.07	.66
DJ1	.13	-.08	-.04	.33	.54	.05	.66
DJ2	.13	-.10	-.02	.44	.52	.07	.74
DJ3	.12	-.06	-.05	.32	.56	.08	.68
DJ4	.07	.10	.00	-.16	.77	-.10	.66
DJ5	-.02	-.02	.03	-.11	.75	-.12	.58
DJ6	.00	.07	-.04	.18	.52	-.04	.42
DJ7	-.01	.07	-.05	.03	.39	-.06	.23
RolCon1	-.07	-.19	.15	.05	.02	.40	.35
RolCon2	-.13	.02	.17	-.31	.16	.39	.48
RolCon3	-.22	.05	.10	.01	-.02	.46	.40
RolCon4	.13	.00	-.03	.07	-.07	.72	.44
RolCon5	.05	-.10	.00	-.12	-.09	.70	.64
RolCon6	-.05	.03	.01	.07	-.07	.70	.51
RolCon7	-.36	.09	.04	-.36	-.02	.33	.69
RolCon8	-.25	-.05	.02	-.05	-.08	.40	.44
JobOpp1	-.25	-.02	.53	.05	-.15	-.07	.54
JobOpp2	-.13	.16	.63	.04	-.23	.03	.61
JobOpp3	-.06	.09	.60	.01	-.03	.07	.41
JobOpp4	-.03	-.16	.49	-.06	-.06	-.08	.37
JobOpp5	.06	-.13	.56	-.02	-.09	-.02	.38
JobOpp6	.01	-.02	.58	-.07	-.17	-.05	.45
Family1	-.03	.04	.12	-.48	.03	.10	.33
Family2	.15	-.07	.37	-.15	.02	.08	.18
Family3	.12	-.02	.78	.10	.02	.05	.50
Family4	.17	.02	.71	.08	-.06	.12	.45
Intent1	-.37	-.05	.55	-.05	.08	-.04	.64
Intent2	-.28	.04	.36	-.07	.21	.02	.28
Intent3	-.49	-.05	.46	.00	.09	-.07	.62
Intent4	-.33	-.01	.48	-.15	.24	-.06	.48

Note: $N=289$.

Eigenvalue for each factor is 18.04 (factor 1), 3.27 (factor 2), 2.58 (factor 3), 1.83 (factor 4), 1.64 (factor 5), 1.51 (factor 6).

Proportion of variance accounted for by each factor is 51% (factor 1), 9% (factor 2), 7% (factor 3), 5% (factor 4), 5% (factor 5), 4% (factor 6).

and eight items comprising *organizational support*. Following deletion of items which did not meet the loading criterion of 0.40, or loaded on more than one factor, five items were retained that loaded on *distributive justice*, six items that loaded on *role conflict*; and five items that loaded on *workload*. Ten items loaded on the factor *intent to leave*.

The SAS® output for the EFA may be found in Appendix D.

Construct Reliability

To assess the reliability of the identified constructs, Cronbach's coefficient alpha (α) was calculated on the retained factors. Generally, reliability estimates greater than or equal to 0.70 are considered acceptable (Hatcher, 2005). For this study the Cronbach's alpha for each of the variables of interest were all over 0.70 as recommended by Hatcher (2005):

organizational support $\alpha = 0.94$, *autonomy* $\alpha = 0.92$, *workload* $\alpha = 0.94$, *distributive justice* $\alpha = 0.83$, *role conflict* $\alpha = 0.81$, and *intent to leave* $\alpha = 0.89$. Reliability estimates are presented in Table 3.

Revised Model

The exploratory factor analysis demonstrated that in the original model items labeled *job opportunity* and *family considerations* loaded with items measuring the dependent variable (*intent to leave*). Careful review of the specific survey items confirmed that wording of the questions was such that they were consistent with the construct measuring intent to leave, necessitating a revision in this exploratory model. Those items which loaded on *intent to leave* were included in the dependent variable. The revised proposed model of factors predicting intent to leave is presented graphically in Figure 3.

Figure 3: Revised proposed conceptual model of factors that predict physician assistant faculty intent-to-leave.

*Daly & Dee (2006) †Zhou & Volkwein (2004)

A summary of the revised variables, their labels, and how they were coded for analysis is presented in Table 4.

Table 4 *Codebook for Variables*

Variable	Label	Variable description	How measured
Demographic	Age	Age in years	Number
	Gender	Gender	F = 0 M = 1
	Race	Race	Caucasian = 0 Minority = 1
	Marital	Marital Status	Married/Partnered = 0 Not Married/Partnered = 1
	Child	Number of dependent children	Number
	EmpStat	Employment status	Full-time = 0 Part-time = 1
	Hours	Average hours worked per week	Number

Table 4 Continued

Variable	Label	Variable description	How measured
Human Capital	FacRole	PA faculty role	Director/Chair/Dean = 0 Other PA faculty roles = 1
	FacRank	Faculty rank	Asst. Professor & lower = 0 Associate & Professor = 1
	Tenure	Tenure Status	Not tenured/eligible = 0 Tenured/eligible = 1
	Yr_PA_Ed	Years PA educator	Number
	Yr_Curr	Years in current position	Number
	Degree	Highest degree held	Masters & lower = 0 Doctorate = 1
Organizational	Workload	“load1 – load5” (summed questions)	Likert-scale scoring 1 = strongly disagree 7 = strongly agree
	Autonomy	“auton1 – auton9” (summed questions)	Likert scale scoring 1 = strongly disagree - 7 = strongly agree
	Organizational Support	“orgsup1 – orgsup8” (summed questions)	Likert scale scoring 1 = strongly disagree - 7 = strongly agree
	Distributive Justice	“DJ1 – DJ5” (summed questions)	Likert-scale scoring 1 = strongly disagree - 7 = strongly agree
	Role Conflict	“rolcon1- rolcon6” (summed questions)	Likert-scale scoring 1 = strongly disagree – 7 = strongly agree
Intent to Leave	LvIntent	“intent1 – intent10” (summed questions)	Likert Scale Scoring 1 = Strongly Disagree – 7 = Strongly Agree

Respondent Characteristics

Demographic Variables

This profile of the respondents presents demographic characteristics of age, gender, race, marital status, number of dependent children, employment status (full-time or part-time), and average number of hours worked per week. Additional description of the respondents is available from the variable *human capital*. The items comprising this variable were *PA faculty role*, *faculty rank*, *tenure status*, *years PA educator*, *years in current position*, and *highest degree held*. These data are reported as means for interval level variables and as frequencies for categorical level variables.

The mean age of respondents was 47.4 years. This data is presented in Table 5. The mean age of respondents in this survey compared favorably with respondents to the most recently published census data for PA educators; Lane and Scott (2012), reported a mean age of 48.7 years for the reporting period 2009-2010.

The mean number of dependent children of respondents was 1.0. The range was 0 to 5 children. This data is presented in Table 5.

The mean number of hours worked per week was 49.4 hours. The range was 15 to 130 hours, reflecting that both part-time and full-time employment was included. The 130 hours, while seemingly excessive, is within the realm of possibility. This data is presented in Table 5.

Table 5 *Demographic Variables: Means*

Category	N*	Mean	Std Dev	Minimum	Maximum
Age	318	47.4	9.9	28	70
# Dependents	302	1.0	1.2	0	5
Hours worked per week	316	49.4	12.5	15	130

*Not all respondents answered every survey item

Of respondents reporting gender, 213 (62%) were female and 112 (33%) were male. No response was given by 18 (5%) participants. These data are presented graphically in Table 6. The gender distribution in this study varied slightly from that published in the most recent Annual Report of PA faculty, in which Lane and Scott report that 56% of the PA faculty workforce is female. For the regression analysis gender was coded as *Female* = 0 and

Male = 1.

The majority (87%) of respondents were Caucasian which correlates closely with data published in the Annual Report (Lane & Scott, 2012). The distribution of responses is presented in Table 6. While the percent of Caucasian PA faculty in this study correlates closely with the number of Caucasian PA faculty reported by the PAEA, the distribution of minority faculty in this study differs slightly from other published data from the PAEA. For the regression procedure the categories were coded as *Caucasian* = 0, with all other categories being combined as *Minority* and coded = 1.

Table 6 *Demographic Variables: Frequencies*

Variable	Category	Frequency*	Percent
Gender	Female	212	65.5
	Male	112	34.5
Race	African-American	5	1.6
	Asian-American	10	3.1
	Caucasian	278	87.1
	Hispanic	16	5.0
	Native-American	3	1.0
	Other	7	2.2
Marital Status	Married/Partnered	269	83.3
	Other	1	0.3
	Separated/Widowed/Divorced	24	7.4
	Single	29	9.0
Employment Status	Full-time	313	95.4
	Part-time	15	4.6

*Not all respondents answered every survey item

The majority of respondents in this study reported being married or partnered (83.3%). The distribution of responses is presented in Table 6. For the regression procedure the

categories were coded as *Married/partnered* = 0 and all other categories combined as *Not Married/Partnered* and coded = 1.

Of the responding faculty, 95.4% indicated full-time employment, and 4.6% indicated part-time employment. Responses from full-time and part-time faculty were retained for analysis. The employment responses are summarized in Table 6. For the regression procedure this category was coded with *Full-time* = 0 and *Part-time* = 1.

Human Capital Variables

The mean *years as a PA educator* was 8.9. The range was 0 (less than 1 year) to 40 years. This data is presented in Table 7. The mean *years in current position* was 5.1. The range was 0 (less than 1 year) to 38 years. This data is presented in Table 7. The current data from the PAEA Annual Report (Lane & Scott, 2012) for the reporting period 2009-2012 reports that the mean years as a PA educator was 6 years. The mean *years in current position* was 5 years, similar to the 6 years cited in the PAEA Annual Report (Lane & Scott, 2012).

