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AN EXAMINATION OF PHARMACY FACULTY QUALITY OF WORK LIFE:

WORK SATISFACTION, TURNOVER INTENTIONS, AND SELF-EFFICACY

A Thesis

Submitted to the Mylan School of Pharmacy

Duquesne University

In partial fulfillment of the requirements for the

Degree of Master of Science, Pharmaceutical Administration

By

Mark H. Conklin

February 2008

AN EXAMINATION OF PHARMACY FACULTY QUALITY OF WORK LIFE:

WORK SATISFACTION, TURNOVER INTENTIONS, AND SELF-EFFICACY

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Mark H. Conklin

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ABSTRACT

AN EXAMINATION OF PHARMACY FACULTY QUALITY OF WORK LIFE:
WORK SATISFACTION, TURNOVER INTENTIONS, AND SELF-EFFICACY

By

Mark H. Conklin

February 2008

Thesis Supervised by Dr. Shane Desselle

Previous research on pharmacy faculty quality of work life lacks a thorough, well-conceived theoretical foundation, especially in critical areas such as work satisfaction and turnover intentions. The objectives of this study are to develop a comprehensive measure of pharmacy academician work satisfaction and determine the contribution of work life variables toward pharmacy academician work satisfaction, job turnover intentions, and self-efficacies. An e-mail survey sent to pharmacy faculty elicited responses on various single and multi-item measures of quality of work life variables. Factor analytic procedures were used to evaluate the validity and reliability of the work satisfaction scale. Multiple regression procedures were used to identify predictors of the satisfaction, turnover, and self-efficacy constructs. The satisfaction measure demonstrated construct validity, while each of the six domain subscales exhibited internal consistency reliability. Institutional support and intradisciplinary consensus variables were commonly identified

as predictors of satisfaction, stress, and self-efficacies for pharmacy faculty. Administrators might consider these results when implementing policies that may impact organizational climate and faculty morale. There is still an opportunity to further examine quality of work life among pharmacy faculty.

DEDICATION

This work is dedicated to my family

ACKNOWLEDGEMENT

I would like to take this opportunity to thank those of who were integral to the successful completion of this project. First, I would like to thank my wife, Michel, for being patient while the days, weeks, and months rolled past with varying levels of productivity and for not allowing the frustrations of early research to overwhelm me too greatly or too often. I must also thank my parents for their undying support in any endeavor that I decide to put my time and energy into. I can only hope to do the same for my children someday.

I would also like to thank those faculty members who served on my thesis committee for their support of my graduate work. Drs. O'Neil, Harrold, Hammer, and Tipton – I am grateful for your support.

Most importantly I am grateful for the support offered me by Dr. Desselle. To this day I am uncertain as to how you talked me into this whole deal, but I cannot thank you enough for doing so. Before all of this, I never would have been able to conceive of the doors that it has opened for me. The knowledge and skill set that I have gained in my time as a graduate student at Duquesne will be forever valuable as I attempt to figure out exactly what it is that I'd like to do when I grow up. Your future graduate students will be lucky to have you as an advisor and mentor.

TABLE OF CONTENTS

LIST OF TABLES

1.0   INTRODUCTION

1.1   PHARMACY FACULTY WORK LIFE

Disciplinary differentiation and specialization has yielded empirical work by scholars examining the structural composition of academic disciplines and their "progress", or productivity in achieving scientific breakthroughs.[1] This trend in specialization began in the early twentieth century but has accelerated over the past two decades. Nowhere is this better typified than within the health sciences, as advances in medical technology, along with the dynamic environment of health policy, necessitates that academic institutions train students in rapidly evolving professions while continuously updating and revising the curricula of existing programs.[2]

Academic research institutions have become increasingly sensitive to teaching outcomes, and private institutions traditionally dominated by a teaching mission have increased expectations for scholarly productivity among faculty. Such accountability stems from societal demands for higher education institutions, especially those training students in professional disciplines, to produce both significant scientific advances and a liberally-educated citizenry.[3]

This duality of institutional goals filters down to an institution's faculty, as teaching and research dominate the role functions of the professoriate. It has been

suggested that the specialization of disciplines and commercialization of higher education have played a part in higher expectations of faculty.[1, 4] Faculty are expected to continue to procure extramural funds and publish, even in spite of what has become a more liberal and expansive view of scholarship in recent years.[5] Such delineations of what constitutes productivity may result in faculty beginning to perceive erosions in their autonomy, resulting in greater levels of stress with a deleterious impact on quality of work life.[6, 7] Moreover, increasing pressures to engage in scholarly activities and publish, along with greater accountability for teaching outcomes, may have deleterious effects on junior faculty work life specifically, including self-efficacy and job turnover.

Faculty retention and quality of work life issues are especially critical in such fields as pharmacy academe. The manpower shortage that pervades pharmacy practice has resulted in academic faculty shortages. The founding of new schools of pharmacy and increasing enrollments at existing institutions, which have sought to fill the pipeline of new practitioners, has contributed to this shortage. The additional year(s) of school required by the transition to the PharmD degree and lucrative salaries for new practitioners may be linked to a decline in interest among students pursuing post-graduate education, and has resulted in a shrinking pool of qualified applicants for the increasing number of new faculty positions.[8, 9] Sustained vacancies of academic pharmacy faculty positions may place added demands on existing faculty, which may further erode quality of work life by increasing workload and role burden.

1.2   STATEMENT OF THE PROBLEM

Previous research on pharmacy faculty quality of work life lacks a thorough, well-conceived theoretical foundation, especially in critical areas such as work satisfaction and turnover intentions. As such, while some significant differences have been observed, much of the variance in these phenomena remains unexplained, and the results of previous research may have limited utility for school of pharmacy administrators and faculty. Self-efficacy for teaching and research are constructs that have been found to impact productivity, but have not been examined among pharmacy faculty.

The empirical investigation into the relationships among pharmacy faculty quality of work life variables is the first step to understanding critical issues in the academic pharmacy workforce. Administrative strategies to create a departmental or institutional environment that fosters faculty satisfaction, commitment, and retention have little chance of success if the components of such constructs are unknown. Understanding faculty satisfaction and its composite domains is prerequisite to the development of or the change in an institutional environment or departmental ethos. Subsequently, the identification of factors that cause faculty to leave their jobs may allow for more targeted and effective faculty retention strategies.

The American Association of Colleges of Pharmacy (AACP) Council of Deans – Council of Faculties (COD-COF) Faculty Recruitment and Retention Committee has recommended that survey research should explore faculty manpower issues, specifically focusing on the impact of the overall pharmacy manpower shortages on faculty shortages and particularly on senior faculty departures.[10] The objectives of the current study are in

concert with what has been identified as a growing area of concern and need for examination.

1.3 PURPOSE AND OBJECTIVES OF THE STUDY

The purpose of the current study is to examine pharmacy faculty quality of work life issues including work satisfaction, job turnover, and self-efficacy. The specific objectives of the study are to:

1. Develop a comprehensive measure of pharmacy academician work satisfaction.

2. Determine the contribution of various organizational, situational, and demographic variables toward overall pharmacy academician work satisfaction and its various domains.

3. Identify factors associated with pharmacy academician job turnover intentions.

4. Identify factors associated with pharmacy academicians' teaching and research self-efficacies.

2.0   THEORETICAL FRAMEWORK

2.1   FACULTY QUALITY OF WORK LIFE

Faculty quality of work life has been studied using a variety of methodologies, and researchers have come to varied conclusions regarding what comprises its component constructs. The one tenet that researchers appear to agree upon is that quality of work life is a complex phenomenon, especially for university faculty given the autonomous nature of their work. Because of the complex nature of faculty work life, most examinations only aim to identify relationships between some components (variables) that comprise the quality of work life construct. Advances in structural equation modeling (SEM) techniques have allowed researchers to examine more complex models that are able to account for more of the existing variance shared between quality of work life variables. These studies were instructive in providing a framework for the examination undertaken in this study.

Possibly the most lucid framework for studying faculty work life has been reported by Johnsrud,[11] who conceptualizes work life studies into three distinct groups. The first group of studies, which makes up the majority of work life studies, seeks to describe the different domains of work life. Further, having identified and described a domain, these studies seek to explore differences among various groups of faculty based

on demographic (e.g. age, ethnicity, gender, academic rank) or institutional characteristics (e.g. institution size, type).[11] Examples of these studies include Johnsrud and Atwater, Aguirre et al., and Rice and colleagues,[12-14] which primarily address differences among male and female faculty, minority faculty, and faculty of varying academic rank, respectively.

A second group of studies does not seek to measure perceived quality of work life, but rather seeks to measure the impact of perceived quality of work life on attitudinal outcomes for faculty.[11] A researcher in this instance may seek to identify which domains of work life impact satisfaction, stress, or self-efficacy. Possible work life domains may include workload, department environmental factors, or perceived level of institutional support.[15] Lease examined the role of occupational role stress, coping, and support as predictors of strain in new and female faculty.[16] Lease, after identifying the impact of the work life domains (i.e. role stress, coping, support) on an attitudinal outcome (i.e. strain), proceeds to attempt to identify differences among groups (i.e. new and female faculty versus their senior and male counterparts) on the specific attitudinal outcome (i.e. strain).[16] Hagedorn examined the role of retirement proximity (work life domain) in predicting satisfaction in faculty (attitudinal outcome).[17]

A third group of studies attempts to identify aspects of work life that are linked to attitudinal outcomes and to determine the extent to which the specific attitudes are related to behavioral outcomes such as future employment intentions or productivity.[11] These studies often attempt to test multi-level models of the suggested relationships and may employ advanced statistical methods such as SEM or path analysis. Typical of these studies is a causal model of faculty turnover intentions proposed by Smart[18], which

addresses the impact of satisfaction and work environment conditions on turnover, and Barnes and colleagues'[19] examination of the impact of stress on faculty turnover intentions.

Johnsrud's classification system for faculty quality of work life studies aids in helping to understand the nature of the problem under examination; however, such a classification system is not exhaustive, and it is noted that there likely exists other conceptualizations or posited relationships that are largely dependent upon the theoretical or disciplinary association of the researcher conducting the work.[11] However, Johnsrud's conceptualization is certainly the most comprehensively constructed system for classifying work life studies that exists thus far.

To date, the pharmacy literature contains only a paucity of information on faculty quality of work life. Individual studies have sought to examine attitudinal outcomes such as satisfaction[7] and burnout[20] among samples of faculty, but such studies have not been conducted with the objective of understanding the relationships that the unique constructs have with other quality of work life domains or behavioral outcomes, such as productivity or employment intention. Additional studies have examined faculty development in samples of pharmacy academicians, specifically focusing on junior faculty.[21, 22] While faculty development may act as a correlate of administrative or institutional support, the reported findings to do not allow for the inference of relationships between the level of support and specific attitudinal or behavioral outcomes.

2.2   WORK SATISFACTION

Work satisfaction is conceptualized to consist of at least two domains: an intrinsic domain and an extrinsic domain.[23, 24] The intrinsic components of work satisfaction include intangibles such as one's need for self-growth and recognition and their valuation of autonomy. The extrinsic components of work satisfaction include environmental working conditions (i.e. perceived institutional support), salary, and job security. As such, the use of a one-item, global measure cannot capture the appropriate complexity in the work satisfaction construct. Although single-item measures of work satisfaction are common throughout the education literature, it has been argued that such global measures may be applicable only in situations wherein a construct is unidimensional, clear to the respondent, and sufficiently narrow.[25] The reliability of such measures is also questionable.[26] Additionally, the practical implications or application of such measures are limited.

Some researchers have employed relatively generic, albeit widely used and reliable instruments such as the Job Description Index (JDI) and the Minnesota Satisfaction Questionnaire to measure work satisfaction among university faculty.[27, 28] For example, evaluations of nursing faculty found that those faculty surveyed were relatively satisfied with domains such as the work itself, supervision, the job in general, and coworkers, but not with salary and opportunities for promotion.[29, 30] However, the utility of such instruments in accurately measuring work satisfaction among academicians in health professions is questionable, at best. A primary problem is that the instruments were developed and originally worded to reflect the job requirements of an hourly worker rather than a salaried professional.[27, 28] Additionally, the autonomy inherent in faculty

work may result in favorably skewed responses on items measuring intrinsic job components. Moreover, such measures fail to capture the complexity in academics' responsibilities, making it difficult to apply the results in a meaningful way. An instrument measuring faculty work satisfaction, therefore, must be designed in a fashion specific to the unique job requirements and work environment encountered by university faculty.

Following this line of reasoning, some researchers have attempted to measure work satisfaction among faculty by compartmentalizing their primary role functions. Rosser[31] and Maple and colleagues[32] measured faculty work satisfaction by examining the benefits accrued from serving in the expected teaching, scholarship, and service roles. Latif and Grillo[7] performed a similar study among a sample of junior pharmacy faculty using an adaptation of a faculty satisfaction questionnaire reported by Serafin[33] that focused solely on teaching, research, and service activities.

Blackburn and Aurand[34] suggest, however, that satisfaction is not derived purely from performing roles, but more so the environmental contexts within which they are performed, such as the clarity of expectations accompanying the roles. Consequently, measures which assume that satisfaction is derived wholly from performing a role function do not account for factors like interpersonal interactions, relationships, expectations for growth and advancement, pecuniary rewards, and the dissonance between expectations and realities faced in the job. Reported findings by Matier[35, 36] in two separate studies of faculty attrition and migration among limited faculty samples confirmed Blackburn and Aurand's conclusions about the importance of environmental factors. However, later work by Matier[37] and more recent work by Houston and

9

colleagues[38] have concluded that both environmental factors and the manner in which role functions are performed contribute to overall work satisfaction. Specifically, Houston and colleagues[38] identified specific domains such as autonomy, expectations of work performance and promotion criteria, departmental morale, and institutional support for scholarship as being important in contributing to faculty work satisfaction. Cadman[39] similarly reported the importance of environmental factors in contributing to faculty work satisfaction in a study of academic physicians.

The oft-cited work of Herzberg argues for the presence of various motivator–hygiene factors that individuals experience within organizations.[23, 24] Motivators refer to intrinsic components of the job such as self-growth and actualization. What Herzberg termed "hygiene", or the extrinsic components of one's work, includes the contextual or environmental aspects of work life that tend to be driven by organizational issues, such as one's relationships with administration and/or colleagues, perceived institutional support, and agreement with organizational policies and procedures. While Herzberg's research was not conducted among academicians, Rosser's[31] application introduces additional domains that may impact an academician's work satisfaction.

Matier[37] applied March and Simon's[40] decision-making theory to faculty retention, examining aspects of satisfaction such as congeniality with colleagues and rapport with administration; and Smart[18] examined satisfaction in the context of organizational, salary, and career domains. The intention of these studies, while useful in describing domains that may impact an academician's work satisfaction, was to examine faculty retention and work life in general, and they did not produce a quantifiable measure of academicians' satisfaction with work.

Many researchers have turned their attention to the satisfaction of specific groups, including women and minorities. The primary contention made by researchers is that the culture and climate in academia places such groups at a disadvantage because of a disproportionate rationing of resources necessary for them to productively fulfill their role functions.[41] Using Hagedorn's conceptual framework [42], which incorporates a number of satisfaction-related variables divided into two categories – mediators (environmental conditions and motivator/hygiene factors) and triggers (changes or transfers) – to evaluate faculty satisfaction, August and Waltman[41] reported on the career satisfaction of women faculty, identifying fair tenure practices, departmental climate, disparate workload, and professional productivity as important domains in determining a female faculty member's satisfaction. Additionally, the environment within academic departments may marginalize or isolate women or minority faculty, leaving them struggling with achieving personal fulfillment that comes with developing interpersonal relationships within the work environment.[13, 43]

Studies examining academicians' work satisfaction in the pharmacy literature are scarce. Latif and Grillo examined satisfaction among a sample of junior pharmacy faculty using a multiple-item measure soliciting respondents' perceptions of satisfaction with various roles comprising teaching, scholarship, and service domains.[7] As previously described, this approach excludes other factors that may impact work satisfaction. Further, Latif and Grillo's measure exhibited questionable discriminant validity to distinguish it from a measure of stress they employed in the same study. Jackson and colleagues[20] also used academic role functions to identify sources of burnout among pharmacy faculty, but did not seek to measure work satisfaction specifically.

