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# JOB SATISFACTION AMONG ARMY PHARMACISTS

A thesis presented to the Faculty of the U.S. Army  
Command and General Staff College in partial  
fulfillment of the requirements for the  
degree

MASTER OF MILITARY ART AND SCIENCE

by

PETER T. BULATAO, MAJ, USA  
B.S., Duquesne University, Pittsburgh, Pennsylvania, 1986

Fort Leavenworth, Kansas  
1998

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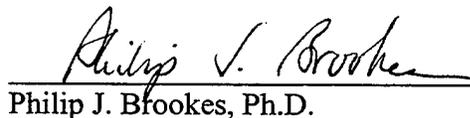
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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

## ABSTRACT

JOB SATISFACTION AMONG ARMY PHARMACISTS by Major Peter T. Bulatao,  
USA, 108 pages.

The purpose of this study was to determine whether active duty Army pharmacists are satisfied with their job and further, to examine factors that may uniquely affect their job satisfaction. Job satisfaction was measured using a modified four-page questionnaire originally developed and validated by Barnett and Kimberlin in 1983. Of the 140 mailed, deliverable questionnaires, 107 usable responses were received for a response rate of 79.3 percent. The data was analyzed using nonparametric statistics. The results of this study suggest that Army pharmacists are satisfied with their jobs and careers, and that job satisfaction is positively related to their clinical pharmacy training.

## ACKNOWLEDGMENTS

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## CHAPTER 1

### INTRODUCTION

...the animals worked like slaves. But they were happy in their work; they grudged no effort or sacrifice, well aware that everything that they did was for the benefit of themselves and those of their kind who would come after them.<sup>1</sup>

George Orwell, Animal Farm

Job satisfaction is a critical element of any work environment. As defined by Edwin A. Locke, "Overall job satisfaction is the sum of the evaluations of the discriminable elements of which the job is composed."<sup>2</sup> In other words, job satisfaction is the extent that a person receives fulfillment or gratification from his or her workplace activities: "...the attitude toward the job as a whole."<sup>3</sup> In spite of the importance of job satisfaction, very limited research and published data exist regarding it as applied to Army pharmacists. The purpose of this study is to determine whether active duty Army pharmacists are currently satisfied with their job and further, to examine factors that may uniquely affect their job satisfaction.

Many factors affect job satisfaction. S. E. Seashore and T. D. Taber categorized causally related factors to job satisfaction as environmental (political and economic environment, occupation, organization environment, and job and job environment) and individual (demography, stable personality, abilities, "situational personality," perceptions, cognitions, expectations, and transient personality traits).<sup>4</sup> Other correlates of satisfaction identified by researchers over the years include: general job role; work setting, work schedule, work environment, and workload; position; compensation and benefits; demographics; security; advancement; supervisor; vacation and holiday

practices; and degree of autonomy. Laurence Siegel lists the following personal characteristics as related to job satisfaction: gender, age, intelligence, experience, and personal adjustment.<sup>5</sup> Locke categorized predictors of job satisfaction as events or conditions, and as agents (see appendix A).

Conversely, job dissatisfaction often correlates with many negative effects. Over the years, studied effects have included absenteeism, work fatigue, burnout, low quality of work, decreased commitment to the profession, turnover, and counterproductive behavior. Any of these consequences are costly; therefore, organizations and managers should obviously attempt to minimize dissatisfaction in order to prevent these undesirable effects.

Dennis W. Organ and Thomas Bateman state that job satisfaction is an important criterion for assessing organizational functioning. One reason is the strong correlations between absenteeism and satisfaction and between turnover and satisfaction.<sup>6</sup>

Absenteeism is an expensive overhead issue. It often decreases organizational productivity and increases payrolls to provide for replacement workers or to pay overtime for employees held over to fill in for the absent workers. Therefore, keeping employees at work is critical. Job satisfaction has been shown to play a large role in that. When important needs are satisfied at the workplace, the resulting highly satisfied worker is motivated to attend work. This leads to low absenteeism, as well as low employee turnover.