Table 7 *Human Capital Variables: Means*

Category	N*	Mean	Std Dev	Minimum	Maximum
# Years PA Educator	330	8.86	7.37	0	40
# Years in current position	326	5.06	5.11	0	38

*Not all respondents answered every survey item

PA faculty roles are delineated by the primary function served in the role. Administration, coordination of academic responsibilities in the didactic year of the program, and coordination of the clinical or experiential phase of education, or generalist faculty roles have been identified by traditional assigned labels. Of responding faculty, 17.9% indicated

having a Program Director/Chair/Dean appointment; 7.3% an Associate or Assistant Director; 18.18% held a position as Academic Coordinator; 17% held a position as a Clinical Coordinator; and 33% were General Faculty. Additionally, 6.7% indicated “Other” faculty role. These data are presented in Table 8. For the regression procedure the categories were dummy coded with *Director/Chair/Dean* = 0 and *Assistant/Associate Director, Academic Coordinator, Clinical Coordinator, and General Faculty* were combined and coded = 1.

Of the responding faculty, the majority indicated they held the rank of Assistant Professor (53.9%). The next most common rank was Associate Professor (23.3%), followed by Instructor (12.4%), and Professor (5.8%). “Other” and “No Faculty Rank” accounted for 3.3% of the total. These data are presented in Table 8. The current PAEA Annual Report (Lane & Scott, 2012) data regarding Faculty Rank is similar, identifying 47.3% as Assistant Professor, 18.2% as Associate Professor, and 6.5% as Professor. Other categories are designated differently; Lecturer, Instructor, and Other, constitute 27.9% of reported faculty ranks. For the regression procedure the categories were dummy coded, with *Assistant Professor, Instructor, Other, and No Faculty Rank* combined and coded = 0; *Professor and Associate Professor* were combined and coded = 1.

The majority of respondents were not on a tenure track (70.9%); while 26.4% were either tenured or tenure-eligible. Table 8 contains a summary of the tenure status responses. Comparative data from the PAEA Annual Report indicates that in 2009-2010, 29.2% of faculty were tenured or on tenure-track, with 70.8% of faculty not tenured or on tenure-track. For the regression procedure the categories *Not on Tenure Track* and *Other* were combined and coded 0; *Tenured and Tenure-eligible* were combined and were coded 1.

The majority of respondents reported holding either a Master's Degree (74.8%) or a Doctorate (21%). Only 4.2% of respondents reported holding a Baccalaureate or other degree. These data are presented in Table 8. The data from the 2009-2012 Annual Report (Lane & Scott, 2012) differs, indicating that 60.7% of surveyed members held a Master's Degree, with 32% holding a Doctorate, and 7.4% reporting a Baccalaureate or other degree. This difference may represent classification differences in the PAEA database (personal communication, C. Scott, PAEA Data and Research). For the regression procedure the categories *Masters*, *Baccalaureate* and *Other* were combined and were dummy coded as *Not doctorate* = 0 and all other categories combined as *Doctorate*, and coded = 1.

Table 8 *Human Capital Variables: Frequencies*

Variable	Category	Frequency*	Percent
Faculty Role	Academic Coordinator	60	18.2
	Associate/Assistant Director	24	7.3
	Clinical Coordinator	56	17.0
	General Faculty	109	33.0
	Other	22	6.7
	Program Director/Chair/Dean	59	17.9
Faculty Rank	Assistant Professor	178	54.0
	Associate Professor	77	23.3
	Clinical Associate	4	1.2
	Instructor	41	12.4
	No Faculty Rank	5	1.5
	Other	6	1.8
	Professor	19	5.8
Tenure Status	Not on tenure track	231	70.9
	Other	9	2.8
	Tenure-eligible	52	16.0
	Tenured	34	10.4
Highest Degree held	Baccalaureate	11	3.3
	Doctorate	69	21.0
	Masters	246	74.8
	Other	3	0.9

*Not all respondents answered every survey item

Analysis of the Research Question

The revised research question was: what is the predictive ability of demographic factors (age, gender, race, marital status, number of dependent children, employment status, actual hours worked), human capital factors (PA faculty role, faculty rank, tenure status, years as a PA educator, years in current position, and highest degree held), and organizational factors (autonomy, organizational support, distributive justice, role conflict, workload), on physician assistant faculty intent-to-leave the current position?

The dependent variable *intent to leave*, and the scales measuring *workload*, *autonomy*, *organizational support*, *distributive justice*, and *role conflict* were measured using a Likert scale with responses anchored by 1 = strongly disagree and 7 = strongly agree. Table 9 summarizes the mean score for each category.

For the scales *workload*, *autonomy*, *organizational support*, and *distributive justice* a higher score indicate a positive opinion regarding the item (some responses were reverse coded). The dependent variable, *intent to leave*, was scored such that a higher score would indicate a greater likelihood of leaving the current job. Mean scores for *autonomy* (5.22) and *organizational support* (4.86) suggested that PA faculty perceive themselves as having high levels of autonomy and organizational support. Scores for *workload* (3.84), and *distributive justice* (4.32) approximated a neutral position. *Role conflict* was worded such that a higher score would indicate a perception of increasing role conflict which should be associated with a greater intent to leave. The mean score for *role conflict* (3.65) indicated that respondents held a low slightly low perception of role conflict.

Table 9 *Mean Scores of Organizational Variables and Dependent Variable*

Variable	N	Mean	Std Dev	Min	Max
Workload	343	3.84	1.60	1.00	7.00
Autonomy	340	5.22	1.15	1.00	7.00
Organizational Support	338	4.86	1.44	1.00	7.00
Distributive Justice	335	4.32	1.48	1.00	7.00
Role Conflict	334	3.65	1.24	1.00	7.00
Intent to Leave	332	3.06	1.28	1.00	7.00

As seen in Table 9, the mean score for PA faculty intent to leave was 3.06, suggesting that responding PA faculty had a low likelihood of intent to leave. Of the 332 respondents completing the *intent-to-leave* survey scale, 250 (75.3%) indicated disagreement with survey statements indicating intent to leave. An additional 52 (15.7%) respondents expressed a neutral opinion. Of the 30 (9%) respondents indicating intent to leave, 29 indicated *mild* agreement with intent to leave statements and 1 indicated *moderate* agreement with intent to leave. No respondents *strongly agreed* with intent to leave statements. These data are presented in Table 10.

Table 10 *Frequency Distribution of Mean Responses for Intent to Leave*

Response Item	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1 – Strongly Disagree	73	22.0	73	22.0
2 – Moderately Disagree	96	28.9	169	50.9
3 – Mildly Disagree	81	24.4	250	75.3
4 – Neither Disagree nor Agree	52	15.7	302	91.0
5 – Mildly Agree	29	8.7	331	99.7
6 – Moderately Agree	1	0.3	332	100.0
7 – Strongly Agree	0	0.0	-	-

Bivariate Associations

The measures of association between variables in the regression model are described in this section. Such measures of association are important to demonstrate the significance of relationships among the variables; in an ideal model there would be a strong correlation between each independent variable and the dependent variable and weak intercorrelations among the independent variables (O'Rourke, Hatcher, & Stepanski, 1995).

The bivariate associations between the variables in this study of intent to leave are presented in Table 11. Pearson and Spearman correlations were computed as appropriate for the level of the variables.

There were moderate associations between intent to leave (*lvintent*) and the organizational variables of interest (workload, $r = -.41$; autonomy, $r = -0.39$; organizational support, $r = -0.60$; distributive justice, $r = -0.47$; and role conflict, $r = 0.46$). The associations were in the expected direction (negative or positive), reflecting the scoring of the opinion scale for each variable.

Table 11 also demonstrates that moderate intercorrelations exist among independent variables, which is not unusual. In addition to having significant correlation with the dependent variable, the conceptual elements of the construct "organizational factors" (*workload*, *autonomy*, *organizational support*, *distributive justice*, and *role conflict*) are moderately correlated with one another. In this study, workload was correlated with autonomy ($r = .53$, $p \leq 0.0001$), organizational support ($r = .56$, $p \leq 0.0001$), distributive justice ($r = .54$, $p \leq 0.0001$), and role conflict ($r = .37$, $p \leq 0.0001$). In addition to the correlation with workload, autonomy was associated with organizational support ($r = .51$, $p \leq 0.0001$), distributive justice ($r = .39$, $p \leq$

0.0001), and role conflict ($r = -.44, p \leq 0.0001$). Similarly, correlations also existed for organizational support and distributive justice ($r = .58, p \leq 0.0001$), organizational support and role conflict ($r = -.52, p \leq 0.0001$), and distributive justice and role conflict ($r = -.40, p \leq 0.0001$).

Correlations may also be anticipated for related demographic variables (such as might exist for example between marital status and the number of dependent children) or human capital variables (for example a correlation between faculty rank and tenure). In this study correlations are noted among such variables. The correlation between the variables *Yr_PA_Ed* (the number of years as a PA educator) and *Yr_Curr* (the number of years in the current faculty position) is 0.66; a very strong correlation suggesting that the two variables may be measuring the same thing. For this reason, *Yr_PA_Ed* was withdrawn from the model prior to analysis.

In this proposed model a number of independent variables demonstrated slight-to-moderate intercorrelations. To eliminate the possibility of multicollinearity, diagnostics were run.

Multicollinearity

After review of the correlation coefficients the variables were examined for multicollinearity using SAS Collinearity diagnostics. The variables the regression model are expected to have some degree of correlation, but for variables that are too highly correlated it is difficult to determine the effects of each variable on the dependent variable. The presence of too high a correlation between variables is multicollinearity (Allison, 1999).