11

Nair and Gaither examined pharmacy faculty life satisfaction, specifying

relationships between work and non-work domains.[44] The study focused primarily on the

impact of non-work domains on satisfaction, but also found that faculty members were

modestly satisfied with the collegial atmosphere in which they worked. While important

in contributing possible components comprising pharmacy academician work

satisfaction, Nair and Gaither's study was exploratory and did not seek to develop a

comprehensive measure of satisfaction. A study has not been conducted to date in a

sample of pharmacy faculty that has employed a comprehensive measure of work

satisfaction.

2.3   JOB TURNOVER INTENTIONS

Turnover among faculty has been examined in a number of academic fields of

study. In the general education literature, Johnsrud[11] found that that lack of time to keep

up with one's discipline and perceived lack of institutional support are responsible for

decrements in organizational commitment among faculty, which in turn has implications

for turnover intentions. The mediating effect of organizational commitment on turnover

intention has been reported in previous research examining job turnover in other

careers.[45, 46] Many of the antecedents of turnover intention may be mediated by

organizational commitment; however, there are many studies that have identified

variables that may also have direct effects on turnover intention.

Additional studies by Johnsrud and colleagues[47, 48] examining the impact of

morale and anomie on turnover posit that the organizational and departmental climate

fostered by administrators is of critical importance when examining faculty turnover. This corroborates findings by Smart[18], who observed greater contributions by organizational characteristics, such as work environment (i.e. perceived institutional support) and resultant job satisfaction, than individual faculty situational characteristics, such as tenure status and age, on faculty turnover intentions. Other quality of work life variables, such as stress, have demonstrated inconsistent effects, primarily because they may be more related to satisfaction and productivity, and less so to turnover intentions directly, as many faculty realize that the stress of changing jobs and resultant challenges in the new position may be even more problematic.[19]

Matier's examination of job turnover among university faculty used a push-pull metaphor to explain the turnover intentions of faculty in his sample.[37] It was proposed that both internal (e.g. autonomy, salary, organizational policies and procedures, fringe benefits) and external factors (e.g. non-work related quality of life, family responsibilities, financial situation) were critical in determining a faculty member's turnover intentions and Matier concluded that, while both internal and external factors play a role in turnover, the internal push is more operative than the external pull.[37] In other words, faculty are often prompted to leave their institution because they are unhappy or dissatisfied with their current work environment, and not because they are lured by the proposition of an external offer that would enhance their non-work related circumstances.

Zhou and Volkwein[49] considered the findings of Smart[18] and Matier[37] to propose a structural model that also included institutional characteristics and demographic data (e.g. minority status, financial situation, academic rank, and doctoral degree). They used

the National Survey of Post-Secondary Faculty – 1999 (NSOPF-99), which provided a significantly larger sample population and allowed for comparisons between tenured and non-tenured faculty.[49] The conclusions corroborated Smart's work, with additional variables proving significant (e.g. institution size, workload, academic rank) in Zhou's model; however, the relationships were so weak as to not improve over Smart's to a significant extent (R^2 = 0.15 and 0.13, respectively).

A faculty member's prognosis for success also has been demonstrated to be impacted by intradisciplinary consensus (level of agreement on teaching, research, and organizational policies and procedures) among colleagues.[4] Faculty in low consensus disciplines face additional hurdles to productivity that stem from gaps in communication, higher manuscript rejection rates, fewer resources, less popular teaching strategies, and conflict in determining standards for good scholarship.[4] Faculty in low consensus environments obtain less extramural funding, earn lower salaries, and have greater difficulty becoming acclimated to the teacher/scholar role than do their colleagues in high consensus disciplines.[4] This has been demonstrated to manifest into greater stress and greater turnover intentions.[50]

There is evidence to support higher turnover intentions among women and minority faculty, who often experience marginalization and insensitivity en route to more frequent denial of promotion and tenure.[13, 41, 51-53] A report by Svarstad and colleagues[54] examined the status of women in pharmacy education and identified discrepancies between men and women faculty with respect to time to promotion, salary, and recognition for research achievements.[54] Their review of the literature reiterated previously identified problems and barriers to advancement for women, such as

marginalization at the department level, the assumption of additional family responsibilities compared to males, and gender schemas, or nonconscious beliefs about sex differences that affect expectations of certain individuals in regards to their performance as a professional.[54] Settles and colleagues[43] used deficit theory[55], which posits that there exist formal structural mechanisms, or deficits, that provide women with fewer opportunities and more obstacles to career development. They reported that negative gender-related experiences (i.e. sexual harassment and discrimination) strongly influence their satisfaction and subsequent retention.

Few studies have examined turnover intentions among pharmacy faculty. Overall life satisfaction[44] and job satisfaction[7] among pharmacy faculty have been observed to be possibly contributing to pharmacy faculty turnover intentions; however, a faculty member's level of work satisfaction does not necessarily lead to turnover intentions or behavior directly. Carter and colleagues[56] employed a retrospective examination of American Association of Colleges of Pharmacy (AACP) published rosters between 1996 and 2001 to identify differences in actual turnover rates by faculty gender and discipline. While useful, retrospective data analyses say relatively little about attitudinal and organizational influences on turnover intention and may not be instructive for administrators in establishing policies or programs whose aim is to improve faculty retention.

The AACP has repeatedly addressed concerns over the acute and potentially worsening workforce shortage in pharmacy academe and has offered recommendations for improving faculty recruitment and retention efforts.[9, 10] Recommendations have included the protection of faculty autonomy, encouraging research productivity through

various mechanisms such as protected research time, and formal faculty development programs that provide junior faculty with the proper guidance and resources to succeed in an academic career.[10] Implementation of each of the recommendations is thought to create academic environments that foster faculty retention in schools of pharmacy.

2.4   SELF-EFFICACY

Self-efficacy is a construct that indicates one's confidence in their ability to perform a certain task. By definition, it is a context-specific assessment of competence to perform a specific task or a range of tasks in a given domain.[57, 58] Self-efficacy beliefs can be determined by four main sources of influence including mastery experiences, vicarious experiences provided by social models, social persuasion, and an individual's own somatic and emotional experiences.[57] Bandura[59] contends that self-efficacy beliefs mediate the effect of skills and self-beliefs on subsequent performances through an influence over effort, perseverance, and persistence. In other words, increases in self-efficacy are likely to translate into increases in productivity or performance for a given domain of tasks. This tenet has been confirmed in subsequent examinations across various fields of study, including academic performance among students and teaching and teacher education.[60]

As it applies to university faculty, self-efficacy can be expressed as an academician's confidence in performing given sets of activities that comprise their primary role functions of teaching and research. While service is also considered a primary role function for faculty, productivity in this domain is seldom given similar

weight, as productivity in teaching or research and self-efficacy in this domain is sparsely addressed in the literature. Thus, the objectives of this study will solely focus on self-efficacies for teaching and research activities.

It should be noted that many of the studies examining teacher self-efficacy do not occur in post-secondary faculty. However, the teaching activities of elementary, secondary, and post-secondary faculty differ little in their theoretical foundation. For example, all teachers attempt to foster student creativity, help students value learning, and must respond to difficult questions from students, no matter the age or intelligence of the learner in question.

Denham and Michael[61] proposed a model of teacher efficacy that conceptualized teacher efficacy as a mediator of teacher effectiveness and consequent student achievement. The model posited that self-efficacy was comprised of two dimensions that correspond with those defined by Bandura[62]. The first dimension is identified as efficacy expectations, which is defined as the teacher's belief that they can successfully execute the behavior necessary to produce an outcome. The second dimension is labeled outcome expectations, which is defined as the teacher's estimation that a given behavior will lead to certain outcomes.[62, 63] Denham and Michael[61], in concordance with Bandura's[59] main sources of efficacy, identified antecedent conditions for self-efficacy including teacher training (vicarious experience), teaching experience (mastery experience), system variables such as career ladders, personal challenge, and support (social persuasion), and personal variables (somatic and emotional experience). This would suggest that variables such as age (or career age), academic rank, perceived institutional support, and departmental or intradisciplinary consensus on teaching-related issues may play a role in

17

determining an academician's sense of teaching self-efficacy. Denham and Michael[61] further assert that self-efficacy has measurable effects on consequences such as professional teaching activities, professional retention, achievement outcomes, and support of innovation.

Prieto and Altmaier[63] examined self-efficacy among a sample of graduate teaching assistants and their results concur with Bandura's self-efficacy theory, in that graduate teaching assistants become more confident in their ability to execute teaching-related tasks when they receive training or as their experience grows. These findings corroborate previous work by Bray and Howard[64], which identified teacher training as an antecedent to increases in self-efficacy.

In an attempt to create a new measure of teacher self-efficacy, Tschannen-Moran and Hoy[65] studied separate samples of pre-service and inservice teachers. The final instrument, labeled the Ohio State Teacher Efficacy Scale (OSTES), was comprised of three domains, including efficacy for instructional strategies, efficacy for classroom management, and efficacy for student engagement. Previous measures of teaching self-efficacy were found to cover a wide variety of activities and were of variable validity and reliability. A measure proposed by Gibson and Dembo[66], which factor analysis procedures later identified to have factor loading issues and inconsistencies across studies, was later shortened to 16-item and 10-item versions by Soodak and Podell[67] and Hoy and Woolfolk[68], respectively. A 5-item measure by Midgley and colleagues[69] adapted items from 3 different scales, in which validity and reliability had not been assessed. Lastly, Tschannen-Moran and Hoy[65] identified an unpublished, undated teacher self-efficacy scale authored by Bandura that contained seven subscales, including

efficacy to influence school resources, instructional efficacy, efficacy to influence

decision making, disciplinary efficacy, efficacy to enlist parental involvement, efficacy to

enlist community involvement, and efficacy to create a positive school climate. As some

of the domains in this instrument do not address the teaching activities of college

professors, it was not identified as a viable instrument for inclusion in the current study.

However, its domains that elude to influences over (departmental) decision-making and

school resources offer another potential domain of teaching self-efficacy that may apply

to university faculty, yet has been sparsely addressed in other literature, to date.

Research self-efficacy is a construct that indicates an individual's confidence in

their ability to perform research-related activities. This construct is of increasing

importance as it is believed to play a role in predicting, or potentially directly

contributing to research productivity. Bandura[59] contends that judgments of capability

(i.e., research self-efficacy) matched to a specific outcome allow for the best prediction

and explanation of behavioral outcomes (i.e. research productivity). The same theoretical

outlook was reiterated by Parajes[60] in his review of self-efficacy in academic settings.

The most comprehensive description of what constitutes the domain of research-

related activities was reported by Forester and Kahn.[70] The authors conducted an

exploratory factor analysis that identified four dimensions of research self-efficacy (data

analysis, research integration, data collection, and technical writing) that represent items

from three previously reported research-self-efficacy instruments. Their contention was

that research self-efficacy may not be a single item construct, but that efforts to improve

research development among faculty may benefit from examining the four domains

separately and tailoring their programs accordingly.[70]

19

As was the case in Forester and Kahn's[70] analysis, many studies of research self-efficacy have examined the construct in samples of graduate or doctoral students. Paglis, Green, and Bauer[71] examined the effect of faculty advisor mentoring on doctoral student research productivity and self-efficacy. They concluded that the "positive benefits of mentoring were found for subsequent productivity and self-efficacy".[71] However, mentoring was not necessarily associated with a commitment to a research career. Another examination of research interest among doctoral students[72] found that self-efficacy accounted for a non-significant amount of variance in research interest, however, the study employed a correlational design and could not identify a specific causal relationship between the two constructs. The same study also examined a sample of faculty in which self-efficacy did explain a significant amount of variance in research interest.[72] It was proposed that self-efficacy may be mediated by a construct that the investigators referred to as "outcome expectation", which accounted for a large percentage of variance in research interest.

Major and Dolly[73] conducted a qualitative study of newly hired education faculty and observed an overwhelming impact of graduate training experiences on current self-efficacy. Such findings corroborate Bandura's[62] theory of self-efficacy formation which states that self-efficacy is often formed through mastery and vicarious experience through social models. Graduate degree programs and faculty training and development programs are therefore likely to be strong influences in forming one's self-efficacy beliefs.

Bailey[74] noted in a sample of Australian faculty that low research productivity was associated with low self-efficacy and low motivation to conduct research. While

these findings are consistent with previous research, Bailey's study had a low response rate that significantly hindered his ability to make definitive conclusions.

As with other work life variables, studies of research self-efficacy have sought to identify differences among groups of faculty. Valis[75] found that male faculty report greater self-efficacy for research, more time spent in research, and greater research productivity than female faculty. Schoen and Wincour[76] reported differences among faculty by gender and academic rank across a variety of teaching, research, administrative, and miscellaneous academic tasks. Junior faculty and female faculty reported lower self-efficacies. A study by Landino and Owen[77] similarly observed lower research self-efficacy among female faculty. More recently, a report on the status of women in pharmacy academe[54] concurred with such findings, highlighting a need for institutions to improve faculty development programs that will narrow gaps between male and female faculty in a variety of areas including productivity.

Self-efficacies have been evaluated among many stakeholders in pharmacy, including patients, pharmacists (as practitioners and preceptors), and students; however, there has yet to be a comprehensive evaluation of teaching or research self-efficacies among pharmacy academicians.[78-80]

3.0   METHODS

3.1   LITERATURE SEARCH

An extensive review of the pharmacy and education literature was conducted during the spring and summer of 2005 to examine the relationships among quality of work life variables and to identify previously validated instruments useful for measuring the constructs comprising the study. The primary constructs of interest for this study were work satisfaction, turnover intentions, and self-efficacy; however, a number of other variables were included in the survey as they were thought to be theoretically related to the primary constructs of interest. Moreover, the current study was undertaken as part of a more comprehensive evaluation of quality of work life and productivity issues. The search was conducted on International Pharmaceutical Abstracts, Medline (PubMed), CINAHL, ERIC, PsycINFO, and Social Sciences Index databases and employed the following terms: [job, work, career] satisfaction, faculty, academia, academicians, quality of work life, stress, burnout, turnover [intentions], self-efficacy, confidence, [institutional, administrative] support, [employer, organizational] commitment, [research, scholarly] productivity, publication, teaching [effectiveness, evaluation], [teaching, research] nexus, complimentary, and workload. Information was sought from editorials, commentaries, and review articles in addition to reports of empirical studies. The search

was expanded to include other articles not found in the initial review but referenced in the articles uncovered in the initial review. There were no time (date of publication) restrictions placed on the search. The literature search resulted in the construction of a draft theoretical model that was the basis for the inclusion of certain variables in the study, but which was not tested in total (Appendix A).

3.2   STUDY VARIABLES

The complete survey questionnaire is available as Appendix B. The appendix contains each of the measures and a list of the items that comprise them.

3.2.1   Work Satisfaction

Upon the extensive review of the literature, an appropriate scale to measure pharmacy academician work satisfaction for the purposes of this study was not identified. However, the literature review assisted in the generation of an initial list of 36 items as theoretically being important in determining a pharmacy academician's work satisfaction.

A modified Delphi procedure was conducted to refine the list of 36 items for criterion-related validity. A modified Delphi procedure was selected as it was "necessary to choose among several alternative courses of action in the absence of an accepted body of theoretical knowledge that would clearly single out one course as the preferred alternative."[81] Further, a Delphi procedure avoids the biases inherent in face-to-face meetings, such as with focus groups. It involves repeated iterations of opinion

questionnaires with the expectation of a convergence in opinion.[82] Modifications to a formal Delphi procedure were made due to the identification of a set of items that were thought to be theoretically predictive of work satisfaction in the initial literature review. Therefore, an initial survey eliciting such items was unnecessary.

A convenience sample (panel) of twenty pharmacy faculty varying by discipline and by institution was selected to participate in the modified Delphi procedure. A questionnaire containing the initial 36 items (Appendix C) was sent via e-mail to the faculty panel in April 2005. The panel was asked to indicate the degree to which each of the items contributed toward a pharmacy faculty member's work satisfaction at any institution. They were instructed to base their judgments on the items' importance to the construct, and not on how satisfied they were with that aspect of their current position. Participants were asked to assign a level of importance to each of the 36 items on a Likert-type scale ranging from 1 (not important at all) to 7 (extremely important). A comment section was appended to the questionnaire wherein participants were encouraged to submit additional items/factors that might significantly contribute to a pharmacy faculty member's overall job satisfaction that were not included among the original 36-items. Sixteen of the invited participants provided a response to the questionnaire and, based on the comments they provided, the investigators generated four additional items that addressed departmental collegiality both at and outside of work, merit-based rewards, and salary issues.