A second reason, according to Organ, that management should be interested in job satisfaction is the low, but consistent association satisfaction has with job performance.<sup>7</sup>

Based on the work of Victor H. Vroom, “Individuals are satisfied with their job to the extent to which their jobs provide them with what they desire, and they perform effectively in them to the extent that effective performance leads to the attainment of what they desire.”<sup>8</sup>

Job satisfaction is also important from the standpoint of an organization’s climate. One aspect of an organization’s climate is its humanistic view of its employees. Because “employees are engaged in company activities for more than a third of their waking hours each week,”<sup>9</sup> the work experience should be more or less satisfying, agreeable, and fulfilling. These aspects directly affect an individual’s mental health.<sup>10</sup> Individuals who frequent psychiatrists often cite negative feelings about their work. Further, work dissatisfaction tends to negatively affect relationships between family, friends, and one’s outlook on life. This dissatisfaction can be so great that physical health is affected.<sup>11</sup> An indirect marker of dissatisfaction among pharmacists, for example, is an unusually high rate of suicides.<sup>12</sup> E. H. Powell reports a pharmacist suicide rate that is nearly 3.5 times higher than other professional and white-collar workers.<sup>13</sup>

The interactions between behavior and satisfaction led behavioral scientists to research job satisfaction. Related to the idea of job satisfaction is motivation. What drives people to be satisfied? Several theories of motivation are directly related to job satisfaction: Abraham H. Maslow’s Need Theory, Frederick Herzberg’s Two-Factor Theory, and Expectancy Theory. Additionally, two specific theories about satisfaction are also relevant: Equity Theory and the Porter-Lawler Extension of Expectancy Theory. Theoretical insights will be examined, in detail, in chapter 2.

If the overall high suicide rate among pharmacists is any indicator, low job satisfaction may exist and could also be manifesting among Army pharmacists in terms of both performance and turnover. The question is, Why?

In spite of the broad research about job satisfaction, in general, however, the specific empirical study of pharmacy job satisfaction is not robust. Most of the research available was conducted nearly twenty years ago and consists only of approximately twenty United States studies during the period 1965 to 1982.

Of greatest concern is the questionable generalizability of any conclusions drawn from pharmacy studies conducted prior to the dramatic emphasis in 1989 on change in the pharmacy profession's roles and functions. This process began when pharmacy leaders convened in 1985 at the Pharmacy in the 21st Century (P21) Conference to chart the pharmacy profession's future. At the conference, "the challenge was put out to all pharmacists to aggressively pursue their clinical role."<sup>14</sup> During the second P21 Conference in 1989, Charles D. Hepler and Linda M. Strand<sup>15</sup> introduced the concept of pharmaceutical care. Subsequently, the profession of pharmacy began a period of revolution.

Hepler and Strand's startling commentary defined three different, but not mutually exclusive professional roles for the pharmacy profession, as well as the pharmacy functions and obligations associated with each: traditional, clinical, and patient- care.

According to Hepler and Strand's landmark report, in order to establish pharmacy's future social role as a clinical profession, pharmacy practice needed to

change its emphasis from a heavy reliance and concentration on the dispensing role of the pharmacist (traditional) to one that is much more patient-care oriented.

Among other statistics, Hepler and Strand cited data to support their claim that pharmacists need to change their traditional attitude and behavior of merely dispensing drugs to a more patient-centered one. A 1987 Food and Drug Administration (FDA) report revealed 12,000 deaths and 15,000 hospitalizations due to adverse drug reactions. Further, "Morse estimated the cost of drug related morbidity in the U.S. to be as much as seven billion dollars annually."<sup>16</sup> It was clear, the field of pharmacy required a change in pharmacists' attitudes and behavior to reverse these tragic trends. After considering the financial costs and human suffering associated with inappropriate medication use, it also signaled to pharmacy academia the need for a curriculum change to equip graduates with the cognitive and clinical skills needed to better perform the patient-centered tasks outlined by Hepler and Strand.