Table 11 *Bivariate Correlations and Chronbach's alpha Correlation Coefficients for the Regression Model*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. LvIntent	(0.89)																		
2. Workload	-0.41*	(0.94)																	
3. Autonomy	-0.39*	0.53*	(0.92)																
4. OrgSupp	-0.60*	0.56*	0.51*	(0.94)															
5. DistJust	-0.47*	0.54*	0.39*	0.58*	(0.83)														
6. RoleConf	0.46*	-0.37*	-0.44*	-0.52*	-0.40*	(0.81)													
7. Age	-0.07	0.07	0.05	-0.07	0.09	-0.04	--												
8. Gender	-0.06	0.23*	0.06	0.09	0.17**	-0.03	0.23*	--											
9. Race	0.06	-0.08	0.04	0.01	-0.07	-0.02	0.06	0.02	--										
10. Marital	-0.02	0.08	0.04	-0.02	0.03	0.04	0.05	-0.15**	-0.02	--									
11. Child	-0.05	0.04	-0.01	0.09	-0.05	0.01	-0.48*	0.03	-0.07	-0.21**	--								
12. EmpStat	0.09	-0.05	0.05	-0.03	-0.11***	-0.01	-0.09	-0.13***	-0.04	-0.02	-0.03	--							
13. Hours	0.11	-0.23*	-0.16**	-0.17**	-0.14**	0.17**	0.16**	0.01	0.07	0.00	-0.06	-0.39*	--						
14. FacRole	0.09	-0.17**	-0.12***	-0.08	-0.22*	-0.04	-0.18**	-0.23*	0.03	0.06	0.02	0.10	-0.23*	--					
15. FacRank	-0.07	0.13**	0.05	0.01	0.30*	0.04	0.30*	0.18**	-0.03	0.01	-0.12***	-0.12***	0.04	-0.37*	--				
16. Tenure	-0.05	-0.03	-0.01	0.01	0.10	0.04	0.10	0.02	-0.02	0.03	-0.06	-0.13***	0.12***	-0.19**	0.27*	--			
17. Yr_PA-Ed	-0.09	0.15**	0.04	0.00	0.17**	-0.04	0.54*	0.19**	0.06	0.03	-0.25*	-0.09	0.15**	-0.39*	0.45*	0.15**	--		
18. Yr_Curr	0.01	0.00	-0.03	-0.03	0.04	0.02	0.39*	0.08	0.03	0.05	-0.20**	-0.07	0.08	-0.12***	0.27*	0.14***	0.66*	--	
19. Degree	-0.13***	0.18**	0.15**	0.04	0.15**	-0.02	0.33*	0.17**	0.06	0.02	-0.19**	-0.08	0.04	-0.28*	0.41*	0.22*	0.36*	0.22*	

Notes: Chronbach's alpha correlation coefficients are on the diagonal.

Pearson correlation: variables 1, 2, 3, 4, 5, 6, 7, 11, 13, 17, 18; Spearman correlation: variables 8, 9, 10, 12, 14, 15, 16, 19.

* $p \leq 0.0001$, ** $p \leq 0.01$, *** $p \leq 0.05$.

For this study, collinearity diagnostics including variance tolerance estimates and variance inflation factors (VIF) were calculated to evaluate for evidence of multicollinearity. Collinearity statistics are presented in Table 12.

Table 12 *Collinearity diagnostics for regression model*

	Standardized Estimate	Tolerance	Variance Inflation Factor
Workload	-0.02	0.48	2.07
Autonomy	-0.03	0.58	1.72
OrgSupp	-0.41	0.45	2.23
DistJust	-0.09	0.51	1.96
RoleConf	0.15	0.63	1.58
Age	-0.13	0.55	1.82
Gender	0.08	0.81	1.23
Race	0.05	0.96	1.04
Marital	0.00	0.89	1.12
Child	-0.08	0.68	1.46
EmpStat	0.08	0.83	1.21
Hours	0.01	0.73	1.36
Facrole	-0.03	0.75	1.34
Facrank	0.03	0.63	1.58
Tenure	-0.01	0.89	1.12
Yr_Curr	0.05	0.80	1.25
Degree	-0.08	0.68	1.46

A tolerance estimate indicates the variance in an independent variable not accounted for by the other independent variables. Tolerance values range from 0 to 1, with values approaching 1.0, indicating independence between the variables; values below 0.4 indicate

severe multicollinearity (Allison, 1999). This criterion was not reached in this study although variables in this study have tolerance levels near the .40 level (*workload* = .48 and *organizational support* = .45), suggesting near-extreme multicollinearity.

Variance inflation values report the reciprocal of the tolerance (Allison, 1999). VIFs approaching 1 indicate greater independence; VIFs above 2.50 suggest extreme collinearity (Allison, 1999). In this study, VIFs ranged from 1.04 (*race*) to 2.07 (*workload*); the values do not indicate a problem with multicollinearity.

Multiple Regression

Multiple regression is useful to understand the predictive value the independent variable(s) (X) on the dependent variable (Y). The multiple regression equation is expressed as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots \beta_k X_k + \text{error}$$

where α represents the intercept (the point at which the regression line intercepts the y-axis).

This represents the value of Y when the X variables equal zero. Standardized regression coefficients represent the relative contributions of each of the independent variables; such standardization allows for comparison between the variables with different scales (Allison, 1999). Additionally in the multiple regression procedure an unstandardized regression coefficient (b) represent the amount that Y changes when there is a corresponding one unit change in the corresponding X, holding all other variables constant.

Results of the Regression

Multiple regression was run in SAS9.3 using the *proc reg* procedure, regressing intention to leave scores on the linear combination of all predictor variables. Standardized

(B) and unstandardized (b) regression coefficients and standard errors are presented in Table 13. The F statistic for this regression model, 9.86, was significantly different from zero ($F=9.86$, $df=17$, $p < .0001$).

The R^2 in this model was .40, indicating that approximately 40 percent of the variance in intent to leave is explained by the variables in the model. The adjusted R^2 , a more precise measure of the variance accounting for the degrees of freedom, was .36. Thus, the linear combination of independent variables accounted for 36% of the variance in PA faculty intent to leave.

The individual predictor variables that contributed significantly ($p \leq .05$) to the variance in intent to leave were *organizational support*, *role conflict* and *age*. The associations for organizational support, role conflict, and age, were in the expected directions. A positive attitude regarding organizational support was found to correlate with a decreased intent to leave ($B = -0.41$). Higher levels of perceived role conflict were associated with higher intent to leave ($B = 0.16$). There was a negative correlation between age and intent to leave ($B = -0.13$), suggesting that as age increases, intent to leave current position decreases (Table 13).

Among the respondents to the study, attitudes toward autonomy, distributive justice, and workload were not significantly associated with intent to leave, nor were demographic variables other than age and all human capital variables.

Appendix D contains the SAS program and output for the multiple regression procedure.

Table 13 *Multiple Regression of Intent to Leave*

Variable	B	b	SE b	t Value	Pr > t
Workload	-0.02	-0.04	0.12	-0.35	0.73
Autonomy	-0.03	-0.04	0.09	-0.45	0.65
OrgSupp	-0.41	-0.51	0.09	-5.69	<.0001
DistJust	-0.09	-0.18	0.13	-1.36	0.17
RoleConf	0.15	0.29	0.12	2.47	0.01**
Age	-0.13	-0.19	0.09	-1.98	0.05***
Gender	0.08	2.44	1.61	1.51	0.13
Race	0.05	2.19	2.07	1.06	0.29
Marital	0.00	-0.18	1.99	-0.09	0.92
Child	-0.08	-0.96	0.73	-1.32	0.19
EmpStat	0.08	5.64	3.84	1.47	0.14
Hours	0.01	0.01	0.06	0.20	0.84
FacRole	-0.03	-1.01	2.10	-0.48	0.63
FacRank	0.03	0.96	1.88	0.51	0.61
Tenure	-0.01	-0.32	1.64	-0.20	0.84
Yr_Curr	0.05	0.14	0.15	0.89	0.37
Degree	-0.08	-2.79	2.11	-1.32	0.19

Note. $R^2 = .40$ ($F[17, 253] = 9.86$), * $p < .0001$, ** $p \leq .01$, *** $p \leq .05$

Chapter Summary

This study sought to determine whether organizational, human capital, and demographic factors were predictive of physician assistant faculty intent to leave a current faculty position. The proposed model was significant, with an $R^2 = .40$. Of the organizational factors, only organizational support ($B = -0.41$) and role conflict ($B = 0.15$) were significant

predictors of faculty intent to leave. Organizational support and age correlated inversely with intent-to-leave; while role conflict correlated directly with intent to leave. Autonomy, distributive justice, and workload were not significantly associated with physician assistant faculty intent to leave a current employment setting.

CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this study was to examine variables that predict intent-to-leave among physician assistant faculty including organizational factors, demographic characteristics, and human capital factors. The study utilized a non-experimental cross-sectional predictive research design using quantitative methods of data analysis. The survey sample was drawn from the population of physician assistant faculty identified by the Physician Assistant Education Association. The sample included 994 PA faculty employed by PA educational programs in 2012. The primary objective for this study was to propose and test a model for predicting intent-to-leave among PA faculty. This chapter presents a summary and discussion of the results, contributions to the literature on intent to leave and to PA faculty worklife, limitations of the study, as well as proposing opportunities for additional research.