A second round of the modified Delphi procedure was undertaken for participants to respond to the newly proposed items and to respond to open-ended questions about how to handle certain dilemmas that arose during the process (i.e., how to phrase certain

24

items, whether to combine or disentangle other items). Fifteen of the participants

provided additional feedback, further aiding in the construction and selection of items

ultimately comprising the measure. Twenty-five items met a priori criteria that the

Delphi panel's responses be equal to or greater than mean and median values of 5.0 (out

of 7). Scale item responses for the resultant work satisfaction scale were measured on a

6-point Likert-type scale ranging from 1 (extremely dissatisfied) to 6 (extremely

satisfied).

3.2.2   Turnover (Future Employment) Intentions

Future employment intentions were measured using a single-item question

requesting that respondents indicate whether they intended to stay at their current

institution, leave their current institution, or leave academia altogether within the next

two years. The predictive validity of similar single-item measures for turnover intentions

has been established.[47] Respondents also were asked to indicate up to 5 reasons for their

decision to remain or leave.[45, 83] The lists of reasons to remain or leave contained 20 and

23 items, respectively, and were developed from the initial literature review and the input

of several faculty from various pharmacy disciplines. The 23 putative reasons to leave

covered a broad range of issues, such as failure to achieve tenure/promotion, excessive

workload, relationships with colleagues, relationships with administrators, lack of a

graduate program, family responsibilities, and retirement. The 20 putative reasons to

remain largely mirrored the reasons to leave, and included items such as freedom in work

(autonomy), no desire for change, job security, research support, and teaching support.

3.2.3 Self-efficacy for Research

Self-efficacy for research was measured using a 20-item scale adapted from a factor analysis of 58 research activities reported by Forester and Kahn[70] who compiled 107 items from three separate research self-efficacy scales: the Research Self-efficacy Scale (RSES)[84, 85], the Self-efficacy in Research Measure (SERM)[86], and the Research Attitudes Measure (RAM)[87]. The resultant 58-item measure included only those items with a factor loading greater than 0.5 on a single factor. Items for the research self-efficacy scale used in this study were generated by further limiting the items from the factor analysis to only those with a factor loading of greater than 0.7 on a single factor, as a means of making the current measure a more parsimonious one. The 27 items meeting the factor loading criterion were then subjected to a review by a panel of pharmacy faculty from varying disciplines and institutions. Suggestions were made to eliminate items that were not perceived to fit the research activities of pharmacy faculty (i.e. "writing the introduction and literature review for a thesis"), as some of the items from the three original instruments were meant to examine the research self-efficacy of graduate students. Other suggestions included the combination of similar appearing items and the rewording of other items to eliminate item ambiguity, resulting in the 20-item measure used in this study.

Respondents were asked to indicate a level of confidence in executing each of the 20 activities on a scale ranging from 0 = no confidence at all, to 100 = extraordinary confidence.[88] The web-based survey logic did not allow a respondent to omit the evaluation of an individual item nor did it allow them enter a value greater than 100. Although a respondent may not have currently been participating in a given activity, the

measure was designed to assess their confidence in doing so if given the opportunity to participate in the activity.

3.2.4   Self-efficacy for Teaching

Self-efficacy for teaching was measured on a 17-item scale adapted from the Ohio State teacher efficacy scale (OSTES).[65] The OSTES is available in its original state as a 24-item long form and a 12-item short form. The OSTES was originally compiled from an analysis of three other self-efficacy instruments including a 2-item measure employed by Rand researchers based on a theory proffered by Rotter[89], the Responsibility for Student Achievement scale (RSA)[90], a 30-item measure reported by Guskey[91], and the 28-item Teacher locus of control (TLC) scale[92]. As the OSTES was intended to measure the efficacy of secondary school teachers, some of the items did not apply to the teaching activities of post-secondary university faculty in a health science field of study. Therefore, the 24-item long form was adapted, and the items that did not fit the teaching activities of pharmacy faculty were removed (e.g. "How much can you assist families in helping their children do well in school"). The 12-item short form was not used, as it did not include potentially important items such as fostering student creativity and gauging student comprehension of what has been taught.

As with the research self-efficacy scale, the adapted teaching self-efficacy scale was reviewed by a panel of pharmacy faculty who suggested wording changes to the items to make them appropriate, clear, and concise for use in a sample of pharmacy faculty. Confidence in performing the resultant 17 teaching activities was measured on the same 101-point scale as were the research self-efficacy items.[88]

3.2.5 Organizational Commitment

Organizational commitment was measured using a 14-item, 5-point scale of agreement (1 = Strongly Disagree to 5 = Strongly Agree) adapted from a scale previously validated by Porter, et al.[93] Understanding that schools or colleges of pharmacy are generally referred to as academic institutions, in each item containing the word "organization", the word "organization" was changed to "institution" to more closely represent the work environment of pharmacy faculty. Additional wording changes were made to items to clarify that they were to be answered in the context of work and work performance and not to be misconstrued as alluding to non-work environment related circumstances. For example, the item "This institution really inspires the very best in me" was changed to "This institution really inspires the very best in me in the way of job performance".

3.2.6 Job Stress

Job stress was measured using a 9-item, 6-point, Likert-type scale (1 = minimal stress to 5 = considerable stress). Six of the items were adapted from a faculty stress index reported by Gmelch[94], and 3 other items assessed stress emanating from fulfilling teaching, research, and service role functions. The identification of role fulfillment and workload as a source of stress for university faculty has been reported in a number of studies in varying academic disciplines.[7, 20, 95-97] The faculty stress index reported by Gmelch identified six domains contributing to stress among university faculty: reward and recognition, time constraints, departmental influence, professional identity, and

student interaction.[94] One item was constructed to represent each domain of faculty stress except for the reward and recognition domain, which was assigned two items: "attaining reward and recognition" and "making a name for myself among colleagues in my discipline".

3.2.7 Institutional Support

The measure of institutional support was adapted from one reported by Eisenberger and colleagues and was comprised of 14 items on six-point scales of agreement (1 = strongly disagree to 6 = strongly agree).[46] For each item, the term "employer" was changed to "college/university" to customize the scale for the target population. Additionally, the item stating "My employer values my contributions" was removed but provided the impetus for three additional items, including "My college/university values my teaching contributions", "My college/university values my research accomplishments", and "My college/university values my service contributions". This was revised to adequately address the role functions of a pharmacy academician.

3.2.8 Dean and Department/Division Chair Support

Perceived Department/Division Chair support and perceived Dean support were each measured on global, one-item assessments on four-point scales (far less than adequate, less than adequate, adequate, exemplary).

3.2.9   Intradisciplinary Consensus

Intradisciplinary consensus was measured using a previously validated scale reported by Desselle and colleagues.[2] Two unique domains of intradisciplinary consensus (consensus on teaching issues and consensus on organizational policies and procedures) were examined using 11 items scored on a 5-point scale ranging from -2 (considerable disagreement) to +2 (considerable agreement). The scale was recoded to 0 = considerable disagreement to 4 = considerable agreement for data analysis purposes. The above two domains, when combined, are referred to as the "consensus basic" construct within the intradisciplinary consensus measure. A third domain of intradisciplinary consensus, consensus on graduate programming issues, was examined using an additional 5 items on the same 5-point scale.[2] The consensus on graduate programming issues domain items were only completed by those faculty members whose institution had a graduate program. The presence of a graduate program was assessed using a single item eliciting the presence of a graduate program at the respondent's institution.

The consensus basic construct in this study measures perceptions of the department's similar views on scholarship, governance, and teaching entry-level degree program students, while the consensus graduate construct (the domain measuring consensus on graduate programming issues) deals with issues related to graduate programming, including the oversight and mentoring of teaching and research assistants.[2]

3.2.10 Research Productivity

There lacks any commonly agreed upon gold standard for the measurement of research productivity among pharmacy academicians. As such, research productivity was measured by asking respondents to indicate the number of original research and review articles that they have had accepted for publication in peer-reviewed professional journals since January 1, 2002. Respondents were asked to count only those articles which have been submitted and accepted (even if not yet in print) after January 1, 2002 and to exclude research that was solely published as part of the proceedings of a professional conference, as letters to the editor, commentaries, books or book chapters, drug monographs, or similar such publications. While the latter are acknowledged as being scholarly works, respondents were asked to exclude them for the purposes of this study. Similarly, grants, as measured in quantity or in gross dollar value were not used as a measure of productivity for this study. Counts of peer-reviewed publications have been reported to be highly correlated with many other measures of research productivity including grant-related activities.[98, 99]

3.2.11 Teaching Effectiveness

Compared with scholarly productivity, there is even greater debate as to what might constitute effective teaching. Faculty are most commonly evaluated through student opinion and through peer evaluation, each of which are subject to their own inherent biases and limitations.[100-102] Additionally, the criteria comprising these measures, their degree of quantification, and the indices used in scoring can vary from

31

one institution to the next. As such, teaching effectiveness was measured in this study by asking respondents to report their perceived level of effectiveness on seven teaching-related outputs (e.g. peer evaluation of teaching and student evaluations of my teaching in entry-level PharmD courses) in comparison to their departmental colleagues. Item responses were measured on a 7-item, Likert-type scale ranging from 1 (much less/lower than my departmental colleagues) to 7 (much more/higher than my departmental colleagues).

This novel methodology sought to identify those academicians who performed above their departmental average or produced more than their colleagues and those who performed lower or produced less. It is noted that this method of measuring teaching effectiveness relies heavily on the accuracy of self-reported data and has not previously been validated, but was considered based upon an extensive literature review identifying potential indicators of teaching effectiveness.[100-102] While every member within a department at a given institution may be a superior teacher, the scale sought to evaluate their comparative teaching effectiveness and not a gross score of general teaching prowess.

3.2.12 Belief in the Teaching/Research Nexus

The belief in the complimentarity of an academician's teaching and research roles (the "nexus") is thought to be associated with a number of quality of work life variables including research productivity and self efficacy for role-based activities.[103, 104] Essentially, believers in an existing nexus posit that productive research begets effective teaching and effective teaching begets productive research, or that the two are synergistic.

32

The opposing viewpoint states that time spent on one activity would detract from the other. This construct was measured via a single item that asked the respondent to indicate their level of belief in the nexus on a 7 point scale ranging from -3 (the two roles are conflicting) to +3 (the two roles are mutually reinforcing) with 0 representing that the roles are unrelated. For data analysis purposes the scale was recoded to 0 = the two roles are conflicting to 6 = the two roles are mutually reinforcing.

3.2.13 Demographic & Institutional Variables

Respondents were asked to report personal and institutional data including age, gender, race/ethnicity, academic rank, type of appointment (academic or calendar year), salary range, type of institution where employed (public or private), size of PharmD student enrollment, and whether they hold an administrative position. Respondents' discipline was acquired through self-report, rather than through the AACP Roster.

3.3   DATA COLLECTION AND SAMPLING

The study employed an anonymous, self-administered, web-based survey questionnaire (Appendix B) to elicit responses to a number of quality of work life variables from a national sample of pharmacy academicians. The faculty comprising the 4,228 persons with a valid e-mail address on file with the American Association of Colleges of Pharmacy 2004-2005 Roster of Faculty and Professional Staff[105] were eligible for inclusion in the study. Faculty members from each discipline of pharmacy,

including biological sciences, library sciences, medicinal chemistry, pharmaceutics, pharmacology/toxicology, pharmacy practice, and social and administrative sciences (SAdS) were eligible to receive the survey. The completion of the questionnaire and the submission of the responses via SurveyMonkey were evidence of consent to participate in the study. Study procedures received exempt status from the Duquesne University Institutional Review Board.

The survey was delivered via e-mail through the use of SurveyMonkey, a web-based survey hosting service. Modifications of procedures recommended by Dillman were employed to strengthen the rate of return.[106] The modified Dillman approach included a pre-notification e-mail (Appendix D) sent to the e-mail list during the last week of August 2005 followed by an e-mail one week later (September 6, 2005) with a brief cover letter and a link to access the survey (Appendix E). Reminder emails (Appendices F, G) to non-responders with a link to access the survey were sent approximately 4 and 6 weeks later (October 6th and 18th, respectively). The survey was closed for responses on November 11, 2005. Response data were subsequently downloaded from SurveyMonkey into an Excel spreadsheet and then transferred into SPSS 13.0 for analysis.[107]

3.4   DATA ANALYSIS

3.4.1   Work satisfaction scale development

Descriptive statistics were tabulated. Responding deans (n =5) were excluded
from each analysis procedure. Data were subjected to principal axis factoring to discern
the factor structure, and as such describe the latent domains comprising the satisfaction
construct. As recommended by Costello and Osborne[108] the data set was split randomly
in two sets of cases, with the first sub-sample factor analyzed to find a conceptually
plausible structure and the second serving as a validation sample. Relatively high
correlations were predicted to exist among the factors (domains); therefore, an oblique
rotation was applied to allow the factors to correlate and assist with interpretation of the
data.[109] The Kaiser criterion, which suggest including all factors with an eigenvalue
greater than 1 in the final model, and an examination of the scree plot, which seeks to
"identify the last substantial drop in the magnitude of eigenvalues"[110] were used to
discern the optimal number of factors. A value of 0.40 was established as the cut-off
point for significant factor loading, even though it has been argued that loadings as low as
0.32 are appropriate.[111]

The satisfaction measure was further examined and purified through the use of
procedures recommended by Nunnally,[111] including the calculation of item-to-total
correlations, the Cronbach's alpha for each domain, and the resulting Cronbach's alpha
pending removal of each item from the domain to assess internal consistency. Evidence
for the satisfaction measure's discriminant validity was sought by examining its
correlation with other quality of work life variables and comparing it to a hypothetical, or

35

predicted, value.[111] Stress was predicted to have a negative and statistically significant correlation with the measure of satisfaction, albeit low enough to evidence the uniqueness of the constructs. Additionally, teaching self-efficacy was predicted to have a low, potentially non-significant correlation with the satisfaction construct.

3.4.2   Identification of Predictors of Satisfaction Domains

Descriptive statistics were tabulated. The individual work satisfaction domains were regressed over the situational, demographic, and institutional study variables in six unique forward conditional linear regression procedures. A forward conditional procedure was selected due to the exploratory nature of the study. While the literature review identified potential antecedents of work satisfaction, the nature of the interaction between the given quality of work life variables and work satisfaction's latent domains was unclear.

The complete work satisfaction measure was likewise regressed over the same situational, demographic, and institutional study variables. Polychotomous nominal variables (e.g. academic discipline, academic rank) were decompartmentalized into unique dichotomous variables and dummy coded for analysis purposes (1 = selected, 0 = not selected). The questionnaire survey was designed so that each respondent could only select one academic discipline with which to be identified.

3.4.3 Identification of Predictors of Turnover Intentions

Descriptive statistics for the reasons to remain with the current institution, leave the current institution for another job, and reasons for leaving academia altogether were tabulated. Turnover intention, coded as "0 = intention to leave and 1 = intention to remain" was regressed over the independent situational and demographic study variables in a forward conditional (p value [F test] for entry = 0.05; p value [F test] for removal = 0.10) regression analysis procedure due to the potential for collinearity among the independent variables.[112] Respondents indicating intentions to leave academia, along with those indicating intentions to leave their current position for another academic institution were coded as "0". As previous research has identified organizational (employer) commitment as a mediator of turnover intention, [45, 46] commitment was entered in the first block of the initial regression analysis, followed by the remaining study variables.

Although not included in the initial planned methodology, the mediating effect of organizational commitment was predicted to prompt an additional forward conditional regression analysis to further define the relationship between the study variables and turnover intentions.

3.4.4 Identification of Predictors of Self-efficacy for Teaching & Research

Descriptive statistics were tabulated for each self-efficacy scale. Scale and item means were calculated to provide descriptive results on areas of high and low confidence for teaching and research self-efficacies among pharmacy academicians. Teaching and

research self-efficacy were regressed over the situational, demographic, and institutional study variables in unique forward conditional linear regression procedures (p value [F test] for entry = 0.05; p value [F test] for removal = 0.10).