The extent to which the Army has embraced the clinically based, patient-centered care practice is somewhat untested. Beyond that, if the relatively new emphasis in academia on patient care is not adopted in practice throughout the Army, what are the implications for job satisfaction among Army pharmacists?

This research aims to investigate the attitudinal reactions to these relatively recent advancements within the profession of Army pharmacy. Specifically, what is the current level of job satisfaction among Army pharmacists in relation to these changes? The changes in practice and educational focus could result in higher job satisfaction due to work that is more mentally challenging, provides greater financial compensation, (etc.).

On the other hand, job dissatisfaction could result from an attitude of perceived inadequacy with regard to clinical education and training and its lack of practice in the Army. No studies currently address or answer these questions.

Army pharmacists experience a myriad of unique work factors without parallel in the civilian sector that may affect quality of life and potentially job satisfaction: deployments, frequent family moves and separations, and relative low pay.

The studies that have been done regarding job satisfaction among pharmacists are over ten years old and represent a different period and practice emphasis within the pharmacy profession. Further, these studies researched satisfaction only in the civilian population. Consequently, there is a need to evaluate whether there is a positive relationship between a pharmacist's level of job satisfaction and: the extent of clinical training and second, the extent of patient care involvement. In essence, are Army pharmacists experiencing job satisfaction?

The following specific research questions are posed: (1) Is there a statistical relationship between job satisfaction and the amount of clinical training of the active-duty Army pharmacist? (2) Is there a statistical relationship between job satisfaction and the amount of clinical involvement of the active-duty Army pharmacist? (3) Is there a relationship between an Army pharmacist's job satisfaction and military career satisfaction? and (4) Are there any statistical relationships between job satisfaction and the individual and job characteristics of the active-duty Army pharmacist?

In the end, the expectation is that the conclusions of this study about Army pharmacist satisfaction will produce evidence that can be used in various ways. If the

relationships addressed by the research questions are positive, for example, then the evidence can be used as part of a national recruiting campaign and disseminated among the current Army pharmacy officer corps to increase esprit de corps and possibly, retention rates. If the relationships are negative, then the evidence may serve as a stimulus for job redesign, where necessary, to ensure that the work is mentally challenging, that patient-centered care is practiced, and that clinical education and training are provided to support a more patient-centered pharmacy practice.

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<sup>1</sup> George Orwell, Animal Farm (New York: New American Library, 1959), 63.

<sup>2</sup> Edwin A. Locke, "What is Job Satisfaction," Organizational Behavior and Human Performance 4 (1969): 309-336.

<sup>3</sup> Dennis W. Organ and Thomas Bateman, Organizational Behavior: An Applied Psychological Approach, 3d ed. (Plano: Business Publications, Inc., 1986), 338.

<sup>4</sup> S. E. Seashore and T. D. Taber, "Job Satisfaction Indicators and Their Correlates," In Measuring Work Quality for Social Reporting, eds. A.D. Biderman and T.F. Drury (New York: John Wiley and Sons, 1976), 89.

<sup>5</sup> Laurence Siegel, Industrial Psychology (Homewood: Richard D. Irwin, Inc., 1969), 344-6.

<sup>6</sup> Dennis W. Organ, The Applied Psychology of Work Behavior, 3d ed. (Plano: Business Publications, Inc., 1987), 91.

<sup>7</sup> *Ibid.*, 92.

<sup>8</sup> Victor H. Vroom, Work and Motivation (Malabar: Robert E. Krieger Publishing Co., 1982), 246.

<sup>9</sup> Siegel, 329.

<sup>10</sup> Organ and Bateman, 337.

<sup>11</sup> *Ibid.*, 338.