Conclusions and Discussion

Intent to leave was defined as the intention of a physician assistant faculty member to leave the current academic position within one year. This study did not define further the turnover intention, specifically it did not determine if the intent to leave was for the purpose of leaving academe, leaving the institution, or leaving one faculty role for another faculty role. Following the factor analysis the research question was refined as:

1. What is the predictive ability of demographic factors (age, gender, race, marital status, number of dependent children, employment status, actual hours worked), human capital factors (PA faculty role, faculty rank, tenure status, years as a PA educator, years in current position, and highest

degree held), and organizational factors (autonomy, organizational support, distributive justice, role conflict, workload), on physician assistant faculty intent-to-leave the current position?

The research found that the organizational variables *organizational support* and *role conflict*, and the demographic variable *age*, were significantly correlated with physician assistant faculty intent to leave.

Variable: Organizational Support

Among all independent variables in the model, *organizational support* was the strongest predictor of PA faculty intent to leave ($B = -0.41$). When faculty perceived high organizational support their intent to leave was low. This study is among the first to utilize a global measure of organizational support as a predictor of faculty intent to leave, using the short form of the Survey of Perceived Organizational Support (SPOS-8). Perceived organizational support measures an employee's perception of an employer's commitment to an employee (Eisenberger, Huntington, Hutchinson, & Sowa, 1986).

The significant and negative correlation between perceived organizational support and faculty intent to leave among physician assistant faculty found in the current research extends what is known about the relationship between perceived support and faculty turnover intention. The short form SPOS-8 assesses global perceptions of support including employee perceptions of organizational recognition of the employee, employee well-being, and employee contributions to the organization (see the organizational support scale in the survey, Appendix C). An expanded version of SPOS has been used in a study of turnover intention of pharmacy faculty (Conklin & Desselle, 2007). In their study *institutional support*

was found to be significant at a magnitude similar to the current study of PA faculty (Beta = 0.46, $p < 0.001$) in explaining a significant portion of the variance in organizational commitment, which mediated faculty intent to leave. The relationship of organizational support to organizational commitment has also been shown to be significant for both full-time and part-time community college faculty (Engel, 2010). This relationship between organizational support and organizational commitment, and the effect on faculty intent to leave merits further study.

The current study does not define organization-specific measures as indicators of organizational support. Other studies have focused more narrowly on the contributions of organization-specific items in faculty worklife. Johnsrud and Rosser (2002) and Rosser (2004, 2005) have identified *Administrative Support* (secretarial and office support, library services, and teaching and graduate assistants) and *Technical Support* as significant components of faculty worklife which has an indirect effect on faculty intent to leave, through direct effect on job satisfaction. Interestingly, however, these may not be significant to physician assistant faculty as there is an expectation, mandated by the agency accrediting physician assistant education programs, that sufficient staff support, facilities, and technological support be provided by the sponsoring institution (ARC-PA, 2012).

Some recent research on faculty intent to leave has shown that elements of support were not correlated significantly with turnover intention (Heckert & Farabee, 2006; Ryan, Healy, & Sullivan, 2012). In a study of faculty at a public research institution, Ryan and colleagues (2012) reported support was not predictive of leaving for another institution, but was a significant predictor of intent to leave academe altogether, suggesting that differing

motivations may account for those leaving a position versus those leaving a profession. Heckert & Farabee (2006) in a study of faculty at a teaching institution reported that satisfaction with support was not a significant predictor of faculty intent to leave.

The findings presented in the current study may differ from those of Ryan et al and Heckert & Farabee for a number of reasons. Ryan and colleagues (2012) present data from the faculty of a single public research university and Heckert & Farabee (2006) studied a population of faculty at a single four-year institution. These populations differ from the population of physician assistant faculty. Additionally, the items comprising the “support” scales differ between the two studies suggesting that two different conceptualizations of “support” may have been studied. The lack of concordance in these findings may reflect differing study designs, as well as different study populations.

Because the operationalization and measurement of “support” differs substantially among the studies available for review, it is difficult to draw comparisons among the findings. In general, however, organizational support, as measured by specific features of faculty worklife or global perceptions of support, appears to be a major contributor to faculty turnover intention (Conklin & Desselle, 2007; Johnsrud & Rosser, 2004; Rosser 2004, 2005). The findings from the current study are in concordance with existing literature (Conklin & Desselle, 2007; Heckert & Farabee, 2006; Ryan, Healy, & Sullivan, 2012) using global measures of organizational support. Further, the magnitude of the contribution of this variable suggests that additional research regarding the contribution of global perceptions of organizational support on faculty turnover intention may further elucidate reasons why faculty may stay in or leave a specific faculty position or leave the teaching profession.

Variable: Role Conflict

Among the organizational variables in the model, *role conflict* also was a significant predictor of intent to leave ($B = 0.15$). When faculty perceive that role conflict increases, their intent to leave also increases. This finding makes intuitive sense, and is in agreement with the limited existing data on the effect of role conflict on faculty turnover intention.

Role conflict can take on different meanings. Daly and Dee (2006) used a two item measure reflecting competing or conflicting demands from academic administrators. The role conflict scale used in this study of PA faculty, as well as in the study of nursing faculty (Gormley, 2005) was an 8-item scale (Rizzo, House, & Lirtzman, 1970) which is a more robust measure of potential avenues of role conflict including competing demands on time, expectations regarding how and when work is done, regulatory proscriptions, and expectations of differing work groups within a work environment.

Understanding role conflict in faculty worklife requires an understanding of the several ways in which role conflict may occur (Gormley, 2005). Faculty work roles which might be seen as producing role conflict certainly include traditional faculty work categories including *teaching*, *research*, and *service to the institution*. For faculty in the health care professions, *clinical service* may be an additional role expectation. For physician assistant faculty these potential avenues for role conflict may be complicated by additional role expectations defined by historical categorizations of the PA educator role. In addition to conventional administrative designations such as Chair, or Program Director, physician assistant faculty roles have been traditional described based on the primary responsibility of the faculty member within the educational structure. *Academic Coordinators* primarily see to

the curriculum of the didactic phase of physician assistant education, and *Clinical Coordinators* direct the clinical or experiential training. In practice however, the boundaries are not distinct; academic coordinators participate in clinical education and oversight and clinical coordinators are expected to participate in didactic year educational activities. Generalist faculty may be expected to attend to academic and clinical matters. Findings from this study did not demonstrate a significant relationship between PA faculty role (Director, Academic Coordinator, Clinical Coordinator, etc.) and turnover intention. The lack of a significant relationship between faculty role and turnover intention suggests that it is less likely that specifics of each role do not lead to intent to leave, for example clinical coordinators are not likely to leave more frequently than academic coordinators.

PA faculty may be required to participate in clinical patient care, or may be offered the opportunity to add clinical care as a percent of effort in their overall faculty workload. The addition of patient-care responsibilities creates an additional level of potential role conflict given the inherent need for patient care practitioners to be responsive to urgent and emergency needs of patients under their care at times when the academic responsibilities of the faculty member may also be pressing. This role conflict survey scale (see Appendix C) was not designed to differentiate the contribution of role conflict between academic and clinical duties.

This study of PA faculty demonstrated that global perception of role conflict was a significant predictor of PA faculty turnover intention, unrelated to the principal job function of the PA faculty member. The lack of a significant relationship between job function and turnover intention suggests that it is less likely that specifics of each role lead to intent to

leave, for example clinical coordinators are not likely to leave more frequently than academic coordinators. Perceptions of role conflict as measured by the role conflict survey scale suggest that global concerns about clearly defined role expectations, open communications among faculty and academic leadership, and adequate resources and support to work on relevant and meaningful work, are important elements in minimizing perceptions of role conflict.

The study was not designed to identify the nature of the role conflicts which predict intent to leave. Further study to identify such factors should assist administrators and faculty in balancing competing academic demands and the competing demands of academics and clinical care.

Variable: Age

The only demographic or human capital variable to show significant predictive value for physician assistant faculty intent to leave was the variable *age* ($B = -0.13$). This finding indicates that as age increases, faculty intent to leave decreases.

In a study of the faculty turnover intention among faculty of various academic disciplines, Xu (2008) reported a significant relationship between faculty member turnover intention and faculty member age. The relationship was in the same direction as that seen in this study of PA faculty: the older the respondent, the less likely the respondent was demonstrate intent to leave a position. Other investigators, however, have noted no significant relationship between faculty member age and turnover intention (Cropsey, Masho, Shiang, Sikka, Kornstein, & Hampton, 2008; Gormley, 2008; Rosser, 2004; Rosser & Townsend, 2004).

It is unclear why the relationship between faculty member age and turnover intention is significant in some studies and not significant in others; particularly since Xu (2008) demonstrated that age was a significant predictor of intent to leave across all discipline-clusters. For PA faculty in the current study the mean age was 47, the majority of respondents were married, and most had at least one child. The motivation to remain in a faculty position for this demographic composite may be strong enough to make this a significant variable in this particular population.

Implications for Policy and Practice

The rapid growth of the physician assistant profession has created a simultaneous demand for physician assistant faculty to staff new education programs and those existing programs which are expanding trainee seats to accommodate the increase in demand. Data recently released to PA education programs from the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) projects that program growth indicates that there will be 247 programs by the year 2017 (not published); at the time the current research was undertaken there were 137 accredited programs. Faculty for the new programs may come from clinical practitioners interested in career change. It is more likely, however, that faculty may be recruited from existing programs, as institutions value experienced faculty to teach in new programs. Thus, recruitment and retention of new and additional faculty is imperative to new programs and existing ones. Existing and experienced faculty are faced with increasing opportunities for professional growth and advancement and consequently, academic administrators by necessity must attend to the retention of existing faculty.