4.0 RESULTS

4.1 RESPONDENT CHARACTERISTICS

Of the 4,228 surveys sent via email to the target population, there were 154 emails returned as undeliverable. Valid responses to the electronic survey were obtained from 885 pharmacy academicians (response rate = 22.72%). Judging from email inquiries received, the 4,228-person sample also consisted of a number of professional staff (i.e., administrative personnel who are mandated by the school to be members of AACP) without faculty positions.   These survey recipients were not considered eligible for the study, but were unable to be separated out from the rest of the AACP Roster. [105]

Respondents providing demographic information were primarily male, White, and from public institutions, with a mean age of 43 years (Table 1). Respondents were distributed fairly well in accordance to expectations regarding rank, gender, and race/ethnicity [113]; however, there were a disproportionately large number of respondents from the SAdS. This anomaly may be due in part to faculty in this discipline being more familiar with survey research methods and perhaps knowing the investigators personally and wanting to assist them. As the survey was completely anonymous, there was no means by which to determine the source of responses (e.g. by institution or geographic region).

Table 1. Demographics characteristics of the respondent population (n = 885)

Variable	N *	Percent
Gender		
Male	323	54.2
Female	273	45.8
Ethnicity		
Caucasian	523	83.4
Asian	30	4.7
Hispanic	18	2.9
African American	14	2.2
Other	11	1.8
Academic Rank		
Instructor/Lecturer	10	0.2
Assistant Professor	258	42.9
Associate Professor	196	32.6
Professor	137	22.8
Discipline		
Medicinal Chemistry	50	8.6
Pharmaceutics	45	7.8
Pharmacology/Toxicology	51	8.8
Pharmacy Practice	329	56.7
Social and Administrative Sciences	105	18.1
Type of Institution		
Public	417	69.3
Private	185	30.7
Appointment Length		
Academic (9 month)	98	16.2
Calendar (12 month)	507	83.8
Salary		
< $65,000	38	6.7
$65,000 - $75,000	127	22.3
$75,000 - $85,000	158	27.9
$85,000 - $95,000	122	21.5
> $95,000	122	21.5

*Reported numbers do not add up to 885 due to missing data.

4.2 WORK SATISFACTION SCALE

4.2.1 Factor analysis procedures

Principal axis factoring revealed a 6-factor solution. The solution was identified and subsequently confirmed by the split sample validity procedure that was employed. Confirmatory evidence included the placement of items within the same factor in each solution and similar factor loadings for each item on their respective factor (domain) for each solution. The resultant model explained 62.35% of the variance of responses to the satisfaction construct. The item, "secretarial assistance," did not successfully load on any of the six factors and exhibited poor item-to-total correlations with the existing factors. The item was thus removed from the scale and is not recommended for use in future scale applications.

The resultant domains and item compositions are shown in Table 2. The first domain, "resources for scholarship," consists of six items depicting that resources and departmental reputation contribute to satisfaction with fulfilling a faculty member's role as a scholar. The second domain, "supportive and equitable climate", consists of items depicting support from key administrators and the perceived adequate distribution of rewards such as salary.

Table 2. Scale domains, factor loadings, mean responses, and reliability

Factor (Domain)	Factor Loading	Mean[b]
Factor 1: Resources for scholarship (α = 0.817, overall mean = 3.80)[a]		
Available computer hardware/software to meet my research needs	0.534	4.56
Availability of time to pursue scholarship	0.544	3.18
Institutional support for research	0.666	3.37
Opportunities for collaboration with scholars outside of my department	0.635	4.36
My department's reputation for excellence in scholarship	0.578	3.96
Institutional assistance with seeking funding for my research	0.619	3.35
Factor 2: Supportive and equitable climate (α = 0.830, overall mean = 3.76)[a]		
General support from my department/division chair	0.440	4.28
General support from my dean	0.552	4.07
Institutional efforts in support of the career development of their faculty	0.579	3.68
Salary competitive with other schools of pharmacy	0.771	3.41
Distribution of rewards (i.e., salary) based on merit	0.779	3.36
Factor 3: Requirements for promotion and tenure (α = 0.785, overall mean = 3.91)[a]		
Clear understanding of the teaching requirements needed for tenure/promotion	0.802	4.22
The procedures used to evaluate a faculty member's teaching effectiveness	0.671	3.42
Clear understanding of the research requirements needed for tenure/promotion	0.673	4.10
Factor 4: Availability of a graduate program (α = 0.817, overall mean = 3.52)[a]		
The opportunity to mentor graduate students	0.713	4.15
The availability of competent graduate teaching assistants	0.851	3.14
The availability of competent graduate research assistants	0.855	3.28
Factor 5: Collegiality (α = 0.722, overall mean = 4.25)[a]		
Opportunities for collaboration within my department	0.680	4.46
Mutual respect for other's scholarly endeavors within my department	0.615	4.27
The social interactions among faculty within my department outside of work	0.799	4.02
Factor 6: Teaching environment (α = 0.673, overall mean = 4.68)[a]		
The freedom to design courses as I see fit	0.625	4.87
The quality of students admitted into our program	0.603	4.61
My teaching workload	0.509	4.20
The courses I am assigned to teach	0.702	4.95

[a] Cronbach's coefficient alpha.
[b] Measured on a 6-point scale where: 1 = extremely dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied; 4 = slightly satisfied; 5 = moderately satisfied; 6 = extremely satisfied.

Items comprising the third domain, "requirements for promotion and tenure", consist primarily of perceived appropriateness and transparency in the criteria used to evaluate faculty in the promotion and tenure process. Items comprising the fourth domain, "availability of a graduate program", depict the availability of graduate students to assist with teaching and research, along with coincident opportunities to mentor them. The fifth domain, "collegiality," pertains to the nature of interactions with department colleagues both within the work environment and outside of it. The sixth domain, "teaching environment," consists of items describing the teaching environment in which the respondent performs including the perceived quality associated with the activities as well as the quantity of responsibilities comprising their workload.

The relatively high factor loadings (> 0.40 for each retained item), the lack of cross-loading by items onto more than one domain, and the seemingly logical groupings of items into their corresponding factors (domains) provide evidence of the scale's convergent validity. Discriminant validity was evidenced by correlations with other variables, such as stress and teaching self-efficacy, which were in accordance with a priori estimated values. Such evidence indicates that the measure used to assign values to work satisfaction was distinct among other construct measures. A correlation matrix examining the relationships between the individual satisfaction domains and other quality of work life variables is shown in Table 3. Cronbach's alpha values ranged from 0.673 to 0.830, indicating relatively high degrees of internal consistency reliability among items comprising each domain. The Cronbach's alpha values for each domain are shown in Table 2.

Table 3. Correlation matrix of the relationships between the satisfaction domains and other quality of work life variables

	Support for scholarship	Institutional support and reward	Requirements for promotion and tenure	Graduate program issues	Collegiality	Teaching issues
Teaching self-efficacy	0.084	0.012	0.115	0.060	0.033	0.042
Research self-efficacy	0.216	0.038	0.207	0.163	0.007	0.063
Research productivity	0.215	0.047	0.149	0.203	0.000	0.052
Organizational commitment	0.554	0.641	0.432	0.255	0.431	0.499
Stress of role fulfillment	-0.304	-0.150	-0.179	-0.109	-0.119	-0.230
Stress of accomplishment	-0.129	-0.126	-0.212	-0.027	-0.152	-0.218

Mean responses to each item and domain are shown in Table 2. Responding faculty expressed the greatest degree of satisfaction with the courses they are assigned to teach, their freedom to design courses, the quality of students they teach, available computer resources to meet their research needs, and opportunities for collaboration within their departments. Faculty reported less satisfaction with the availability of competent graduate assistants, availability of time to pursue scholarship, institutional assistance with seeking funding for research, and distribution of pecuniary rewards. The composite domain eliciting the highest level of satisfaction was "teaching environment," and that which elicited the lowest level of satisfaction was "availability of a graduate program".

4.2.2 Regression analyses

There were a total of 9 variables explaining 53.6% of the variance in satisfaction with resources for scholarship, including: institutional support, stress due to lack time to complete work activities (negative), department chair support, intradisciplinary consensus on teaching issues, organizational policies and procedures, and graduate program issues, self-reported membership in the medicinal chemistry discipline, and male gender. The results of the regression analysis are shown in Table 4.

Table 4. Forward conditional linear regression of the resources for scholarship domain.[†,‡]

Study variable	Std. Beta	R^2 Change	Sig. F Change
Institutional support	0.294	0.317	< 0.001
Type of institution	0.194	0.057	< 0.001
Stress due to lack of time	-0.201	0.052	< 0.001
Department Chair support	0.173	0.043	< 0.001
Gender	-0.089	0.020	< 0.001
Intradisciplinary consensus (graduate program)	0.142	0.012	< 0.001
Intradisciplinary consensus (policies & procedures)	0.165	0.016	< 0.001
Intradisciplinary consensus (teaching issues)	0.131	0.013	< 0.001
Discipline (medicinal chemistry)	0.084	0.006	< 0.001

[†] Adjusted R^2 = 0.536
[‡] Type of institution was coded as 0 = Private institution, 1 = Public institution. Gender was coded as 0 = male and 1 = female.

Significant predictors of satisfaction with a supportive and equitable climate included institutional support, dean support, department chair support, male gender, intradisciplinary consensus on organizational policies and procedures, and employment at a public institution, which cumulatively accounted for 65.8% of the variance in the domain (Table 5).

Table 5. Forward conditional linear regression of the supportive and equitable climate domain.[†,‡]

Study variable	Std. Beta	R^2 Change	Sig. F Change
Institutional support	0.392	0.543	< 0.001
Dean support	0.297	0.062	< 0.001
Department Chair support	0.201	0.035	< 0.001
Gender	-0.086	0.010	< 0.001
Intradisciplinary consensus (policies & procedures)	0.084	0.004	< 0.001
Type of institution	0.070	0.004	< 0.001

[†] Adjusted R^2 = 0.658
[‡] Type of institution was coded as 0 = Private institution, 1 = Public institution. Gender was coded as 0 = male and 1 = female.

The three domains of intradisciplinary consensus, perceived institutional support, academic rank, and the stress due to lack of time (negative) explained 42.9% of the variance in requirements for promotion and tenure (Table 6). Lower levels of satisfaction with requirements for promotion and tenure were noted among assistant and associate professors than among full professors.

Table 6. Forward conditional linear regression of the requirements for promotion and tenure domain.[†]

Study variable	Std. Beta	R^2 Change	Sig. F Change
Intradisciplinary consensus (policies & procedures)	0.364	0.284	< 0.001
Institutional support	0.234	0.066	< 0.001
Academic rank (assistant professor)	-0.216	0.032	< 0.001
Intradisciplinary consensus (graduate program)	0.151	0.020	< 0.001
Intradisciplinary consensus (teaching issues)	0.131	0.017	< 0.001
Academic rank (associate professor)	-0.110	0.009	< 0.001
Stress due to lack of time	-0.086	0.005	< 0.001

[†] Adjusted R^2 = 0.429

Over one third (33.8%) of the variance in satisfaction with the availability of a graduate program was primarily explained by intradisciplinary consensus on graduate program issues, institutional support, self-reported academic discipline, and employment

at a public institution (Table 7). Pharmacy practice faculty reported lower satisfaction with the availability of a graduate program, while pharmaceutics faculty reported higher levels of satisfaction compared to faculty from other disciplines.

Table 7. Forward conditional linear regression of the availability of a graduate program domain.[†,‡]

Study variable	Std. Beta	R^2 Change	Sig. F Change
Intradisciplinary consensus (graduate program)	0.387	0.230	< 0.001
Institutional support	0.254	0.045	< 0.001
Discipline (pharmacy practice)	-0.161	0.040	< 0.001
Discipline (pharmaceutics)	0.140	0.014	< 0.001
Type of institution	0.101	0.009	< 0.001

[†] Adjusted $R^2 = 0.338$
[‡] Type of institution was coded as 0 = Private institution, 1 = Public institution.

Over one third (36.1%) of the variance in satisfaction with collegiality was explained by the three intradisciplinary consensus domains, institutional support, and by department chair support (Table 8).

Table 8. Forward conditional linear regression of the collegiality domain.[†]

Study variable	Std. Beta	R^2 Change	Sig. F Change
Institutional support	0.221	0.244	< 0.001
Intradisciplinary consensus (policies & procedures)	0.252	0.042	< 0.001
Intradisciplinary consensus (teaching issues)	0.227	0.046	< 0.001
Intradisciplinary consensus (graduate program)	0.127	0.019	< 0.001
Department Chair support	0.132	0.010	< 0.001

[†] Adjusted $R^2 = 0.361$

Predictors of satisfaction with the teaching environment included institutional support, intradisciplinary consensus on teaching issues, academic rank, employment at a public institution, stress due to need for accomplishment (negative), stress due to lack of time (negative), and self-reported academic discipline. Assistant professors reported lower satisfaction with their teaching environment, and SAdS faculty reported greater

satisfaction with their teaching environment than did other faculty. This set of predictors

explained 40.7% of the variance in satisfaction with the teaching environment (Table 9).

Table 9. Forward conditional linear regression of the teaching environment domain.[†,‡]

Study variable	Std. Beta	R^2 Change	Sig. F Change
Institutional support	0.406	0.252	< 0.001
Intradisciplinary consensus (teaching issues)	0.245	0.078	< 0.001
Academic rank (assistant professor)	-0.127	0.024	< 0.001
Type of institution	0.144	0.022	< 0.001
Stress due to need for accomplishment	-0.122	0.012	< 0.001
Stress due to lack of time	-0.122	0.013	< 0.001
Discipline (SAdS)	0.086	0.006	< 0.001

[†] Adjusted $R^2 = 0.407$
[‡] Type of institution was coded as 0 = private institution, 1 = public institution.

Significant predictors of overall work satisfaction included perceived institutional

support, dean support, department chair support, the three domains of a measure of

intradisciplinary consensus, employment at a public institution, stress due to lack time to

complete work activities (negative), and gender (male). The combination of predictors

explained 68.8% of the variance in overall work satisfaction (Table 10).

Table 10. Forward conditional linear regression of the overall work satisfaction measure.[†,‡]

Study variable	Std. Beta	R^2 Change	Sig. F Change
Institutional support	0.338	0.488	< 0.001
Department Chair support	0.177	0.055	< 0.001
Intradisciplinary consensus (teaching issues)	0.174	0.037	< 0.001
Intradisciplinary consensus (graduate program)	0.188	0.033	< 0.001
Intradisciplinary consensus (policies & procedures)	0.193	0.036	< 0.001
Type of institution	0.122	0.014	< 0.001
Stress due to lack of time	-0.105	0.011	< 0.001
Gender	-0.099	0.009	< 0.001
Dean support	0.107	0.005	< 0.001

[†] Adjusted $R^2 = 0.688$
[‡] Type of institution was coded as 0 = private institution, 1 = public institution. Gender was coded
as 0 = male and 1 = female.

Variables that were included in the regression analyses, but failed to significantly predict satisfaction with any of the individual domains include research productivity, teaching effectiveness, and self-efficacies for both teaching and research. Additionally, the number of hours one works per week, a surrogate measure of workload, was not identified as a significant predictor in any of the unique regression procedures.

4.3   JOB TURNOVER INTENTIONS

4.3.1   Descriptive results

A total of 176 (20.7%) of 848 respondents who provided information on job turnover intentions indicated a preference to leave their current institution within the next 2 years, while the remaining 672 (79.2%) indicated intentions to remain ("stayers"). Over 60% of those expressing an intention to leave ("leavers") planned to seek employment at another college/school of pharmacy, while the remainder sought to leave academia altogether, including retirement (n=8). Frequencies of primary reasons to remain among stayers are listed in Table 11. The most frequently cited reason for staying was autonomy in the work, followed by geographic location, fringe benefits, and relationships with department colleagues. Job security and the employing institution's reputation were also important factors.

Table 11. Most Frequently Selected Reasons to Remain with the Current Institution

Factor	Frequency of selection[*]	Ranking[†]
Freedom in work (autonomy)	478	1
Geographic location	351	2
Good fringe benefits	307	3
Relationship with department colleagues	293	4
Family responsibilities	251	5
Job security	197	6
Relationship with school/college administration	187	7
Good reputation of institution	182	8
Will likely be tenured and/or promoted	155	9
Appropriate (desired) workload)	127	10
Good salary	125	11
Presence of a graduate program in your discipline	101	12
Quality of entry-level degree program students	93	13
Type of institution (private/public)	88	14
Relationship with university administration	64	15
Research support	56	16
Low stress level	44	17
Teaching support	43	18
Administration's expectations of faculty	41	19
Absence of a graduate program in your discipline	0	20
No desire for change	0	20
Other	84	

[*]n=176. Respondents were asked to select as many as five unique reasons.
[†]Ranked by frequency of response, excluding "other" category.