<sup>12</sup> C. Anderson Johnson, Richard J. Hammel, and J. Stephen Heinen, "Levels of Satisfaction Among Hospital Pharmacists," American Journal of Hospital Pharmacy 34 (1983): 241-7.

<sup>13</sup> E. H. Powell, "Occupation, Status, and Suicide: Toward a Redefinition of Anomie," American Sociologic Review 23 (1958): 131-9.

<sup>14</sup> Gregory J. Higby, "American Pharmacy in the Twentieth Century," American Journal of Health-Systems Pharmacy 54 (1997): 1814.

<sup>15</sup> Charles D. Hepler and Linda M. Strand, "Opportunities and Responsibilities in Pharmaceutical Care," American Journal of Pharmacy Education 53 (1989): 7S-15S.

<sup>16</sup> *Ibid.*, 8S.

## CHAPTER 2

### LITERATURE REVIEW

“Job satisfaction”?! ...I didn't know those two words went together.<sup>1</sup>

Paul M. Muchinsky, Psychology Applied to Work

Many reasons exist why the measurement of job satisfaction is important. For instance, organizations want to know if an individual's job satisfaction increases an individual's performance and productivity, determines his motivation level, decreases the amount of absenteeism, or increases tenure. In turn, behavioral scientists want to determine the predictive measures of job satisfaction. Consequently, over the years, researchers have developed a number of theories, measures, and methods to determine job satisfaction. Usually, researchers regarded job satisfaction as a complex set of variables as opposed to a single dimension. Scientists used questionnaires, interviews, or surveys to collect their data and measured satisfaction indirectly by inferring responses to one or more questions. The basis of using multiple questions rested on the observation that an individual might be satisfied overall with his work and compensation, but highly dissatisfied with the company policy or benefits. As researchers pursued a more complete understanding of satisfaction, they introduced more variables into their studies. Because of the different orientations of each study and the large, but different number of variables a researcher might desire to examine, the literature reveals little standardization among research methods or instruments.

R. Hoppock's monograph, Job Satisfaction, written in 1935 constituted one of the earliest works studying job satisfaction. Examining the satisfaction level among skilled,

semiskilled, and unskilled workers, he discovered that satisfaction varied with skill or occupational level (i.e., satisfaction increased with increased skill). This work stimulated interest in the subject, resulting in an increase in job satisfaction studies and numerous theories and models describing, determining, and attempting to predict satisfaction.

Early research about job satisfaction was based on Abraham H. Maslow's Need Hierarchy Model.<sup>2</sup> Popular and widely recognized, this 1943 theory suggested that people experience dissatisfaction when needs--Maslow identified five categories of needs: (lowest) physiological, safety, social, esteem, and self-actualization (highest)--are unfulfilled. Later theorists viewed Maslow's three lower needs as extrinsic, or external factors that meet the basic, lower order demands of individuals. When these needs are fulfilled, individuals feel secure and avoid pain. Maslow's two higher-order needs are often categorized as intrinsically related rewards. Depending upon the ambitions of an individual, these higher-order needs, too, are often central to being satisfied. Studies conducted by A. N. Turner and P. R. Lawrence, J. Richard Hackman and Edwin E. Lawler III, and others identified five attributes that largely determine the degree of job satisfaction from the intrinsic rewards. "These attributes are: (1) variety--the extent to which the job requires different operations; (2) autonomy--the degree of worker latitude in choosing work methods, deciding the sequence of operations, and pacing the work; (3) task identity--the extent to which the worker does an "entire piece of work" and can identify the results of the work; (4) feedback generated by the task itself;"<sup>3</sup> and (5) task significance--the perceived importance of the task being done. Intuitively, in professions

such as pharmacy, a large portion of pharmacist satisfaction would be expected to be derived from the attainment of higher order needs associated with these five factors.