Data from this study suggest that PA faculty intent to leave the current position in the next twelve months is low. Recently published PA faculty staffing patterns show that more PA faculty are entering positions than are leaving (reflecting growth of existing programs as well as creation of new programs), but the annual turnover rate remains approximately 10% per year (Liang, 2010). The results of the current study of physician assistant faculty intent to leave may be particularly useful for PA educational program administrators planning faculty development and faculty retention programs. Implications for policy and practice arise from the significant predictors of faculty intent to leave, as well as from other elements of the current study.

Implications for the Institution

There are a number of important considerations for academic institutions which sponsor physician assistant programs. The diversity of design of PA education programs, and the variety of academic settings in which PA education programs exist, suggests that individual institutions should attend to defining providing adequate support and resources to ensure retention of faculty necessary for the success of the individual PA program.

In order for institutions to earn initial and continuing accreditation, sponsoring institutions must meet minimum faculty staffing patterns, in addition to providing adequate support staff, teaching facilities, and financial support (ARC-PA, 2012). An institution which does not plan for adequate faculty for existing needs and planned program growth may find it difficult to retain adequate faculty, due to changes in morale and job satisfaction which may result from faculty facing increasing workloads and decreasing resources and support (Johnsrud & Rosser, 2002; Ryan, Healy, & Sullivan, 2012).

A key component of institutional support for faculty is the provision of clearly defined expectations for the individual faculty role including work expectations and requirements for continuing employment. Policies and procedures for appointment and tenure (if available) should be clearly stated, available to all faculty, and applied fairly. The balance of responsibilities between teaching, clinical practice (if required), service, and scholarly activity should be clearly stated at the time of hire, and reviewed annually.

Scholarly productivity is an essential component of successful academic practice. Although institutional requirements for academic promotion vary, scholarly productivity is considered an important aspect of the educator's role. In a recent study of PA academic leadership, the majority of deans and program directors deemed scholarly activity as important for promotion considerations, but only 23% thought allowing more time for scholarly activity was important for retaining faculty (Hegmann & Dehn, 2006). Hegmann (2008) has also reported that almost three-quarters of all PA faculty had no peer-reviewed publications over the length of their careers. One recommendation for improving organizational support for PA faculty is that institutions make clear the expectations regarding scholarly productivity from faculty, and then provide the resources and time for faculty to do research, to publish, or to present at clinical or academic professional education conferences and other venues.

It has been previously shown that administrative support of faculty often refers to the faculty perception of, or satisfaction with, material resources that are available (Johnsrud & Rosser, 2002; Rosser, 2004; Rosser, 2005). This is an important concern for Physician Assistant programs, as the ARC-PA mandates that sponsoring institutions must provide

adequate resources including space, administrative support, and technical facilities and support in order for program faculty to do their jobs (ARC-PA, 2012). Within the field of academic medicine, instructional technologies are changing at a pace driven by technologic advances in computing, imaging, and simulation; models of teaching including team-based teaching and intercollaborative educational initiatives are changing the landscape of PA education, often at increasing cost. Sponsoring institutions must strive to provide the most up-to-date equipment and supplies to ensure that students are properly prepared for successful clinical careers; as technologies change this will require careful attention to allocation of resources in order to support faculty who teach clinical procedures.

For some faculty, organizational support includes aspects of academic governance, leadership support, role autonomy, and control of workload (Daly & Dee, 2006; Ryan, Healy, & Sullivan, 2012; Zhou & Volkwein, 2004). The data from the current study did not show that autonomy or workload was a significant predictor of intent to leave for physician assistant faculty. This may indicate that current faculty consider the degree of job autonomy that they have, and their faculty workloads, are appropriate and acceptable. If this is the case then it would be important for academic administrators to pay careful attention to maintaining current institutional policies and procedures to protect faculty control over autonomy and workload.

Implications for Academic Administrators

The diversity of PA Program design suggests that academic administration of PA faculty may occur at multiple levels. Accreditation standards mandate that every PA program have a Program Director, who may be a PA or a physician, and who is expected to be the

principal administrative officer of the program (ARC-PA, 2012). Depending on the organizational structure of the sponsoring institution, the PA program director may also be a Department Chair. As PA programs are functionally part of larger academic institutions, the administrative chain-of-command usually includes an academic Dean. Collectively, these academic administrators are well-positioned to contribute to the support and maintenance of a robust PA faculty.

The findings from this study suggest that academic administrators should attend carefully to creating a work environment for faculty that is perceived as supportive and minimizing of potential for role conflict. Several opportunities exist in this regard. Organizational support is perceived as positive when the employee sees the organization as interested in the employee's well-being, cognizant of and appreciative of, the employee's contributions, and attentive to the employee's needs. Administrators should maintain clear and open lines of communication with faculty. Faculty meetings at which faculty opinions regarding issues of governance, workload, and other community concerns are solicited should be held regularly. Administration should proactively seek faculty input in governance, hear concerns and complaints, and respond appropriately.

The possibilities for role conflict affecting physician assistant faculty exist in the domains of their academic work, and the nature of the educator-clinician work that they do. Traditional delineations of PA faculty roles include leadership positions (Program Director, Associate Director, Department Chair, Dean), academic assignments based on whether the principal responsibilities lie in the pre-clinical phase of the educational process (Academic Coordinator), the clinical phase of the educational process (Clinical Coordinator), or both

(General Faculty). Faculty engaged in one of the defined roles (e.g. Academic Coordinator) focus on work expectations defined by the job title, but in practice most faculty participate in all phases of the educational process: clinical coordinators are expected to teach in the didactic phase of the program, and academic coordinators have responsibilities for select aspects of the clinical training. Thus the potential for conflict exists in the competing demands of the different roles. To the extent possible, academic administrators must remain aware of the competing demands that academic year and clinical year faculty are confronted with; and manage the distribution of effort equitably so that faculty feel that they are able to meet the demands of the differing aspects of their jobs. Flexible job assignments, attention to scheduling of tasks, and a team-oriented approach to problem solving may help mitigate conflicts that arise in these situations.

Another potential area of role conflict for PA educators is that created by the multiple “missions” of most academic institutions: teaching, research, service to the institution and community, and in the case of clinical educators, patient care. Minimizing conflict between these important roles requires careful delineation of the expectations for the faculty member for participation in each of these arenas. If promotion and tenure decisions are made, the faculty member must be informed of the relative “weight” of each in the promotion decision, and appropriate time and resources must be provided in order to minimize the potential for conflict that might arise among these academic roles.

Considerations for Faculty Development and Retention

The Physician Assistant Education Association (PAEA) maintains a Faculty Development Institute (FDI) which sponsors webinars and recurring workshops covering a

wide variety of topics of interest to program directors and faculty, such as New Program Directors Retreat, and Basic Skills workshops for Academic Coordinators, Clinical Coordinators, and General Faculty. The Accreditation Review Commission on Education for the Physician Assistant mandates that in order to obtain and maintain program accreditation institutions sponsoring PA programs are required to provide sufficient support for faculty for continued development of clinical, academic, research, and administrative skills (ARC-PA, 2012) but the accreditation standards do not delineate specifically the manner of faculty development.

The diversity of design of PA education programs, and the variety of academic settings in which PA education programs exist, suggests that individual institutions should attend to defining the manner of faculty development most appropriate for the specific program. A faculty development needs assessment would be important for the institution to define the specific needs of the faculty involved; however the stakeholders for such a needs assessment should include faculty and administrators from within the program and external to it, as well as students, if feasible. Once specific needs are identified, a plan for on-going faculty development can be made, with attention to regular evaluation of both the success of the program as well as continual re-evaluation of faculty needs as they may change over time.

Additional Considerations

Recruitment and retention of qualified faculty is important to maintaining a quality educational program. Nurturing a diverse faculty which is representative of the population of clinical practitioners and the patients they serve is important. This study confirms that the

population of PA educators is predominantly female, and further confirms that minority faculty are not appropriately represented in the population of PA educators. Efforts to improve the recruitment of non-Caucasian faculty should be a priority for academic administrators. Concomitant with efforts to improve the recruitment of minority faculty, strategies to ensure successful retention of minority faculty should be in place.

The majority of faculty in this study serve at the rank of assistant professor or lower, are non-tenured or not eligible for tenure, and only 30% are doctorally-prepared. The terminal degree for the physician assistant profession is the Master's Degree. In the brief history of the profession there has never been an expectation that academic faculty hold a degree higher than that conferred to the graduating physician assistant. In part this may be due to the young "age" of the profession. In the 40 years since its inception the Master's Degree has become the preferred degree during the past decade. Complicating the matter of doctorally-prepared faculty is the fact that most PA educators are in established careers, and the ability to return to graduate school and remain employed is beyond the reach of many faculty. Educational institutions may adopt novel strategies for providing opportunities for PA faculty wishing to advance their education; the availability of on-line courses, or part-time night classes, is increasing. For academic administrators placing value on doctorally-prepared faculty, release time and tuition support may provide incentives at the institutional level for the faculty member to remain.

Limitations

There are a number of limitations of this study which must be acknowledged in the consideration of the findings of this study and the implications for policy, practice, and future

research. This study proposed an exploratory model for predicting physician assistant faculty intent to leave the current faculty position. It was a cross-sectional study which surveyed faculty intent to leave at a specific point in time (summer 2012). Faculty mobility is a dynamic process, and attitudes, opinions, and beliefs may change over time.

Construct validity of the survey scales was established by the exploratory factor analysis, and the scales demonstrated good to excellent internal validity as shown by the Chronbach's alpha estimates reported in Chapter 4. Because this was a study of physician assistant faculty, the results of this study are not generalizable to faculty in general, or faculty of other clinical education disciplines. The proposed model, however, may suggest variables of interest in the study of other health professions education faculty worklife or turnover intention.