The most frequently cited reasons for leaving (current institution and academia altogether) (Table 12) were excessive workload and to seek a change, followed by poor salary, relationships with school/college administration, lack of research support, high stress, and geographic location.

Table 12. Most Frequently Selected Reasons to Leave Current Institution

Factor	Frequency of selection[*]	Ranking[†]
Seeking new challenge/desire for change	72	1
Excessive workload	72	1
Poor salary	70	2
Relationship with school/college administration	56	3
Lack of research support	54	4
High stress level	37	5
Geographic location	37	5
Chance to work for an institution with a better reputation	35	6
Administration's expectations of faculty	35	6
Lack of teaching support	28	7
Seeking an alternative career path	28	7
Relationship with university administration	28	7
Poor fringe benefits	27	8
Family responsibilities	26	9
Retirement	23	10
Relationship with department colleagues	23	10
Quality of entry-level degree program students	23	10
Absence of a graduate program in your discipline	16	11
May fail to achieve tenure and/or promotion	13	12
Poor intellectual challenge	12	13
Type of institution (private/public)	10	14
Presence of a graduate program in your discipline	4	15
Other	18	

[*]n=176. Respondents were asked to select as many as five unique reasons.
[†]Ranked by frequency of response, excluding "other" category.

4.3.2   Regression analyses

Organizational commitment and department chair support were found to be the only significant predictors of job turnover intention (Table 13). The two variables explained 34% of the variance in job turnover intention.

Table 13. Forward conditional logistic regression of intention to remain with the current institution*[†][‡]

Study variable	Beta (S.E.)	Wald statistic	p value	95% C.I.[§]
Organizational commitment	1.23 (0.18)	48.29	<0.001	2.44 – 4.92
Department chair support	0.44 (0.16)	7.66	0.006	1.14 – 2.12

[*]n = 396, due to missing responses
[†]Dependent variable coded as 1 = Stayers; 2 = Leavers. Those intending to leave their current institution for another academic position and those intending to leave academia altogether were collapsed into one variable, "leavers".
[‡]Nagelkerke R^2 = 0.34
[§]95% confidence interval, odds ratio

The strong relationship between organizational commitment and employment intentions and the high correlations between organizational commitment and many of the remaining variables suggested that organizational commitment may act as a mediating variable. This phenomenon has been demonstrated in other health professions fields of study.[45, 46] Thus, organizational commitment was regressed over the remaining variables in a forward-conditional linear regression procedure. The results of the regression are shown in Table 14. Significant predictors of organizational commitment included institutional support, satisfaction with teaching environment, Dean support, satisfaction with resources for scholarship, intradisciplinary consensus on teaching issues, and membership in the pharmacy practice discipline.

Table 14. Forward conditional linear regression of organizational commitment.*[†]

Study variable	Std. Beta	R^2 Change	Sig. F Change
Institutional support	0.46	0.54	<0.001
Satisfaction with teaching environment	0.16	0.04	<0.001
Dean support	0.14	0.02	<0.001
Pharmacy practice faculty	0.15	0.02	<0.001
Satisfaction with resources for scholarship	0.10	0.02	<0.001
Intradisciplinary consensus (teaching issues)	0.10	0.01	0.002

[*]n = 395, due to missing data
[†]Adjusted R^2 = 0.63

A number of variables were not significant in the model, including other satisfaction constructs (e.g. supportive and equitable climate, requirements for promotion & tenure), other intradisciplinary consensus constructs (e.g. organizational policies & procedures, graduate programming issues), research and teaching self-efficacies, research productivity, stress, and other respondents' demographic characteristics (e.g. type of institution, age, gender).

4.4   SELF-EFFICACY FOR RESEARCH

4.4.1   Descriptive results

Mean item responses for the research self-efficacy scale are shown in Table 15. The overall item mean on the 101-point scale was 74.72. Faculty reported lower self-efficacies on acquiring extramural funding, interpreting statistical output from software, choosing appropriate data analysis strategies, and preparing grant proposals. Faculty reported higher self-efficacies on working with others in a research group, discussing research ideas with colleagues, delivering research findings at conferences, and preparing manuscripts for submission to peer-reviewed journals.

Table 15. Mean responses to the research self-efficacy measure.*

Item	Mean ± SD
Design a research project	74.75 ± 26.28
Choose appropriate data analysis strategies	59.87 ± 32.43
Identify areas of needed research, based on the literature	76.39 ± 24.63
Develop a logical rationale for your particular research idea	77.97 ± 24.10
Generate researchable questions	76.78 ± 25.36
Interpret and understand statistical output from appropriate software	58.46 ± 31.76
Organize your proposed research ideas in writing	76.50 ± 24.15
Complete a significant project	76.64 ± 24.87
Deliver research findings at professional seminars/conferences	83.94 ± 21.76
Discuss research ideas with colleagues	84.87 ± 19.98
Work with others in a research group	86.07 ± 18.84
Utilize criticism fro reviews of your research	83.22 ± 19.63
Prepare a manuscript for submission to a refereed journal	83.51 ± 21.60
Supervise student researchers	75.56 ± 27.02
Train assistants to collect data	75.72 ± 26.82
Attend to all relevant aspects of data collection	75.55 ± 25.70
Construct reliable data collection methods	74.22 ± 26.58
Ensure validity in your data collection methods	69.36 ± 30.43
Prepare a grant proposal	67.23 ± 30.43
Acquire extramural funding	58.03 ± 30.74

* Scored on a scale from 0 = no confidence to 100 = extraordinary confidence

4.4.2 Regression analysis

Research self-efficacy was primarily predicted by teaching self-efficacy, consensus on graduate programming issues, consensus on institutional policies and procedures, institutional support, belief in the complementarity of teaching and research (i.e. the "nexus), faculty discipline, academic rank, and type of institution. The above predictors accounted for 36.7% of the variance in research self-efficacy. Faculty from pharmacy practice reported significantly lower research self-efficacy (mean = 1341.11 ± 429.38) than faculty from all other disciplines (means ranging from 1661.77 ± 351.40 for SAdS, to 1758.84 ± 192.58 for pharmacology/toxicology) ($p < 0.01$). Assistant professors reported significantly lower research self-efficacy (mean = 1334.17 ± 454.96) than associate professors (mean = 1562.98 ± 374.73) and professors (mean = 1698.67 ±

252.84) (p < 0.01). Faculty from public institutions (mean = 1530.02 ± 405.59) reported

significantly higher research self-efficacy than faculty from private institutions (mean =

1437.73 ± 431.55) (p < 0.01). Results of the research self-efficacy forward conditional

linear regression procedure are shown in Table 16.

Table 16. Forward conditional linear regression of research self-efficacy.[†,‡]

Study variable	Std. Beta	R^2 change	Sig. F Change
Teaching self-efficacy	0.329	0.174	<0.001
Pharmacy practice faculty	-0.287	0.116	<0.001
Assistant professor	-0.158	0.035	<0.001
Type of institution	0.085	0.009	<0.001
Intradisciplinary consensus (graduate program)	0.130	0.007	<0.001
Institutional support	-0.176	0.007	<0.001
Intradisciplinary consensus (policies & procedures)	0.134	0.013	<0.001
Belief in teaching-research nexus	0.089	0.006	<0.001

[†] Adjusted R^2 = 0.367
[‡] Type of institution was coded as 0 = private institution, 1 = public institution.

4.5   TEACHING SELF-EFFICACY

4.5.1   Descriptive results

Mean responses to items comprising the teaching self-efficacy scale are reported

in Table 17. The overall item mean on the 101-point scale was 77.74. Highest mean

self-efficacies were reported for helping students think critically, providing alternative

explanations when students are confused, responding to difficult questions, and making

time for students outside of the classroom (i.e. office hours for student consultation). The

lowest reported self-efficacies were motivating students with low interest in the course

and fostering student creativity, followed by improving failing students' understanding of

the material and adjusting teaching strategies to accommodate learning styles.

Table 17. Mean responses to the teaching self-efficacy measure.*

Item	Mean ± SD
Help your students think critically	92.56 ± 24.85
Provide an alternate explanation or example when students are confused	84.57 ± 14.36
Craft appropriate exam questions	79.64 ± 17.71
Adjust your teaching strategies to accommodate various student learning styles	73.84 ± 18.87
Respond to difficult questions from your students	82.44 ± 16.25
Adjust your course content to the proper level for students	80.15 ± 26.64
Employ a variety of effective student learning assessment strategies	74.54 ± 20.17
Gauge student comprehension of what you have taught	75.75 ± 17.89
Provide appropriate challenges for very capable students	78.57 ± 18.29
Control or prevent disruptive behavior in the classroom	77.52 ± 20.59
Respond to defiant students outside of the classroom	75.54 ± 22.06
Get students to believe they can do well in your course	80.09 ± 17.06
Help your students value learning	75.66 ± 19.24
Motivate students who show low interest in your course	66.13 ± 21.95
Improve the understanding of a student who is failing	72.11 ± 19.71
Foster student creativity	70.75 ± 20.03
Make time available to students outside of the classroom	82.40 ± 19.36

* Scored on a scale from 0 = no confidence to 100 = extraordinary confidence

4.5.2   Regression analysis

Variance in teaching self-efficacy was explained primarily by research self-

efficacy, stress due to a need for accomplishment, institutional support, age, and type of

institution. The predictors accounted for 24.3% of the variance in teaching self-efficacy.

Faculty who were older reported greater teaching self-efficacy than younger faculty.

Those faculty from private institutions reported greater teaching self-efficacy than faculty

from public institutions. Results of the regression analysis are shown in Table 18.

Table 18. Forward conditional linear regression of teaching self-efficacy.[†,‡]

Study variable	Std. Beta	R^2 change	Sig. F Change
Research self-efficacy	0.391	0.174	<0.001
Stress due to need for accomplishment	-0.131	0.032	<0.001
Institutional support	0.146	0.015	<0.001
Age	0.129	0.013	<0.001
Type of institution	-0.107	0.009	<0.001

[†] Adjusted R^2 = 0.243
[‡] Type of institution was coded as 0 = private institution, 1 = public institution.

Study variables that were included in both the research self-efficacy and the teaching self-efficacy regression analyses, but were not significant predictors of either construct included intradisciplinary consensus on teaching issues, gender, Dean and Department chair support, and another domain of stress (due to a lack of time to get things done).

5.0   DISCUSSION

5.1   LIMITATIONS

This study relied on self-report to elicit perceptions about work life phenomena upon which respondent opinions may be biased by personal feelings or that which may be affected by a lack of complete information (e.g. institutional and Dean support). Additionally, utilizing self-report to gather future employment intentions data only partially accounts for actual turnover behavior. Some faculty indicating intentions to remain may actually leave their institution and faculty who express an intention to leave their institution may actually remain due to unforeseen circumstances.

The generalizability of the results to the nationwide population of pharmacy faculty is also limited given the survey's relatively low rate of return. The main concern in regards to a low response rate is the potential for non-response bias; however, non-response bias could persist with response rates of up to 60%, or even higher.[106] Response rates to e-mail surveys may be enhanced by using a mailed pre-notification postcard, but the cost-effectiveness of such a procedure is inconclusive.[114, 115] The utility of email pre-notification and follow-up as performed in this study is not yet well established. The rate of return may have been a reflection of faculty's busy schedules and the response burden

associated with a relatively lengthy questionnaire (taking approximately 30-45 minutes to complete).

Responses in this study were over-represented from SAdS faculty, and under-represented from basic science faculty and, therefore, the resultant job satisfaction measure and regression analyses for satisfaction, turnover intentions, and self-efficacies may have been impacted by unique experiences of SAdS and pharmacy practice faculty or others with particularly strong feelings about their work environment or who are less skeptical of this type of research. The demographic composition of the respondents was otherwise typical of what might be expected, given the demographic composition of U.S. pharmacy faculty.[113] Job turnover intentions among faculty did not differ by discipline upon further analysis; however this also could have been an artifact of unique experiences reported by the survey respondents.

Because of the use of self-reported survey data, the data might not be a truly accurate representation of how the proposed items affect work satisfaction. The construction of items for the work satisfaction scale and thus their resultant loading into domains may be an artifact of the language used in item construction; however, the use of a modified Delphi procedure comprised of multiple rounds among faculty from various disciplines and institutions may have served to minimize this phenomenon. Further, this study did not consider factors external to the immediate work environment (e.g. home life, health, spiritual involvement) that may affect work satisfaction.

The construct validity and reliability of the single-item measures used in this study cannot be discerned. The choice of stepwise regression procedures was due to the relative lack of established knowledge as to the exact hierarchical nature of the variables

that are thought to predict work satisfaction, turnover intentions, and self-efficacy.

Kerlinger and Lee argue in favor of the use of parametric statistics on ordinal data

gathered from multivariate survey research.[116] Therefore, ordinary least-squares

regression procedures were conducted on the same data and produced very similar

results, with the exception that respondents from private institutions reported less

organizational commitment than did those from public institutions.

The presence of professional staff that did not hold faculty positions in the sample

population may have artificially deflated the response rate. The response rate may have

further been deflated by the presence of unattended email inboxes that still accepted

email, but belonged to faculty no longer at the institution. Due to the anonymous nature

of the survey responses, the effect of such deflation is not quantifiable. The AACP 2005-

06 Profile of Pharmacy Faculty[113] reports 4,201 full-time pharmacy academicians; as

such, responses were acquired from 21.1% of them. Although the survey responses were

anonymous, privacy concerns based upon unique demographic responses may have

prohibited some respondents from providing demographic information.

5.2   DISCUSSION OF RESULTS

5.2.1   Work satisfaction

This study is among the first to proffer a multi-dimensional measure of work

satisfaction among pharmacy faculty. The overall measure demonstrated high degrees of

construct and discriminant validity, while its resultant six domains, addressing both

60

intrinsic and extrinsic motivating factors of work satisfaction, exhibited very good internal consistency reliability. Previous work aiming to evaluate satisfaction among junior pharmacy faculty[7] borrowed from Serafin,[33] who conceptualized work satisfaction only within the context of role functions. Other researchers focused on unique aspects of quality of work life, such as burnout,[20] while others examined overall life satisfaction among pharmacy faculty, taking into account more external factors of the individual's life and focusing less on the specifics of the work environment.[44] While important, these contributions might not be as instructive for faculty and administrators to appraise various components of academic work life.

The resultant model from this study identified six domains of work satisfaction, each with its resultant subscale that might be used by a college/school of pharmacy or even by a department/division to identify sources of satisfaction or dissatisfaction. The subscale "resources for scholarship" might be useful for identifying perceptions among faculty that they lack the resources necessary to fulfill their role as a researcher and could prompt administrators to address how the institution/department could enhance its scholarly reputation.

It would appear as though equity and the supportive climate established by college/school administrators are important issues comprising perceptions of the overall support afforded to faculty. The ability of administrators to create and maintain a positive climate and foster development among faculty has been reviewed by Latif.[21] This subscale might be used to gauge the effectiveness of efforts undertaken by administrators to foster the development of junior faculty members.

Items that comprise the "teaching environment" subscale address not only a faculty member's course load, but also their satisfaction with their perceived level of autonomy in teaching. This corroborates the findings of the turnover intentions analysis from this same study that identified autonomy and workload as important factors in an academician's future employment intentions. It is interesting to note that respondents reported the highest level of satisfaction with the teaching domain. Other studies have suggested that teaching is a source of stress for faculty.[94] These findings highlight that stress and satisfaction are, in fact, unique constructs. Teaching may likely be a source of stress due to inadequate preparation to begin a teaching career and the extensive time commitment that teaching responsibilities can command, especially for junior faculty.[7, 20, 63, 95] At the same time, satisfaction may be gained from career progress and the intrinsic rewards offered by student interaction. Increased preparation of doctoral candidates for their future teaching roles will help serve to make them more efficient and productive teachers, thus potentially limiting the stress and increasing the satisfaction that is derived from their teaching role.[6, 63]

While obligations to fulfill teaching roles may be a source of stress for faculty, it does not directly follow that they are similarly dissatisfied because of this. For instance, the stress of organizing a particularly rigorous course and obtaining a positive reaction from colleagues or students may act as a positive stressor for an academician, resulting as a significant source of satisfaction. Further, the items comprising the teaching environment domain do not address the stress that might result from the evaluation of teaching performance, which may be a primary source of stress related to teaching. Other differences of the current study from the Gmelch et al.[94] study are that their respondents

were from various academic fields and that they did not attempt to place sources of stress specifically within the context of satisfaction. The fact that the current examination was conducted among a more narrow population of faculty and sought to identify possible relationships among the two work life outcome variables may be responsible for such differences.