Another dominant theory developed to predict satisfaction is the Two-Factor or Motivator-Hygiene Theory (see figure 1). Developed by Frederick Herzberg, this theory classifies work aspects as motivator (or intrinsic) and hygiene (or extrinsic). Herzberg's theory predicts that when motivators are present, individuals experience satisfaction and when absent, a neutral situation results. On the other hand, when hygiene factors are present, the individual feels neutral; often absent, the individuals experience dissatisfaction.

Herzberg<sup>4</sup> defined intrinsic job characteristics as those dealing with the content and tasks involved with completing a job. Examples in addition to those listed in figure 1 include opportunities for self-expression and self-actualization, autonomy, variety, skill, increased responsibility, challenging work, and achievement. Extrinsic factors, on the other hand, relate to the context and environment in which the job is performed. Additional examples of extrinsic factors include status and job security.

Most of the pharmacist job satisfaction research uses Herzberg's theory and differentiates between the intrinsic and extrinsic factors described above and facet-free or facet-specific measures. Facets relate to various aspects of the job. Locke stated that, "A job is not an entity but a complex interrelationship of tasks, roles, responsibilities, interactions, incentives, and rewards. Thus, a thorough understanding of job attitudes requires that the job be analyzed in terms of its constituent elements."<sup>5</sup>