The response rate to the survey instrument was modest, at 34% (343 respondents) but the regression analysis was limited to 271 respondents. One consideration when calculating sample size for multiple regression procedures is the sample used for analysis. Researchers differ on the minimum requirements, citing ranges from 15 – 30 subjects per independent variable in the model (O'Rourke, Hatcher, & Stepanski, 2005). The preferred sample size for the current study was calculated to be between 300 – 600 subjects. When the analysis is based on fewer than the anticipated number of responses, some results may appear to be insignificant, where they may have reached significance at the target sample size (Allison, 1999). The model remained significant ($R^2 = .40$, $F = 9.86$, $p < .0001$), however the results may reflect a non-response bias. Due to limitations of cost and time, no attempt was made to survey non-respondents for differences between respondents and non-respondents.

The bivariate correlations between the organizational variables *organizational support*, *workload*, *autonomy*, *distributive justice*, and *role conflict* are modest (see Table 11, page 125). These correlations suggest that near-multicollinearity of independent variables may exist. Collinearity and near-collinearity of variables may obscure the true contribution of each variable to the regression equation (Allison, 1999). An examination of the collinearity diagnostics in this study (Table 12, page 127) reveals that the Tolerance Value and Variance Inflation Factor (VIF) for *organizational support* are 0.45 and 2.23 respectively. A Tolerance Value below 0.4 and a VIF greater than 2.50 may suggest near-multicollinearity (Allison, 1999).

The model demonstrated that approximately 40% of the variance in intent to leave is explained by the variables in the model. The adjusted R^2 was 36%. This is a moderate effect but other variables may contribute to physician assistant faculty intent to leave. The original proposed model included an independent variable *Environmental Factors*, which included domains outside the organizational and personal. *Job Opportunities* and *Family Considerations* were proposed to account for environmental factors external to the organization or the respondents' personal characteristics. Factor loadings from the Exploratory Factor Analysis indicated that these constructs, due to the survey wording, were measures of intent to leave. External factors are likely to contribute to physician assistant faculty intent to leave. Other variables not included in the model may account for some of the variance in physician assistant faculty intent to leave; these are discussed in below as suggestions for future research.

Suggestions for Future Research

The current study demonstrated that physician assistant faculty have a relatively low propensity for leaving the current faculty position, but the model accounts for only 40% of the variance in intent to leave, suggesting that there may be other variables which might predict for PA faculty intent to leave. Several avenues exist for additional research regarding physician assistant faculty worklife, extending the literature on predictors of physician assistant faculty intent to leave by studying additional variables which may predict turnover intent, and extending the model to other faculty, particularly in health professions education.

Factors outside of the organization may affect intent to leave. For physician assistant faculty projections for growth of the PA profession and the need for additional and expanded educational programs (BLS, 2008-2009b) suggests that job opportunities are, and will remain, plentiful at other institutions or outside of academe (such as opportunities to return to clinical practice, or health care administration) which might offer sufficient inducements to a faculty member to leave the current position. Existing literature on faculty turnover intention is discordant on this point. Daly & Dee (2006) demonstrated that job opportunity was a significant negative predictor of faculty intent to stay; conversely, Ryan and colleagues (2012) reported no significant correlation between external job opportunity and intent to leave the institution or academe.

Similarly, the effect of family obligations or kinship responsibilities may also affect physician assistant turnover intention. Kinship ties were not found to be a significant predictor of faculty intent to stay among faculty in urban public universities (Daly & Dee, 2006). Family responsibilities were found to be significant predictor of intent to leave

academe, but not intent to leave one institution for another (Ryan, Healy, & Sullivan, 2012). In a study of pharmacy faculty spousal job transfer was found cited as a major reason for leaving an academic institution (Conklin & Desselle, 2007). In the current study of physician assistant faculty the majority of respondents were married and had at least 1 child; family considerations may well play a role in physician assistant turnover intent, either in staying to ensure stability, or leaving in support of a spouse or partner opportunity.

The demographic profile of respondents in the current study reflects closely the population of physician assistant faculty. There was a slight difference in the gender distribution. Women respondents made up 62% of the current sample; however, they represent 56% of PA faculty (Scott & Lane, 2012). Respondents to the current survey are predominantly Caucasian (87%), and this closely reflects the data from the annual faculty census but not the PA population as a whole where Caucasians make up 66% of the population (American Academy of Physician Assistants [AAPA], 2011). Continued recruitment and retention of women and improved recruitment and retention of women and minority faculty is crucial for the development of a diverse faculty, as is an understanding of why they leave faculty positions (Cropsey, Masho, Shiang, Sikka, Kornstein, & Hampton, 2008). Further study of the PA faculty population and the PA population to identify faculty worklife issues important to women and minority faculty would inform future faculty development and retention programs. An additional aspect of understanding PA faculty worklife would be a study undertaken to determine reasons for the discrepancy between the percent of Caucasians in the PA workforce and those in PA education. Efforts to recruit and retain minority faculty would be informed by such data.

While the findings of the current study are not generalizable to other faculty, the proposed model of predictors of faculty turnover intention may be useful in studying faculty turnover intention in other health professions faculty. A comparison of predictors of turnover intention among faculty of different health professions, using the same prediction model, would inform institutional leaders regarding the need to strengthen retention efforts differently in the setting of data suggesting disparate reasons for leaving. Conversely, a study suggesting commonalities of turnover intention would allow institutional administrators information useful for consolidating retention efforts and strengthening the academic community.

There are a number of dimensions of faculty worklife which have been shown in other studies to be significant factors in faculty turnover intent. Inclusion of variables such as job satisfaction, burnout, and levels of organizational commitment among PA faculty would extend our understanding of the PA faculty workforce. Multiple studies of faculty worklife have demonstrated that various dimensions of job satisfaction are significant factors in faculty turnover intent. The dimensions of job satisfaction have included satisfaction with decision making authority or autonomy (Heckert & Farabee, 2006; Rosser & Townsend, 2006; Zhou & Volkwein, 2004), workload (Heckert & Farabee, 2006; Rosser, 2004; Rosser & Townsend, 2006), compensation (Heckert & Farabee, 2006; Rosser, 2004; Rosser & Townsend, 2006; Xu, 2008; Zhou & Volkwein, 2004), facilities or resources (Heckert & Farabee, 2006; Zhou & Volkwein, 2004), support (Heckert & Farabee, 2006), and overall satisfaction (Daly & Dee, 2006; Ryan, Healy, & Sullivan, 2012; Zhou & Volkwein, 2004).

Boeve (2007) has studied job satisfaction among PA faculty, reporting that 49% of the variance in job satisfaction among PA faculty was accounted for by the combination of satisfaction with work itself, with coworker relations, with advancement opportunities, with support, and with years in PA education. Not significant were gender, race, faculty rank, faculty position, highest degree held, or salary. He did not correlate these findings with PA faculty turnover intent.

The variables of interest in the current study of PA faculty intent to leave include autonomy (governance and authority), workload, but not work itself, support, and compensation (in the broader category of rewards and recognition). Although organizational support and role conflict were the only significant predictors of turnover intent in the current study, it may be that job satisfaction mediates turnover intent to the degree that other measures of satisfaction may predict PA faculty intent to leave and these should be the focus of further study.

Clarification of the relationships of the variables in the current study may explain the relationships among the organizational variables. The modest bivariate correlations and indications of near-multicollinearity may be answered by altering the combinations of factors studied, and by running the model in stepwise or block regression analyses to determine if the variance accounted for, the weights, and the significance of the contributing variables differs from the current data.

This study established that role conflict is a significant contributor to PA faculty intent to leave the current position. The study did not attempt to define which factors within the PA role contribute to the turnover intention. Additional study should examine conflict in

the role regarding traditional academic work roles (teaching, research, service) and conflict between academic and clinical demands on PA educators who work in both environments.

Stress has also been shown to affect faculty turnover intention (Barnes, Agogo, & Coombs, 1998; Ryan, Healy, & Sullivan, 2012). Stress in faculty worklife has been conceptualized in a variety of ways. Barnes and colleagues (1999) identified stressors as reward and recognition, time commitment, influence, and student interaction, all of which were significant predictors of intent to leave academia. Ryan and colleagues (2012) identified stress of work stress of publishing, and stress of family, finding that stress of work was a significant predictor of intent to leave for another institution and stress of family a significant predictor of considering leaving academe.

In the current study of PA faculty intent to leave, reward and recognition was conceptualized as distributive justice and was a non-significant predictor; influence is an element of governance and autonomy which was also not significant. Whether these concepts, when conceptualized as stressors, may influence PA faculty turnover intent is unclear but their relationship warrants further study.

Conceptually similar to stress is the concept of burnout. Burnout among PA faculty has been described (Forister & Blessing, 2007). Using the Maslach Burnout Inventory – Educators Survey (MBI-ES), the authors reported relatively low burnout scores; specific subscale measures of interest included 50% scoring low in emotional exhaustion, 83% low in depersonalization, and 13% high in lack of satisfaction (Forister & Blessing 2007). The authors did not measure PA faculty turnover intention or the correlation of measures of burnout to turnover intention. Future studies of stress and burnout in PA faculty should

attempt to correlate these concepts with intent to leave or stay in a job or in an academic setting.

To extend the research on PA faculty worklife, and faculty turnover intention, researchers should include the study of levels of organizational commitment among faculty, and the correlation between levels of organizational commitment and faculty turnover intention. Organizational commitment has not been well studied among faculty in general. In a study of chiropractic faculty, Marchiori and Henkin (2004) demonstrated that tenure, gender and age were predictors of organizational commitment. Gormley (2005) has shown that nursing faculty intent to leave was predicted by affective, continuance, and normative commitment. Engel (2010) established the relationship between perceived organizational support and organizational commitment among faculty. To date, there have been no studies of PA faculty levels of organizational commitment or the relationship between organizational commitment and PA faculty turnover intention.