The "requirements for promotion and tenure" subscale primarily addresses the issue of clarity of expectations and the importance of administration-faculty communication in such matters. It is difficult, and not prudent for an institution to define such criteria too prescriptively (e.g. the number of publications a faculty member ought to have) for autonomous scholars; however, mixed messages from department colleagues, Chairs, and Deans might have a deleterious impact on a faculty member's work satisfaction, which could in turn have negative implications for organizational commitment and scholarly productivity or teaching effectiveness, although further study is needed in this area. Discrepancies between what faculty feel are important teaching and scholarship activities and what activities are given greater weight in promotion and tenure decisions were examined by Wolfgang, Gupchup, and Plake,[117] who suggested that dissonance in expectations may impact satisfaction. Interestingly, "the procedures used to evaluate a faculty member's teaching effectiveness" item loaded on this domain, rather than the teaching environment domain. This might appear to be an anomaly; however, further examination broadens its intuitive appeal, as a faculty member's experience in teaching and interacting with students might be wholly different than the perception of how teaching effectiveness is measured, which might include other factors in addition to students' evaluation of teaching. As such, one domain examines

satisfaction with fulfilling a role and the other examines the means by which

effectiveness or productivity in that role is measured and rewarded. The "teaching

environment" subscale contains an item eliciting satisfaction with the quality of students

admitted into the professional program. This item and the "reputation" item from the

support for scholarship scale are in unique domains; however, both domains address

fulfillment of academic role functions. As such, the loading of such items evidence the

importance that pharmacy faculty place on taking pride in their work and in their

employing institutions. Pride is another unexplored concept among pharmacy faculty and

its role in impacting quality of work life bears further examination.

Graduate programs may be extraordinarily vital to scholarly productivity and may

be critical resources in teaching, such as for conducting laboratories and recitations, in

addition to grading papers and expanding the array of pedagogical strategies available to

faculty. Competent teaching assistants may often fulfill parts of the teaching role for a

faculty member, leaving them more time to pursue scholarly activities. At the same time,

however, mentoring graduate students and teaching graduate courses are time-consuming

and can detract from time spent in other activities that faculty might prefer. Interestingly,

the related items loaded onto a unique domain, as opposed to the "resources for

scholarship or "teaching environment" domains. This was perhaps due to the perception

that the availability of competent graduate students might be more of an indication of the

institution and its culture, and less within the control of Chairs, Deans, and other

administrators.

The presence of a collegiality domain further evidences the importance of intra-

departmental relationships among faculty.[31, 37] The loading of these items onto one

subscale suggests that scholars perceive that they could potentially be productive and enjoy their work environment, independent of the amount of support they receive from institution. This has implications for hiring persons to comprise a department who complement one another socially and in their skill sets. Having collegial relationships with department members could serve to buffer dissatisfaction or stress accrued from other aspects of academic life; however, this also warrants further study.

5.2.2   Job turnover intentions

In 2002, the AACP acknowledged that 23% of vacant positions were due to faculty leaving one academic institution for another and that 51% of vacant positions were due to an insufficient number of applicants in the pool.[9] Recognizing the critical importance of recruiting and retaining adequate pharmacy faculty staffing, the AACP COD-COF appointed a committee to suggest strategies aimed at recruiting and retaining faculty.[10] While it might be argued that many of the issues discussed in the final COD-COF report are aimed at recruitment, retention strategies are similarly as important. Simply filling the graduate student pipeline, albeit a difficult task in and of itself, will not alone alleviate the academic manpower shortage and does not provide administrators with a long-term strategy for maintaining strong academic departments. Faculty retention is a necessary component of effective academic departments.

Autonomy was the reason cited most frequently by respondents as one reason to remain with their current institution. The autonomy to achieve self-professed goals as a teacher-scholar has traditionally been one of the more appealing aspects of an academic career. Although another academic institution may provide the allure of additional

benefits with the same level of autonomy, faculty may be wary of uncertain change. It is important to note the importance of autonomy in the work life of pharmacy academicians, especially in light of perceived trends in the "corporatization" of academic culture.[118] The fringe benefits accompanying academic work, including vacation time, favorable retirement investment plans, discounted or free education for family members, and the ability to pursue additional income are attractive to many. Respondents also cited job security, family responsibilities, and geographic location as important factors.

Administrators should be cognizant of the factors involved in retention that they can control and those which they cannot. Some faculty will leave for warmer climates, to be closer to family, or to be closer to a cultural, urban center. This being said, there will sometimes be nothing that a school can do to retain certain faculty. The goal of retention strategies must focus on those factors that can be controlled, making the environment one that is too good to leave.

Among factors related specifically to the current work environment, collegiality was a very important factor. This corroborates evidence of the importance that faculty have colleagues with whom they can collaborate in teaching and research and with whom they might be friends.[119-121] Friendly collaboration may lead not only to a feeling of acceptance for new faculty, regardless of whether they come from another institution or are fresh out of graduate school, but may also contribute to promoting research productivity and teaching effectiveness through shared expertise. Increases in productivity has implications beyond the immediate scope of this study, but can certainly improve the self-efficacy of faculty, which in turn may further promote additional productivity in a recursive manner.[58]

A review of the most frequently selected reasons for "leavers" to seek employment elsewhere would lend at least some support to Lee and colleagues' contention that people follow "scripts," or preexisting plans of action and change employers when it becomes apparent that their professional needs remain unfulfilled.[122] Desire for change was a very prominent reason to leave, evidencing the utility of Lee and colleagues' "unfolding model". This phenomenon would seem to behoove school/college administrators to become more proactive in career planning for faculty and identify those faculty members with the talents or goals to ascend into administrative positions, ideas which were proffered by the AACP COD-COF Faculty Recruitment and Retention Committee.[10] Among the respondents, excessive workload and poor salary also appeared problematic. Faculty may view excessive workload within the context of low salary, particularly in light of the opportunity for higher salaries with employment in the pharmaceutical industry or in health policy consulting organizations.

The results of this study, taking into account both the examination of work satisfaction and employment intention, provide at least indirect support for Herzberg's[23,24] motivator–hygiene factors that individuals experience within organizations. Herzberg's framework suggests that "motivators" or "satisfiers" sustain at least a small amount of content and fulfillment, and that "dissatisfiers" may be more responsible for turnover intentions than a lack of satisfiers. For example, adequate salary is only a mild satisfier; however, perceived inadequate salary is a dissatisfier that results in persons seeking alternative employment options, as evidenced for its frequent citation among respondents in this study. The recommendations of the AACP COD-COF report were in concordance with these findings when they suggested that colleges/schools of pharmacy be more

creative in administering merit increases and allowing income from grant activities and consulting.[10]

The regression analysis of turnover intentions revealed the importance of department chair support on faculty respondents' intentions to remain with their current institution. While this is not the first study to demonstrate the implications of chair support,[123] it is interesting to note that the effect of other variables on turnover were moderated by organizational commitment; thus, a faculty member might lean toward remaining with an institution with adequate support from the chair, even without necessarily having formed substantial commitment to the institution.

As predicted in the hypothetical model of faculty work life, employer commitment appears to act as precursor to turnover intentions, and as such, moderates the effects of other organizational and support variables. The variable explaining the most variation in organizational commitment was institutional support. Research in other professions has confirmed this sort of reciprocal relationship, in which employees develop a sense of commitment to an organization only after it is perceived that the organization has made a commitment to them.[46] In schools of pharmacy, this may go beyond the granting of tenure and promotion, but also through mentoring, career planning, support for faculty development, and inclusion into departmental planning and policy development.

The teaching environment played an important role in the formation of organizational commitment as well. Rosser[31] found evidence that satisfaction with teaching may help explain academician quality of work life. Teaching takes up a considerable amount of time, usually more so than the faculty member originally

believed it would, and relationships and fruits borne through teaching thus serve as sources of quality of work life belief formation.[124] Intradisciplinary consensus on teaching issues implies that department colleagues agree on standards for excellence in teaching, appropriate course content, effective strategies for information delivery and assessment, and the appropriate level of course rigor. This domain of the intradisciplinary consensus construct has been implicated in new faculty members' ability to adjust to their academic environment and assimilate into their teaching roles.[50] Wolfgang et al.[117] demonstrated that faculty prefer that more weight be given to teaching in promotion and tenure decisions; however, they also believe that better methods be employed to evaluate teaching effectiveness.

The fact that pharmacy practice faculty indicated greater levels of organizational commitment is surprising, given findings by Carter and colleagues'[56] that turnover was higher among pharmacy practice faculty. This may be accounted for by differences in turnover intentions and actual turnover, most notably unsolicited job offers or other means of "shock"[122] that may be experienced more commonly among pharmacy practice faculty, a greater number of pharmacy practice faculty assuming more traditional teacher-scholar roles since Carter and colleagues'[56] study, and a maturation of pharmacy practice as a science and discipline.

Variables not significant in the regression analyses for job turnover intentions include teaching and research self-efficacies, stress, gender, academic rank, type of institution, and certain satisfaction constructs. To date, little has been published on the relationship between self-efficacy and turnover intentions. This may be due to the indirect nature of the relationship between the variables, with turnover intention being

69

mediated by employer commitment[45, 46] and self-efficacy being potentially moderated by institutional support and intradisciplinary consensus, as was demonstrated in this examination. This being said, it is unlikely that a direct relationship should exist between these two constructs. Further, work by Johnsrud[48] has suggested that attitudinal variables such as morale and commitment play a larger role in predicting behavioral outcomes, such as turnover intention, than do demographic variables such as age or gender. This was corroborated by the results of this study. Johnsrud[48] did point out that satisfaction and stress appear to play a role in predicting turnover intention, but their exact role is unclear. The small contribution of such attitudinal variables in this study does not refute the relational ambiguity posited by Johnsrud. While the correlations between commitment and the non-significant variables were in the expected direction, they failed to account for enough of the variation in commitment to be included in the regression model. Indeed, while satisfaction and stress are important quality of work life variables, evidence suggests that they play a relatively small role in turnover intentions and actual turnover rates.[122]

5.2.3 Self-efficacy for teaching and research

This is the first study to examine teaching and research self-efficacies among a sample of pharmacy faculty. Respondents reported a generally high level of self-efficacy for both research and teaching related tasks. However, faculty reported lowest self-efficacy among research-related tasks in acquiring extramural funding and preparing grant proposals, both of which are critically important in a faculty member's research career. Procuring extramural funds is critical for one's career mobility, including

promotion and tenure, as well as for providing the means to conduct research, thereby advancing knowledge and influencing practice. Publication counts are a significant correlate of many other research measures including grant funding, and it can therefore be safe to assume that decreases in productivity in one arena (i.e. procuring grants) would lead to concomitant decreases in other aspects of scholarly productivity (i.e. peer-reviewed publication). Drawing on the work of Boyer,[5] Kennedy[125] and colleagues highlight that various forms of scholarship are necessary not only to advance knowledge, but to maintain relevant and up to date curricula in schools of pharmacy and to expand areas of interest that may prompt students to pursue careers in academia.

When implementing faculty development programs, it would behoove administrators to identify and focus on areas of low-self-efficacy, as they have been linked to productivity in previous literature.[58, 60, 74] Further, junior faculty should be motivated to actively seek out senior faculty advisors or mentors, either through a formal process or informally, to help them adjust to their new professional roles. Collaborations borne of these endeavors may serve to help junior faculty develop confidence in areas in which they previously had low self-efficacy.

Respondents reported highest confidence in their ability to work in research groups and in discussing research ideas with colleagues. A collegial atmosphere within an academic department would only seek to promote collaboration on research projects, therefore increasing faculty productivity. While the development of a collegial environment has been shown to have positive effects on employee satisfaction[31, 37], its ability to facilitate interactions that may increase productivity would serve as an added bonus to both faculty and administrators.

Lowest self-efficacy for teaching-related tasks was reported in motivating students who show low interest, improving the performance of students who are failing, and adjusting teaching strategies to accommodate various learning styles. This is interesting because they each represent generally time-intensive, complex tasks. To improve motivation and performance in students who are uninterested or otherwise amotivated, may require individual meetings outside of class time and the arrangement of tutoring or other special accommodations to help improve student motivation. The assimilation of different teaching tactics to accommodate different learning styles involves significantly more time spent in course development. With workload already being a concern for many faculty, spending additional time in tasks that may not be similarly rewarded in the promotion and tenure process is not a high priority. Reward and recognition and time constraints have been reported as important influences on one's level of job stress.[94] Avoiding conflicts is these areas likely prompts faculty to reduce their activity in tasks that take up additional time, and therefore lowers their self-efficacy for the given tasks. However, this does not make the activities unimportant and creates a difficult task for administrators to encourage and find time and resources to reward such performance.

Perhaps the most interesting finding in the analyses of teaching and research self-efficacies is that teaching self-efficacy is the strongest predictor of research self-efficacy, and vice versa. This finding provides evidence that teaching and research may be complementary roles. It has long been debated as to whether or not teaching and research are complementary, antagonistic, or fully independent constructs. In other words, does being a good researcher also make you a good teacher, and vice versa? Traditionally,

72

conflicting beliefs have held that these roles are either complementary or antagonistic. Some evidence exists for a positive, though weak relationship between the two roles; however, comprehensive literature reviews and analysis by Feldman[104] and by Marsh and Hattie[103] failed to substantiate this hypothesis. Marsh and Hattie explored variables such as external reward for success in each role, time allotted to the different tasks, belief in a nexus stating that the two roles are complementary, if not synergistic, and external constraints limiting one's ability to perform in the different roles as potential mediators of the relationship between teaching effectiveness and research productivity.[103] It is possible that a significant positive effect has not been found because of the presence of two unique cohorts of faculty: one who are good teachers and good researchers, and the other who are neither good teachers nor good researchers.

5.3   FUTURE RESEARCH

The current study was largely exploratory in nature, as little research has been done to examine quality of work life among pharmacy faculty. Therefore, this study opens up a viable vein of research in which relationships among quality of work life variables can be further identified and clarified.

The extent and implications of salary compression in pharmacy academia may merit particular study. This would include their impact on various domains of satisfaction, specifically the domain that addresses the extent to which faculty perceive that they work in a supportive and equitable climate.

Given the critical need for pharmacy practice faculty in the years to come, further study examining their job attitudes and turnover behavior is warranted. This is specifically spurred by consistent findings that women faculty continue to encounter barriers to achieving similar recognition and reward compared to their male counterparts. The allure of outside job offers will also continue to encourage the need to identify trends in pharmacy faculty employment intentions, in general.

The impact of prescriptive expectations in the promotion and tenure process also warrants further examination. Such practices may exhibit deleterious effects on the satisfaction of autonomous scholars and on their teaching effectiveness and research productivity. If faculty are not allowed to perform their roles as they see fit (within reason) it is thought to be likely to decrease their satisfaction as they may feel they take on the role of a corporate employee with a narrowly defined job description.

5.4   CONCLUSIONS

Current trends in pharmacy education suggest a need to examine pharmacy faculty quality of work life and productivity in a systematic manner. Evidence suggests that faculty in higher education operate within increasingly demanding environments. Shortages in pharmacy faculty, revised ACPE accreditation guidelines, and increased competition for extramural funding may only jeopardize the appeal of employment as an autonomous teacher-scholar. It is thus critical that recruitment efforts be supplemented with strategies to keep existing faculty in academia and that colleges/schools of pharmacy retain productive teacher-scholars from heading to other institutions. The current research

was undertaken to develop a comprehensive measure of pharmacy faculty work satisfaction, to identify predictors of attitudinal work life outcomes such as work satisfaction and self-efficacy, and to identify predictors of a behavioral work life outcome, job turnover intentions.

Respondents' perceptions of work satisfaction were observed as a set of six domains: resources for scholarship, supportive and equitable climate, requirements for promotion and tenure, availability of a graduate program, collegiality, and teaching environment. Items comprising each domain can be used as scales to measure work satisfaction in unique areas. The overall measure exhibited very good construct validity, and each subscale exhibited very good internal consistency reliability.

Autonomy, fringe benefits, and location were frequently cited by faculty respondents intending to remain with their current institution. A model of faculty turnover intentions describes the direct effects of department chair and organizational commitment, which is formed through support, intradisciplinary consensus, and satisfaction with one's teaching environment. College/school of pharmacy administrators and senior faculty might consider these results when developing policies that may impact their organizational climate and faculty morale.

Faculty reported generally high level of self-efficacy in their teaching and research roles. However, lowest self-efficacies were reported in performing important research and teaching related activities, highlighting the need for administrators to be able to identify the self-efficacy developmental needs of their faculty and tailor development programs to enhance such areas in which performance may be limited by a lack of confidence to perform them.

There is still an opportunity to examine additional quality of work life and productivity issues among pharmacy faculty. The competition among pharmacy faculty with faculty in other disciplines for increasingly scarce resources and the acute and forecasted shortage of pharmacy faculty necessitates that these issues be examined even more closely.

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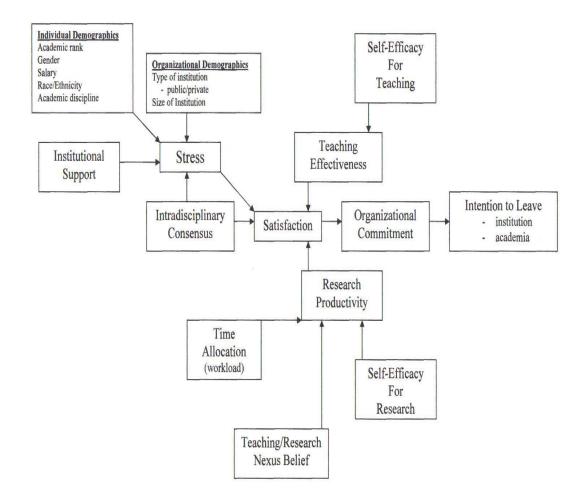
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PHARMACY FACULTY QUALITY OF WORK LIFE: THEORETICAL MODEL

SURVEY QUESTIONNAIRE, FINAL WEB VERSION:

PHARMACY FACULTY QUALITY OF WORK-LIFE, PRODUCTIVITY, AND

EMPLOYMENT ISSUES

<u>Page 1</u>

Satisfaction with Current Academic Position

Please indicate your level of satisfaction with the following aspects of your current academic

position by marking the appropriate number next to each item using the following scale:

1 = extremely dissatisfied (ED)

2 = moderately dissatisfied (MD)

3 = slightly dissatisfied (SD)

4 = slightly satisfied (SS)

5 = moderately satisfied (MS)

6 = extremely satisfied (ES)

Keep in mind that, as an academician, the presence (or absence) of each of these items should

impact your satisfaction to some extent. For example, if you do not have a graduate program,

your (lack of) opportunity to mentor graduate students evokes some level of satisfaction or

dissatisfaction.

The freedom to design courses as I see fit.	1 2 3 4 5 6
The quality of students admitted into our program.	1 2 3 4 5 6
My teaching workload.	1 2 3 4 5 6
Clear understanding of the teaching requirements needed for tenure/promotion.	1 2 3 4 5 6
The procedures used to evaluate a faculty member's teaching effectiveness.	1 2 3 4 5 6
The opportunity to mentor graduate students.	1 2 3 4 5 6
The courses I am assigned to teach.	1 2 3 4 5 6
The availability of competent graduate teaching assistants.	1 2 3 4 5 6
The availability of competent graduate research assistants.	1 2 3 4 5 6
Available computer hardware/software to meet my research needs.	1 2 3 4 5 6
Clear understanding of the research requirements needed for tenure/promotion.	1 2 3 4 5 6
Availability of time to pursue scholarship.	1 2 3 4 5 6
Institutional support for research.	1 2 3 4 5 6
Secretarial assistance.	1 2 3 4 5 6

Page 2

Please respond to the following items using the same directions as the previous page, using the following scale:

1 = extremely dissatisfied (ED)

2 = moderately dissatisfied (MD)

3 = slightly dissatisfied (SD)

4 = slightly satisfied (SS)

5 = moderately satisfied (MS)

6 = extremely satisfied (ES)

Opportunities for collaboration within my department.	1 2 3 4 5 6
Opportunities for collaboration with scholars outside of my department.	1 2 3 4 5 6

My department's reputation for excellence in scholarship.	1 2 3 4 5 6
Institutional assistance with seeking funding for my research.	1 2 3 4 5 6
General support from my department/division chair.	1 2 3 4 5 6
General support from my dean.	1 2 3 4 5 6
Institutional efforts in support of the career development of faculty members.	1 2 3 4 5 6
Salary competitive with other schools of pharmacy.	1 2 3 4 5 6
Distribution of rewards (i.e., salary) based on merit.	1 2 3 4 5 6
Mutual respect for other's scholarly endeavors within my department.	1 2 3 4 5 6
The social interactions among faculty within my department outside of work.	1 2 3 4 5 6

Page 3

Plans for the Future – I

Please indicate your future employment plans by marking the appropriate item.

In the next two (2) years, I am likely to:

___ Stay at my current institution (if checked – move to page 4)

___ Leave my current institution (if checked – move to page 5)

___ Leave academia altogether (if checked – move to page 5)

Page 4

Plans for the Future – II

Please indicate the reasons supporting your decision to stay at your current institution.

Mark up to, but NO MORE THAN, five (5) reasons supporting your decision.

Reasons for staying at your current institution:

___ Will likely be tenured and/or promoted

___ Good benefits

___ Freedom in work (autonomy)

___ Relationship with university administration

___ Relationship with school/college administration

___ Relationship with department colleagues

___ Quality of entry-level students

___ No desire for change

___ Appropriate (desired) workload

___ Family responsibilities

___ Low stress level

___ Good institutional reputation

___ Good salary

___ Administration's expectations of faculty

___ Geographic location

___ Research support

___ Teaching support

___ Presence of a graduate program in your discipline

___ Absence of a graduate program in your discipline

___ Job security

___ Other (please specify)

[open text box]

Plans for the Future – II

Please indicate the reasons supporting your decision to leave your current institution or academia altogether. Mark up to, but NO MORE THAN, five (5) reasons supporting your decision.

Reasons for leaving your current institution or academia altogether:

___ May fail to achieve tenure and/or promotion

___ Poor benefits

___ Burned Out

___ Relationship with university administration

___ Relationship with school/college administration

___ Relationship with department colleagues

___ Quality of entry-level students

___ Seeking new challenge / desire for change

___ Excessive workload

___ Family responsibilities

___ High stress level

___ Chance to work for institution with a better reputation

___ Poor salary

___ Administration's expectations of faculty

___ Geographic location

___ Type of institution (e.g. private/public)

___ Lack of research support

___ Lack of teaching support

___ Presence of a graduate program in your discipline

___ Absence of a graduate program in your discipline

___ Retirement

___ Poor intellectual challenge

___ Seeking an alternative career path

___ Other (please specify)

   [open text box]

Academic Position

Is your current position the first academic position that you have held?

___ Yes (if checked – move to page 8)

___ No (if checked – move to page 7)

Reasons for Leaving Previous Position

Please select up to, but NO MORE THAN five (5) reasons supporting your decision to leave

the most recent academic position you held prior to your current one.

___ Failed to achieve tenure/promotion

___ Change in school/college administration

___ Sought new challenge/desired a change

___ Desired greater autonomy

___ Excessive teaching workload

___ Lack of collegiality

___ Poor benefits

___ Inadequate salary

___ High stress level

___ Geographic location

___ Spousal job transfer

___ Change in marital status

___ Unsolicited job offer prompted departure

___ Position did not meet expectations

___ Found it difficult to agree with institution's values/mission

___ Lack of research support

___ Lack of teaching support

___ Absence of a graduate program at previous institution

___ Presence of a graduate program at current institution

___ Other (please specify)

[open text box]

<u>Page 8</u>

Commitment to your Current Academic Institution

Please mark the number to the right of each statement that corresponds to your

level of agreement with each statement according to a scale ranging from

1 = Strongly Disagree to 5 = Strongly Agree.

I am willing to put in a great deal of effort beyond that normally expected to

help this institution be successful.   1 2 3 4 5

I talk up this institution to my colleagues as a great institution to work for.   1 2 3 4 5

I feel very little loyalty to this institution.   1 2 3 4 5

I am willing to accept an occasional unfavorable job assignment in order to

keep working at this institution.   1 2 3 4 5

I find that my values and the institution's values are very similar.   1 2 3 4 5

I am proud to tell others I am a part of this institution.   1 2 3 4 5

I could just as well be working for a different institution as long as the

work was similar.   1 2 3 4 5

This institution really inspires the very best in me in the way of job performance. 1 2 3 4 5

I am glad that I chose this institution to work for over others that I was

94

considering at the time.   1 2 3 4 5

There's not too much to be gained by remaining with this institution indefinitely.   1 2 3 4 5

Often, I find it difficult to agree with this institution's policies on important

matters relating to its faculty.   1 2 3 4 5

I really care about the future of this institution.   1 2 3 4 5

For me, this is the best of all plausible institutions for which to work.   1 2 3 4 5

Deciding to work for this institution was a mistake on my part.   1 2 3 4 5

Page 9

Time Allotted to Work Activities

Please indicate the PERCENT of time you CURRENTLY dedicate to the listed activities.

Regardless of the actual quantity of hours you work, please ensure that you represent

the number of hours as a percent of total hours.

___ Teaching/Preparation

___ Scholarly Activity/Research

___ Advising Students (incl. graduate students and experiential students)

___ Administrative Duties (incl. Director/Coordinator activities)

___ Community Service

___ Professional Service (i.e. officer of a professional organization)

___ College/University Service (incl. committee work)

___ Outside Consulting

___ Maintaining a Practice Site

Page 10

Time Allotted to Work Activities

Please indicate the PERCENT of time you would IDEALLY dedicate to these same activities.

___ Teaching/Preparation

___ Scholarly Activity/Research

___ Advising Students (incl. graduate students and experiential students)

___ Administrative Duties (incl. Director/Coordinator activities)

___ Community Service

___ Professional Service (i.e. officer of a professional organization)

___ College/University Service (incl. committee work)

___ Outside Consulting

___ Maintaining a Practice Site

Page 11

Time Spent At Work

On average, how many hours do you work per week?

Please include time spent performing any and all duties listed on the previous page.

[open text box]

Page 12

10. Productivity in Scholarship

Next, please indicate the number of original research and review articles that you have had accepted for publication in peer-reviewed professional journals since January 1, 2002. Only count those articles which have been SUBMITTED AND ACCEPTED (even if not yet in print) after January 1, 2002. Please exclude research that was solely published as part of the proceedings of a professional conference, as letters to the editor, commentaries, books or book chapters, drug monographs, or similar such publications. While the latter are scholarly, please exclude them for the purposes of this study.

Number of refereed original research or review publications =

[open text box]

Self-efficacy for Research

Please rate how confident you are that you can perform the activities listed below by typing in the appropriate WHOLE NUMBER between 0 and 100 on the line to the right of each item. DO NOT leave any item blank and DO NOT insert "N/A" or "0" if an item does not currently apply to you. Remember – we are seeking confidence, not current productivity.

Use the following scale to indicate your degree of confidence:

0 = No confidence, increasing towards 50 = Some confidence and 100 = Extraordinary confidence

Please use any whole number between 0 and 100 to indicate your degree of confidence.

___ Design a research project.

___ Choose appropriate data analysis strategies.

___ Identify areas of needed research, based on the literature.

___ Develop a logical rationale for your particular research idea.

___ Generate researchable questions.

___ Interpret and understand statistical output from appropriate software.

___ Organize your proposed research ideas in writing.

___ Complete a significant project.

___ Deliver research findings at professional seminars/conferences.

___ Discuss research ideas with colleagues.

___ Work with others in a research group.

___ Utilize criticism from reviews of your research.

___ Prepare a manuscript for submission to a refereed journal.

___ Supervise student researchers.

___ Train assistants to collect data.

___ Attend to all relevant details of data collection.

___ Construct reliable data collection methods.

___ Ensure validity in your data collection methods.

___ Prepare a grant proposal.

___ Acquire external funding.

Page 14

Intradisciplinary Consensus

Please indicate the level of agreement WITHIN YOUR DEPARTMENT/DISCIPLINE AT YOUR

CURRENT INSTITUTION on each of the following issues by marking the appropriate number

beside each item. Use the following scale:

 -2 = considerable disagreement

 -1 = slight or modest disagreement

  0 = neither agreement nor disagreement

+1 = slight or modest agreement

+2 = considerable agreement

The sequence of your discipline's course offerings for the

entry-level degree program (ELDP).   -2 -1 0 +1 +2

The basic concepts to teach in your discipline's course offerings for the ELDP.   -2 -1 0 +1 +2

The most effective teaching methods and strategies that facilitate learning

among students in the ELDP.   -2 -1 0 +1 +2

The quantity of outside work assignments given to students in the ELDP by

members of your discipline.   -2 -1 0 +1 +2

The standards required for successful completion of your discipline's

course offerings.   -2 -1 0 +1 +2

The standards for excellence in scholarship in your discipline.   -2 -1 0 +1 +2

The most reputable journals in which to publish in your discipline.   -2 -1 0 +1 +2

The methods of recognition and reward for excellence in scholarship in

your discipline.   -2 -1 0 +1 +2

The requirements for tenure and promotion in your discipline.   -2 -1 0 +1 +2

The qualities to look for in hiring a new faculty member in your discipline.   -2 -1 0 +1 +2

Department decision making as governance (how decisions are made,

level of input by department faculty, etc.).   -2 -1 0 +1 +2

Page 15

Does your institution have a graduate program?

___ Yes (if checked – move to page 16)

___ No (if checked – move to page 17)

Page 16

Intradisciplinary Consensus

Using the same scale as before, please indicate the level of agreement within the

department/discipline at your current academic institution on each of the following issues

concerning your GRADUATE PROGRAM by marking the appropriate number beside each item.

The requirements for successful completion of graduate degrees in

your discipline.   -2 -1 0 +1 +2

The roles of graduate students as teaching assistants.   -2 -1 0 +1 +2

The roles of graduate students as research assistants.   -2 -1 0 +1 +2

99

The nature of graduate student stipends (amount of stipend, limits on the

length of time students may receive stipends, etc.).   -2 -1 0 +1 +2

Teaching methods and strategies in graduate courses.   -2 -1 0 +1 +2

Stress at Your Current Position

Please indicate the level of stress created by each of the following aspects of your current

position by marking the corresponding circle to the right of each item on a scale from 1 = Minimal

Stress to 5 = Considerable Stress.

Fulfilling my role in teaching.   1 2 3 4 5

Fulfilling my role in scholarship.   1 2 3 4 5

Fulfilling my role in service.   1 2 3 4 5

Attaining reward and recognition.   1 2 3 4 5

Lack of time to get everything done.   1 2 3 4 5

My involvement, or lack thereof, in the decision-making processes within

my department.   1 2 3 4 5

Fulfilling my own self-expectations.   1 2 3 4 5

Interactions with students.   1 2 3 4 5

Making a name for myself among colleagues in my discipline.   1 2 3 4 5

Teaching-Research Nexus

This nexus is defined as a symbiotic relationship in which the roles of an academician as a

teacher and a researcher are mutually reinforcing. Essentially, the nexus posits that productive

research begets effective teaching and effective teaching begets productive research. An

opposing view would state that time spent on one activity would detract from the other. Please

indicate your belief in the nexus by marking the appropriate number on the following scale:

-3 = the two roles are conflicting, +3 = the two roles are mutually reinforcing, and 0 = the roles are unrelated.

Belief   -3 -2 -1 0 +1 +2 +3

Effectiveness in Teaching – I

By marking the corresponding number to the right of each item, please report your perceived level of effectiveness on the following activities IN COMPARISON TO YOUR DEPARTMENTAL COLLEAGUES. Student output is defined as the quality of work created by students enrolled in your course. This can be represented by their performance on examinations, written papers, research projects or proposals, or other knowledge-building activities.