An understanding of the predictive value of stress, burnout, job satisfaction, and levels of organizational commitment on PA faculty turnover intention would contribute to our understanding of PA faculty worklife and provide academic administrators information to shape policy for faculty retention and improve faculty practice. Additional avenues of extending the research on PA faculty intent to leave should include replicating the results of the current study in order to provide confirmation of the findings. In order to clarify the direct and indirect effects of study variables on PA faculty intent to leave, additional analytical models such as structural equation modeling (SEM) or path analysis could be employed. Finally, clarification of variables of interest might be identified through additional

research methodologies including qualitative and mixed-methods research designs. PA faculty worklife is not well-studied, and the results of additional research should further our understanding of the workforce.

The findings from this study suggest that there may be additional avenues of research regarding post-secondary faculty turnover intention outside of health professions faculty. As has been noted above, there is abundant literature suggesting the importance of specific elements of institutional support in regard to faculty turnover intention (Johnsrud & Rosser, 2002; Rosser 2004, 2005). Ryan and colleagues (2012) used a more global measure of perceived organizational support with the finding the organizational support was related to intention to leave academe, but not related to leaving one academic position for another academic position. The magnitude of the relationship of perceived organizational support to intention to leave in the current study suggests that this is an important measure which should be further studied. The relationship between role conflict and intent to leave has not been well studied in post-secondary faculty. The findings from the current study suggest that this is an area that may be of importance in understanding faculty turnover intent.

Summary

The data presented in this study demonstrates that organizational support and role conflict are significant predictors of intent to leave. Administrators and institutions should work to ensure that faculty are engaged in interesting and intellectually stimulating work within an environment that provides the resources necessary to support individual faculty needs while reducing the opportunities for role conflict. The latter is particularly important: clinical requirements must be clearly identified; balance between teaching, service and other

obligations must be clearly stated and distributed equitably among faculty. For less experienced faculty a mentoring program and a faculty development program are essential elements to reduce conflict and increase the sense of organizational support.

It is interesting that in the current study autonomy was not a significant predictor of intent to leave. By its nature, physician assistant practice is collaborative. PAs practice in collaborative practice arrangements with supervising physicians. Such practice allows the PA to use autonomy of decision-making; thus PA educators may bring to faculty roles an understanding of the flexible nature of autonomy of work. PA educational practice over the past decade has encouraged inter-collaborative educational effort among disciplines. PA faculty may be accustomed to a team-oriented approach to education in which autonomy may be less important. Faculty development efforts should continue to promote inter-collaborative and interdisciplinary educational efforts.

A greater understanding of physician assistant faculty worklife should provide academic administrators with an improved ability to provide a supportive learning community in which PA educators may thrive. Attention to strategies of improving organizational support and reducing role conflict are important. Attention to recruitment and retention of a diverse faculty is paramount. A dynamic and changing educational environment and health care environment requires that health education institutions nurture and encourage their faculty in order to remain effective and competitive in the educational arena.

Concluding Statement

This study proposed a model for understanding physician assistant faculty intent to leave a current position. Faculty retention is critical to the success of the academic enterprise, and strategies for retention of faculty may be developed from an understanding of issues which encourage faculty to stay, or drive them away. The model confirmed that organizational factors including organizational support and role conflict are significant predictors of faculty turnover intent. The study also confirmed that as faculty age they are less likely to leave a current position. These data suggest that academic administrators must attend to developing and maintaining a nurturing and supportive community of learning in order to retain faculty. Additional research is necessary to understand how to improve recruitment, and subsequently retention, of minority faculty. The educational milieu for physician assistant faculty is rapidly changing, with new educational technologies, and increasing demands for practitioners driving increasing enrollments. Faculty are a necessary and vital element in physician assistant education. This study contributes to our understanding of the physician assistant faculty workforce and workforce improvement.

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APPENDICES

Appendix A: Institutional Review Board Letter of Exempt Status

<small>North Carolina State University is a land-grant university and a constituent institution of the University of North Carolina</small>		<small>Office of Research and Innovation Division of Research Administration</small>
NC STATE UNIVERSITY		
		<small>Campus Box 7514 Raleigh, North Carolina 27695-7514 919.515.2444 (phone) 919.515.7721 (fax)</small>
From:	Carol Mickelson, IRB Coordinator North Carolina State University Institutional Review Board	
Date:	July 11, 2012	
Title:	Factors predicting physician assistant faculty intent to leave	
IRB#:	2727	
Dear David Coniglio		
<p>The research proposal named above has received administrative review and has been approved as exempt from the policy as outlined in the Code of Federal Regulations (Exemption: 46.101. b.2). Provided that the only participation of the subjects is as described in the proposal narrative, this project is exempt from further review.</p>		
NOTE:		
<ol style="list-style-type: none">1. This committee complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NCSU projects, the Assurance Number is: FWA00003429.2. Any changes to the research must be submitted and approved by the IRB prior to implementation.3. If any unanticipated problems occur, they must be reported to the IRB office within 5 business days.		
Please forward a copy of this letter to your faculty sponsor, if applicable. Thank you.		
Sincerely,

Carol Mickelson NC State IRB		

Appendix B: Letter of Invitation to Participate

Dear Colleague,

I am writing to ask that you participate in a research study of physician assistant faculty worklife. The purpose of the survey is to determine if organizational factors (workload, autonomy, role conflict, organizational commitment, and distributive justice), environmental factors (job opportunities, family considerations) and demographic factors are predictive of PA faculty intent to leave their current position.

This is an online survey which should take approximately 15 minutes to complete. Participation is voluntary and you may withdraw from the study at any time. Completion of the survey constitutes your informed consent to participate.

The study may be accessed by clicking on this link: <https://www.surveymonkey.com/s/FacServ>

The study has been reviewed and approved by the Institutional Review Board (IRB) at North Carolina State University, Raleigh, NC. All responses are gathered anonymously and data is stored in aggregate form, without identifiers. Upon completion of the study, results will be analyzed in aggregate form. Results of the study will be submitted to a journal of interest to PA educators.

This study may provide very useful information regarding PA faculty attitudes, opinions, and beliefs regarding important issues of PA faculty worklife. These results may be useful in planning faculty recruitment and retention efforts, and may shape policy regarding faculty development initiatives.

The research is conducted in partial fulfillment of requirements for the degree of Doctor of Education. This dissertation research is under the direction of Dr. Duane Akroyd. If you have any questions please contact me at the number below, or contact Dr. Akroyd at 919-515-1743.

Best regards and thank you for your time.

David Coniglio

David Coniglio, MPA, PA-C
Doctoral Candidate in Adult and Community College Education
North Carolina State University
Raleigh, NC 27695
919-814-5532

Appendix C: Survey

Factors predicting physician assistant faculty intent to leave

Thank you for participating in this survey of physician assistant faculty worklife. The purpose of this research is to examine demographic, organizational, and environmental factors which might predict faculty intent to leave their current position.

Your participation in this survey is voluntary, and your responses will be held confidential. Data is collected and will be reported in the aggregate, with no information gathered or reported in such a way that any person can be identified. Your participation in the survey constitutes your informed consent. You may discontinue participation at any time by closing the survey.

The study has been reviewed and approved by the Institutional Review Board (IRB) at North Carolina State University, Raleigh, NC. This survey does ask questions about your work setting. All responses are gathered anonymously and data is stored in aggregate form, without any identifiers to you, your email or IP address. Several safeguards are in place to maintain your anonymity and the confidentiality of your responses. Upon completion of the study, results will be analyzed in aggregate form. Results of the study will be submitted to a journal of interest to PA educators. Please be careful not to reveal identifying information.

This survey should take approximately 15 minutes to complete.

If you have any questions please feel free to contact me at: conigtod@campbell.edu.

Thank you.

Factors predicting physician assistant faculty intent to leave

Demographic information

Age

Age (in years)

Gender

- ☐ Female
☐ Male

Race/ethnicity

- ☐ African-American
☐ Asian-American
☐ Caucasian
☐ Hispanic
☐ Native-American
☐ Other (please specify)

Marital status

- ☐ Single
☐ Married/Partnered
☐ Separated/Divorced/Widowed
☐ Other (please specify)

Dependent children

How many children under the age of 18 live in your household?

Employment Status

- ☐ Full-time
☐ Part-time

Actual hours worked

On average, how many hours per week do you spend in order to get your job done?

Factors predicting physician assistant faculty intent to leave**PA faculty role**

- ☐ Program Director/Chair/Dean
- ☐ Associate Assistant Director
- ☐ Academic Coordinator
- ☐ Clinical Coordinator
- ☐ General Faculty
- ☐ Other (please specify)

Faculty Rank

- ☐ Professor
- ☐ Associate Professor
- ☐ Assistant Professor
- ☐ Instructor
- ☐ Clinical Associate
- ☐ No faculty rank
- ☐ Other (please specify)

Tenure status

- ☐ Tenured
- ☐ Tenure-eligible
- ☐ Not on tenure track
- ☐ Other (please specify)

Years PA educator

How many years of experience do you have as a PA educator?

Years in current position

How many years have you been in your current position?

Factors predicting physician assistant faculty intent to leave**What is the highest academic degree you hold?**

- ☐ Doctorate
- ☐ Masters
- ☐ Baccalaureate
- ☐ Associate
- ☐ Other (please specify)

Factors predicting physician assistant faculty intent to leave

What is the single biggest factor which you think determines your intent to leave or to stay in your current faculty position?

What is the greatest challenge you face as a faculty member?

What other comments would you like to make regarding your experience as a faculty member?

Do you have any other comments or suggestions?