Please use the following scale:

1 = Much less/lower than my departmental colleagues (ML)

2 = Somewhat less/lower than my departmental colleagues (SWL)

3 = Slightly less/lower than my departmental colleagues (SL)

4 = Equivalent to that of my departmental colleagues (E)

5 = Slightly more/higher than my departmental colleagues (SM)

6 = Somewhat more/higher than my departmental colleagues (SWM)

7 = Much more/higher than my departmental colleagues (MM)

Student output in entry-level PharmD courses.   1 2 3 4 5 6 7

Student output in graduate courses.   1 2 3 4 5 6 7

Student evaluations of my teaching in entry-level PharmD courses.   1 2 3 4 5 6 7

101

Student evaluations of my teaching in graduate courses.   1 2 3 4 5 6 7

Peer evaluation of my teaching.   1 2 3 4 5 6 7

The number of courses taught.   1 2 3 4 5 6 7

The rigor of my courses.   1 2 3 4 5 6 7

Page 20

Effectiveness in teaching – II

While student evaluation of teaching effectiveness has its limitations, it is nonetheless widely utilized. Considering this, please provide an average score of your TWO (2) most recent student evaluations of teaching (utilizing an "overall" or "average" score, if available) from required entry-level PharmD courses. Please provide your answer in hundredths (2 places past the decimal, for example '3.94 out of 5.00').

Please record your answer as "___.___ ___ out of ___.___ ___"

[open text box]

Page 21

Teaching Workload

Please answer the following questions regarding teaching workload.

Please estimate the total number of credit hours that you were responsible for teaching during the 2004/2005 academic year (15 hours = 1 credit):

___ Undergraduate

___ Graduate

102

How many unique courses/preparations does this number of credit hours represent?

___ Undergraduate

___ Graduate

Self-efficacy for Teaching

As in the previous self-efficacy for research section, please use the same guidelines to rate your

degree of confidence in your ability to perform the following teaching-related activities.

As before, please use the following scale:

0 = No confidence, increasing towards 50 = Some confidence and 100 = Extraordinary confidence

Again, please use any whole number between 0 and 100 to indicate your degree of confidence.

How confident are you in your ability to:

___ Help your students think critically.

___ Provide an alternate explanation or example when students are confused.

___ Craft appropriate examination questions.

___ Adjust your teaching strategies to accommodate various student learning styles.

___ Respond to difficult questions from your students.

___ Adjust your course content to the proper level for students.

___ Employ a variety of effective student learning assessment strategies.

___ Gauge student comprehension of what you have taught.

___ Provide appropriate challenges for very capable students.

___ Control or prevent disruptive behavior in the classroom.

___ Respond to defiant students outside of the classroom.

___ Get students to believe they can do well in your course.

___ Help your students value learning.

___ Motivate students who show low interest in your course.

___ Improve the understanding of a student who is failing.

___ Foster student creativity.

___ Make time to be available to students outside of the classroom.

<u>Page 23</u>

Support from your Institution

Please indicate your level of agreement with the following statements by marking the appropriate

number to the right of each statement.

Use the following scale:

1 = Strongly Disagree (SD)

2 = Moderately Disagree (MD)

3 = Vaguely Disagree (VD)

4 = Vaguely Agree (VA)

5 = Moderately Agree (MA)

6 = Strongly Agree (SA)

My college/university fails to appreciate any extra effort from me.	1 2 3 4 5 6
My college/university strongly considers my goals and values.	1 2 3 4 5 6
My college/university would ignore any complaint from me.	1 2 3 4 5 6
My college/university disregards my best interests when it makes decisions that affect me.	1 2 3 4 5 6
My college/university is willing to help when I have a problem at work.	1 2 3 4 5 6
My college/university really cares about my professional well-being.	1 2 3 4 5 6
My college/university cares about my general satisfaction at work.	1 2 3 4 5 6

If given the opportunity, the college/university would take advantage of me.   1 2 3 4 5 6

My college/university shows very little concern for me.   1 2 3 4 5 6

My college/university cares about my opinions.   1 2 3 4 5 6

My college/university values my teaching contributions.   1 2 3 4 5 6

My college/university values my research accomplishments.   1 2 3 4 5 6

My college/university values my service contributions.   1 2 3 4 5 6

My college/university provides the financial support necessary for my

scholarly endeavors.   1 2 3 4 5 6

Page 24

Support from your Department Chair

In general, how would you describe the support you receive from your department/division chair?

___ Far less than adequate

___ Less than adequate

___ Adequate

___ Exemplary

Page 25

Support from your Dean

In general, how would you describe the support you receive from your dean?

___ Far less than adequate

___ Less than adequate

___ Adequate

___ Exemplary

Personal Data

This information will be used solely in aggregate to report and compare demographic

characteristics of the study population. In no manner will personal information be identified or

published.

Age (years)

[open text box]

Gender

___ Male

___ Female

Ethnic/Racial background

___ Asian

___ Black/African American

___ Hispanic/Latino

___ Native American

___ White/Caucasian

___ Other (please specify)

[open text box]

Academic Rank

___ Instructor/Lecturer

___ Assistant Professor

___ Associate Professor

___ Professor

Is your appointment at your college/school of pharmacy a calendar year or academic year appointment?

___ Calendar (12 months)

___ Academic (9 months)

Current salary at your academic institution (excluding grants, professional writing, etc.)

___ < $65,000

___ $65,000 - $75,000

___ $75,000 - $85,000

___ $85,000 - $95,000

___ > $95,000

___ prefer not to answer

How many students are currently enrolled in the professional phase of the entry-level PharmD program at your institution (i.e. the last 4 years)?

___ < 300

___ 300 – 400

___ 400 – 500

___ 500 – 600

___ > 600

Please select the fundamental nature of the institution you work for:

___ Private

___ Public

Please select the discipline with which you are most closely aligned.

___ Biological Sciences

___ Library Sciences

___ Medicinal Chemistry

___ Pharmaceutics

___ Pharmacology/Toxicology

___ Pharmacy Practice

___ Social and Administrative Sciences (SAdS)

Please indicate whether or not you hold an administrative position at your institution.

___ No administrative position (if checked – move to page 28)

___ Dean (if checked – move to page 28)

___ Assistant/Associate Dean (if checked – move to page 28)

___ Chair (if checked – move to page 28)

___ Director of an office/program (if checked – move to page 27)

Page 27

Personal Data

Are your duties as a director considered part-time or full-time?

___ part-time

___ full-time

Page 28

The End

This marks the end of the survey.

Your participation is greatly appreciated. If you have any questions regarding the results of the study, feel free to e-mail me at conklin942@duq.edu.

APPENDIX C

ELEMENTS OF JOB SATISFACTION SURVEY

Factors Influencing Pharmacy Faculty Quality of Work Life

Directions: Indicate the degree to which each of the factors below contributes toward a pharmacy faculty member's quality of work life at ANY institution. **<u>Do not</u>** base your judgment on how satisfied you are with this aspect of your current position, but how important this factor is in determining your quality of work life in any academic position. In other words, if you were to look for a job with another institution, which factors might play an important role in your decision?

Please circle the appropriate number on the following scale, ranging from **1 = not important at all** to **7 = extremely important.**

It may be tempting to provide very high ratings to each of the factors. While we do not place caveats in the instructions such as limiting the number of items to which you circle "6" or "7", we do ask that you be thoughtful in your evaluations and *judicious* in your use of the upper end of the scale.

Teaching:

1. The academic freedom to select and decide the design, content, objectives, and instructional materials of the course you teach.

2. Teaching methods (lectures, seminars, A/V aids, games) used in the courses offered in your department.

3. The appropriateness of procedures (papers, grades, exams) used to evaluate students in other department courses.

4. The quality of students admitted into your program.

5. The availability of specialized facilities, equipment, & technology needed for teaching in your field.

6. The class size of each pharmacy class admitted.

7. Program for advising professional students.

8. Teaching workload.

9. Clear understanding of the teaching requirements needed for tenure/promotion.

10. The appropriateness of procedures used to evaluate faculty in their courses.

11. Institutional teaching rewards.

12. Availability of competent teaching assistants.

13. The opportunity to mentor graduate students.

14. The courses you are assigned to teach.

Research:

15. Availability of graduate research assistants.

16. Available computer hardware/software to meet your research needs.

17. Clear understanding of the research requirements needed for tenure/promotion.

18. Availability of time to publish and pursue scholarship.

19. Institutional financial support for research.

20. Institutional research rewards.

21. Secretarial and technical assistance.

22. Technical assistance in analyzing data.

23. Opportunities for collaborating within your department.

24. Opportunities for collaborating with scholars outside of your department.

25. Your department's reputation for excellence in scholarship.

26. Financial and academic support for making presentations, attending conferences, seminars, etc.

27. The opportunity for outside consulting.

Service:

28.   Committee workload (including faculty meetings).

29.   Department efforts in support of the career development of faculty members.

30.   Available in-service training opportunities.

31.   Clear understanding of the service requirements needed for tenure/promotion.

32.   Institutional service rewards.

33.   Recognition of excellent service.

General:

34.   Support from your department chair.

35.   Support from your dean.

Additionally, if there are any items that you feel significantly contribute to a pharmacy faculty member's overall job satisfaction that were not included in the above items, please list them below.

1. _____

2. _____

3. _____

4. _____

5. _____

APPENDIX D

PRE-NOTIFICATION E-MAIL

Dear Professor:

My name is Mark Conklin, PharmD. I am a graduate student at Duquesne University working on my master's thesis project under the guidance of Dr. Shane Desselle (Chair), along with Drs. Dana Hammer (U. of Washington), Marc Harrold, Christine O'Neil, and David Tipton. The project employs the use of a self-administered, web-based survey questionnaire to assess pharmacy faculty quality of worklife, productivity, and employment issues.

Next week you will receive a web-based survey questionnaire via e-mail. All full-time pharmacy faculty members currently on AACP's roster are being asked to participate. The e-mail will contain instructions on how to access and complete the survey questionnaire, which is expected to take you approximately 30 minutes to complete.

This study is being undertaken at a critical time of acute pharmacy faculty shortages in the presence of higher demands and increased competition from other disciplines to secure grant funds and publish scholarly works.

If you have any a priori questions or concerns, please feel free to contact me at my return e-mail address.

Kind Regards –

Mark Conklin, PharmD

M.S. Candidate

Duquesne University

Mylan School of Pharmacy

Department of Social and Administrative Pharmacy

APPENDIX E

SURVEY COVER LETTER E-MAIL

Dear Professor –

My name is Mark Conklin, PharmD. I am a graduate student at Duquesne University working on my master's thesis project under the guidance of Dr. Shane Desselle (Chair), along with Drs. Marc Harrold, Christine O'Neil, David Tipton, and Dana Hammer (University of Washington).

You are invited to participate in a survey eliciting data on pharmacy faculty quality of worklife, productivity, and employment issues. Your response will help to further our understanding of various issues affecting pharmacy faculty in a critical time of acute pharmacy faculty shortages and in the presence of higher demands and increased competition from other disciplines to secure grant funds and publish scholarly works.

All pharmacy faculty members in the United States with a valid e-mail address on file with the AACP have been selected to participate in the study. It should take you approximately 30 minutes to complete the survey. <u>Please note that you will be able to complete a portion of the survey, close the internet browser window containing the survey, and return to complete the survey by re-clicking the link below, which will direct you to where you were previously</u>. Also included for your convenience are page numbers allowing you to gauge your progress toward completing the survey. The survey, in its entirety, contains 28 pages; however, many pages are

brief and most of you will skip through certain portions of the survey, depending upon your responses.

The survey questionnaire employs a variety of formats (ratings, rankings, fill-in-the-blank, etc.), so please follow the directions in each section of the survey carefully. Some sections will require a response to each item before you can progress to the next one so as to ensure complete data collection. Those sections requiring a complete response will be marked with an asterisk as you progress through the survey.

Be assured that data will only be analyzed and presented in the aggregate. Your responses will be kept in strict confidence and will not be linked in any manner to your e-mail address. By responding to the survey, you are providing your consent to participate in this project. The project has been exempted from full review by the Duquesne University Institutional Review Board.

We ask that you complete the survey questionnaire by **October 17, 2005.** Thank you in advance for your participation. If you have any questions, please feel free to contact me at my return e-mail address – conklin942@duq.edu.

The survey can be accessed by clicking the following link:

http://www.surveymonkey.com/s.asp?A=97309035E61199

Kind Regards -

Mark Conklin, PharmD

M.S. Candidate

Duquesne University

Please note: If you do not wish to receive further emails from me, please click the link below, and you will be automatically removed from my mailing list.

http://www.surveymonkey.com/r.asp?A=97309035E61199

APPENDIX F

REMINDER E-MAIL (10/06/2005)

Dear Professor -

My name is Mark Conklin, PharmD. I am working on my master's thesis project at Duquesne University under the guidance of Dr. Shane Desselle.

This e-mail serves as a reminder that you have been invited to participate in a survey eliciting data on pharmacy faculty quality of worklife, productivity, and employment issues. Your response will help to further our understanding of various issues affecting pharmacy faculty in a critical time of acute pharmacy faculty shortages and in the presence of higher demands and increased competition from other disciplines to secure grant funds and publish scholarly works.

All pharmacy faculty members in the United States with a valid e-mail address on file with the AACP have been selected to participate in the study. It should take you approximately 30 minutes to complete the survey. ***Please note that you will be able to complete a portion of the survey, close the internet browser window containing the survey, and return to complete the survey by re-clicking the link below, which will direct you to where you were previously. Also included for your convenience are page numbers allowing you to gauge your progress toward completing the survey. The survey, in its entirety, contains 28 pages; however, many pages are brief and most of you will skip through certain portions of the survey, depending upon your responses.

The survey questionnaire employs a variety of formats (ratings, rankings, fill-in-the-blank, etc.), so please follow the directions in each section of the survey carefully. Some sections will require a response to each item before you can progress to the next one so as to ensure complete data collection. Those sections requiring a complete response will be marked with an asterisk as you progress through the survey.

Be assured that data will only be analyzed and presented in the aggregate. Your responses will be kept in strict confidence and will not be linked in any manner to your e-mail address. By responding to the survey, you are providing your consent to participate in this project. The project has been exempted from full review by the Duquesne University Institutional Review Board.

We ask that you complete the survey questionnaire by October 17, 2005. Thank you in advance for your participation. If you have any questions, please feel free to contact me at my return e-mail address - conklin942@duq.edu.

The survey can be accessed by clicking the following link:

http://www.surveymonkey.com/s.asp?A=97309035E61199

Kind Regards -

Mark Conklin, PharmD

M.S. Candidate

Duquesne University

Please note: If you do not wish to receive further emails from me, please click the link below, and you will be automatically removed from my mailing list.

http://www.surveymonkey.com/r.asp?A=97309035E61199

APPENDIX G

REMINDER E-MAIL (10/18/2005)

Dear Professor –

My name is Mark Conklin, PharmD. I am working on my master's thesis project at Duquesne University under the guidance of Dr. Shane Desselle. The project employs a survey questionnaire eliciting your response to questions regarding pharmacy faculty quality of worklife, productivity, and employment issues.

This is a final reminder inviting you to please complete the survey if you have not yet had the chance to do so. Previously, I had indicated that the survey would be closed as of October 17th; however, I have received requests from various faculty members indicating the need for additional time to complete the survey and, thus, I will keep the survey open until **November 1st, 2005**.

It should take you approximately 30 minutes to complete the survey. <u>Please note that you will be able to complete a portion of the survey, close the internet browser window containing the survey, and return to complete the survey by re-clicking the link below, which will direct you to the place in the survey where you left off</u>. Also included for your convenience are page numbers allowing you to gauge your progress toward completing the survey questionnaire. The survey, in its entirety, contains 28 pages; however, many pages are brief (1 question) and most of you will skip through certain portions of the survey, depending upon your responses.

The survey questionnaire employs a variety of formats (ratings, rankings, fill-in-the-blank, etc.), so please follow the directions in each section of the survey carefully. Some sections will require a response to each item before you can progress to the next one so as to ensure complete data collection. Those sections requiring a complete response will be marked with an asterisk as you progress through the survey.

Be assured that data will only be analyzed and presented in the aggregate. Your responses will be kept in strict confidence and will not be linked in any manner to your e-mail address. By responding to the survey, you are providing your consent to participate in this project. The project has been exempted from full review by the Duquesne University Institutional Review Board.

The survey can be accessed by clicking the following link:

http://www.surveymonkey.com/s.asp?A=97309035E61199

Kind regards –

Mark Conklin

M.S. candidate

Duquesne University

Please Note: To decline participation from the survey and remove yourself from my e-mail list, please click the following link:

http://www.surveymonkey.com/r.asp?A=97309035E61199