Factors predicting physician assistant faculty intent to leave

Thank you for participating in this survey. To end the survey please click "done". You may then close this program and exit out of your web-browser.

Appendix D: SAS Program and Output for Regression Procedure

```

PROC IMPORT OUT= WORK.data_intent_dummy2
            DATAFILE= "C:\Users\David\Desktop\data_intent_dummy2.xls"
            DBMS=EXCEL REPLACE;
            RANGE="Sheet1$";
            GETNAMES=YES;
            MIXED=NO;
            SCANTEXT=YES;
            USEDATE=YES;
            SCANTIME=YES;
RUN;
Options linesize=100 pagesize=132;
OPTIONS FORMCHAR="|----|+|---+=|-/\\<>*";
Ods listing;
Ods html;

proc reg;
model lvintent = workload autonomy orgsupp distjust roleconf age gender
race marital child empstat hours facrole facrank tenure yr_curr degree/
stb vif tol collin;
run;

```

The SAS System 15:37 Wednesday, January 30, 2013 1

The REG Procedure

Model: MODEL1

Dependent Variable: LvIntent LvIntent

Number of Observations Read	343
Number of Observations Used	271
Number of Observations with Missing Values	72

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	17	21491	1264.20191	9.86	<.0001
Error	253	32451	128.26349		
Corrected Total	270	53942			

Root MSE	11.32535	R-Square	0.3984
Dependent Mean	32.85240	Adj R-Sq	0.3580
Coeff Var	34.47343		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t	Standardized Estimate	Tolerance
Intercept	Intercept	1	61.05462	9.00966	6.78	<.0001	0	.
Workload	Workload	1	-0.04272	0.12322	-0.35	0.7291	-0.02432	0.48313
Autonomy	Autonomy	1	-0.03926	0.08633	-0.45	0.6497	-0.02908	0.58129
OrgSupp	OrgSupp	1	-0.50937	0.08959	-5.69	<.0001	-0.41440	0.44763
DistJust	DistJust	1	-0.17705	0.12990	-1.36	0.1741	-0.09296	0.51117
RoleConf	RoleConf	1	0.29420	0.11890	2.47	0.0140	0.15176	0.63215
Age	Age	1	-0.18655	0.09420	-1.98	0.0487	-0.13023	0.54993
Gender	Gender	1	2.44261	1.61318	1.51	0.1312	0.08198	0.81109
Race	Race	1	2.19352	2.06626	1.06	0.2894	0.05277	0.96235
Marital	Marital	1	-0.17952	1.99042	-0.09	0.9282	-0.00465	0.89491
Child	Child	1	-0.96217	0.72925	-1.32	0.1882	-0.07783	0.68342
EmpStat	EmpStat	1	5.63804	3.83782	1.47	0.1431	0.07886	0.82516
Hours	Hours	1	0.01311	0.06437	0.20	0.8388	0.01159	0.73431
FacRole	FacRole	1	-1.01357	2.10437	-0.48	0.6305	-0.02720	0.74556
FacRank	FacRank	1	0.96361	1.88012	0.51	0.6087	0.03138	0.63449
Tenure	Tenure	1	-0.32435	1.63694	-0.20	0.8431	-0.01024	0.88983
Yr_Curr	Yr_Curr	1	0.13611	0.15230	0.89	0.3723	0.04881	0.79720
Degree	Degree	1	-2.78793	2.10916	-1.32	0.1874	-0.07781	0.68613

Parameter Estimates

Variable	Label	DF	Variance Inflation
Intercept	Intercept	1	0
Workload	Workload	1	2.06982
Autonomy	Autonomy	1	1.72031
OrgSupp	OrgSupp	1	2.23398
DistJust	DistJust	1	1.95631
RoleConf	RoleConf	1	1.58191
Age	Age	1	1.81840
Gender	Gender	1	1.23291
Race	Race	1	1.03913
Marital	Marital	1	1.11743
Child	Child	1	1.46323
EmpStat	EmpStat	1	1.21189
Hours	Hours	1	1.36183
FacRole	FacRole	1	1.34127
FacRank	FacRank	1	1.57606
Tenure	Tenure	1	1.12381
Yr_Curr	Yr_Curr	1	1.25440
Degree	Degree	1	1.45745

Collinearity Diagnostics

Number	Eigenvalue	Condition		Proportion of Variation			
		Index	Intercept	Workload	Autonomy	OrgSupp	DistJust
1	10.86371	1.00000	0.00004805	0.00054796	0.00022032	0.00027768	0.00041843
2	1.37745	2.80834	0.00003547	0.00005425	0.00016724	0.00021040	0.00001598
3	0.98482	3.32131	0.00000359	0.00006048	6.934819E-7	0.00005036	0.00005277
4	0.90456	3.46554	1.866886E-7	0.00010910	0.00000354	0.00000148	0.00007301
5	0.84855	3.57808	0.00000632	0.00032090	0.00003804	0.00011371	0.00022125
6	0.66675	4.03653	0.00000178	0.00112	0.00000370	0.00000340	0.00003810
7	0.52344	4.55569	0.00002749	0.00040866	0.00002520	0.00001097	3.509307E-7
8	0.49838	4.66886	0.00000764	0.00043939	1.463717E-7	0.00003233	0.00000303
9	0.39559	5.24041	0.00000597	0.00036148	0.00013974	0.00009526	0.00048013
10	0.35394	5.54020	0.00014882	0.00663	0.00174	0.00281	0.00693
11	0.23967	6.73262	0.00035210	0.06243	0.00283	0.01530	0.02173
12	0.13676	8.91286	0.00028257	0.00039460	0.00097244	0.00012518	0.00004061
13	0.06790	12.64927	0.00023794	0.48052	0.00015725	0.01996	0.05462
14	0.05146	14.52955	0.00013992	0.09803	0.04255	0.01125	0.50762
15	0.03061	18.83928	0.00220	0.30525	0.25095	0.09200	0.10392
16	0.02948	19.19812	0.00034317	0.00479	0.02918	0.66121	0.24234
17	0.02198	22.23337	0.00072048	0.03788	0.54003	0.11725	0.03520
18	0.00496	46.80372	0.99544	0.00064725	0.13099	0.07930	0.02629

Collinearity Diagnostics

Number	Proportion of Variation					
	RoleConf	Age	Gender	Race	Marital	Child
1	0.00046007	0.00018872	0.00181	0.00105	0.00111	0.00136
2	0.00030649	5.504048E-7	0.01213	0.00082689	0.00473	0.02341
3	0.00004190	0.00000910	0.05809	0.01373	0.38217	0.06972
4	0.00000524	0.00000290	0.00015619	0.53264	0.02535	0.00198
5	0.00005440	2.756052E-8	0.00853	0.32509	0.21003	0.00288
6	0.00009594	0.00002485	0.18908	0.02155	0.01443	0.00375
7	0.00034798	0.00018332	0.43030	0.01007	0.12523	0.00009341
8	0.00016951	0.00071104	0.10154	0.03675	0.01398	0.28924
9	0.00000516	0.00000824	0.00287	0.01911	0.01579	0.00009805
10	0.00004910	0.00081026	0.05661	0.00172	0.18954	0.33931
11	0.08865	0.00116	0.01544	0.01294	0.00023508	0.00120
12	0.04548	0.00261	0.03541	0.00188	0.00321	0.00355
13	0.22766	0.00801	0.02228	0.01068	0.01188	0.01241
14	0.19534	0.02271	0.00027666	0.00907	0.00047068	0.00087457
15	0.02357	0.05471	0.00016205	0.00022498	0.00013517	0.00114
16	0.03812	0.17525	0.02605	0.00261	0.00001207	0.08709
17	0.00961	0.44773	0.03821	0.00000914	0.00112	0.05754
18	0.37003	0.28588	0.00107	0.00004829	0.00056862	0.10436

Collinearity Diagnostics

Number	Proportion of Variation					
	Hours	FacRole	FacRank	Tenure	Yr_Curr	Degree
1	0.00033983	0.00085362	0.00146	0.00179	0.00191	0.00127
2	0.00005670	0.00491	0.06543	0.04104	0.00899	0.10669
3	0.00011399	0.00005530	0.00224	0.00030774	0.00393	0.03022
4	0.00024285	0.00041554	0.02169	0.00907	0.00020614	0.01412

The SAS System 15:37 Wednesday, January 30, 2013 2

The REG Procedure
Model: MODEL1
Dependent Variable: LvIntent LvIntent

Collinearity Diagnostics

Number	-----Proportion of Variation-----					
	Hours	FacRole	FacRank	Tenure	Yr_Curr	Degree
5	0.00014800	0.00111	0.00367	0.00120	0.00947	0.02533
6	0.00017024	0.00021860	0.00000891	0.64175	0.00831	0.03004
7	0.00048095	0.00476	0.00834	0.14798	0.22454	0.00026217
8	0.00015103	0.00287	0.05829	0.05334	0.15333	0.20246
9	0.00017254	0.00105	0.66784	0.02542	0.00252	0.48951
10	0.00088821	0.00569	0.00345	0.03975	0.42625	0.00452
11	0.01017	0.04257	0.01142	0.00877	0.06271	0.03087
12	0.04115	0.66993	0.03861	0.01729	0.00001142	0.03041
13	0.10376	0.00005448	0.00000648	0.01144	0.00682	0.01532
14	0.10541	0.00610	0.05931	0.00023776	0.01567	0.01242
15	0.48218	0.06634	0.00108	0.00004528	0.00736	0.00020377
16	0.04116	0.00629	0.04924	0.00023194	0.01311	0.00322
17	0.06055	0.00725	0.00775	0.00015784	0.04764	0.00270
18	0.15287	0.17952	0.00015374	0.00016552	0.00721	