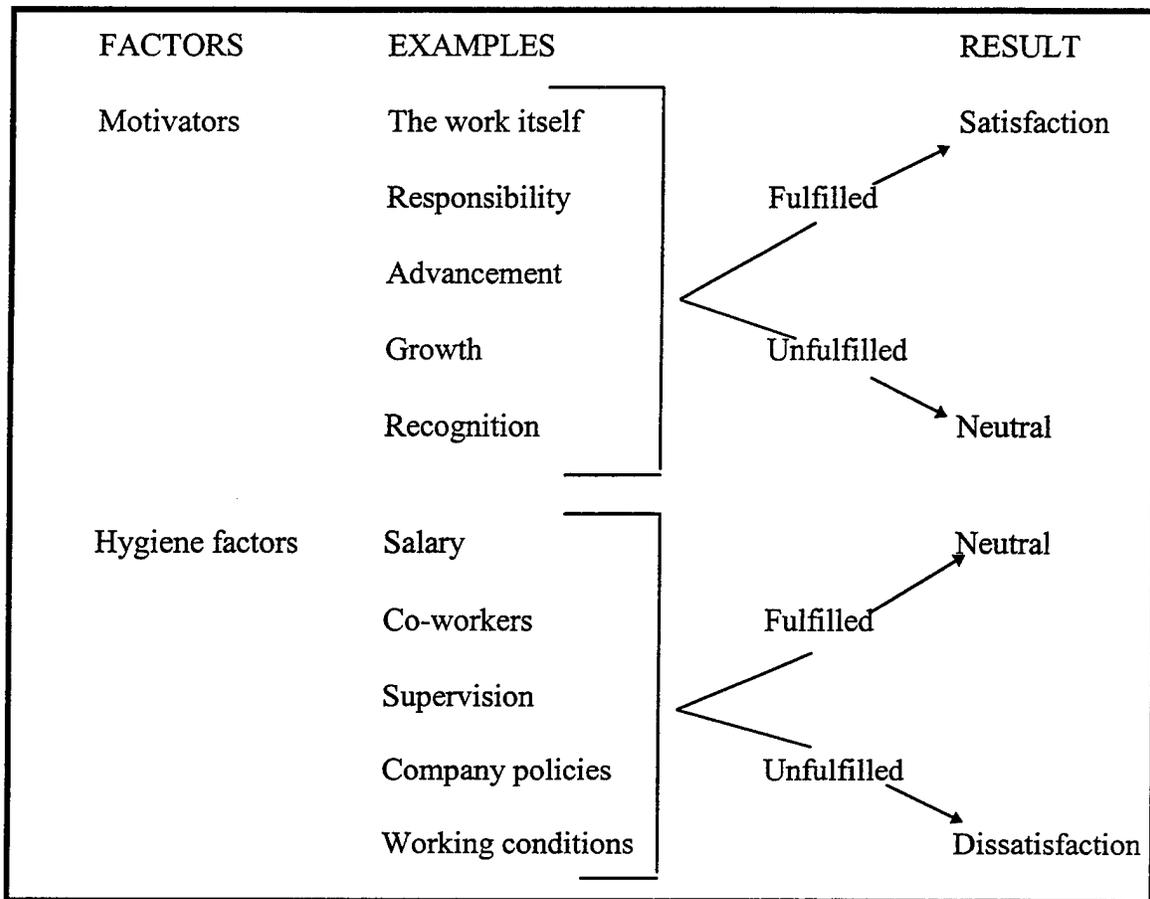


Figure 1. The Motivation-Hygiene Theory. Source: Candace W. Barnett, "How to Correct Employee Behavior Problems in Pharmacy," Pharmacy Management Advisor 4 (1996): 4.

Facet-free measures reflect an individual's overall satisfaction with his or her job and job environment. Facet-free measures include absenteeism, tardiness, and recommendations to younger individuals about whether or not to choose pharmacy, for example, as a career. Facet-free measures provide a means of comparison among different groups of people (e.g., between hospital pharmacists and other professional workers). Facet-specific measures relate satisfaction to specific aspects of the job, such

as advancement, supervision, or compensation. Locke summarized common facets to all jobs that contributed to employee satisfaction in 1976 (see appendix A).

Shifting to another explanation of satisfaction, J. Stacy Adams (1965) proposed Equity Theory.<sup>6</sup> This theory defines satisfaction by the “perceived” equity an individual possesses when that individual compares the ratio of his inputs and outcomes to the ratio of inputs and outcomes for similar others. For example, in 1997, an unmarried second lieutenant Army pharmacy officer with less than two years experience received \$2,241.56 (base pay, basic allowance for quarters, and basic allowance for subsistence) in direct financial compensation each month, or \$26,898.72 per year.<sup>7</sup> Meanwhile, an April 1997 article that surveyed civilian pharmacist salaries reported the national average annual starting salary ranged from \$46,035 (independent pharmacy) to \$55,822 (mass-merchandise).<sup>8</sup> To attain comparable wages in annual starting salary, a single Army pharmacist must achieve the rank of captain and have served for greater than six years (\$46,252.32), or achieve the rank of major and have served for greater than twelve years (\$55,831.92). Additionally, perceived inequity is likely to be even greater when one considers bonus or overtime income, something Army pharmacists are not entitled to receive. To the extent Army pharmacists perceive their compensation as inequitable, dissatisfaction would be expected.

Civilian pharmacists, serving as pharmacy directors, continue to receive greater pay than Army equivalents who have attained the rank of major. When salaries based on this civilian position are compared to similar Army field grade officer positions, civilian pharmacists earn between \$5,000 to \$25,000 more per year.<sup>9</sup>

Salary comparisons based upon educational degrees (Bachelor of Science or Doctor of Pharmacy) reveal that civilian pharmacists with a Doctor of Pharmacy degree earn more money in all practice settings. Beginning in 1993, all Army pharmacists who entered the Army with a Doctor of Pharmacy degree were commissioned as captains, a direct reflection of increased compensation. This practice began in 1993. Given such inequity between civilian and Army salaries and between Bachelor of Science and Doctor of Pharmacy salaries, are Army pharmacists likely to be satisfied?

Unlike the previous behavioral based theories, Expectancy Theory<sup>10</sup> is a cognitive theory of motivation that assumes each person is a rational decision maker who will expend effort on activities that lead to that individual's desired rewards. This theory consists of three major parts: expectancy, instrumentality, and valence (see figure 2). Expectancy is the perceived relationship between effort and outcome. For example, if the relationship is strong that "the harder you try, the better you perform," expectancy would contribute to high motivation.

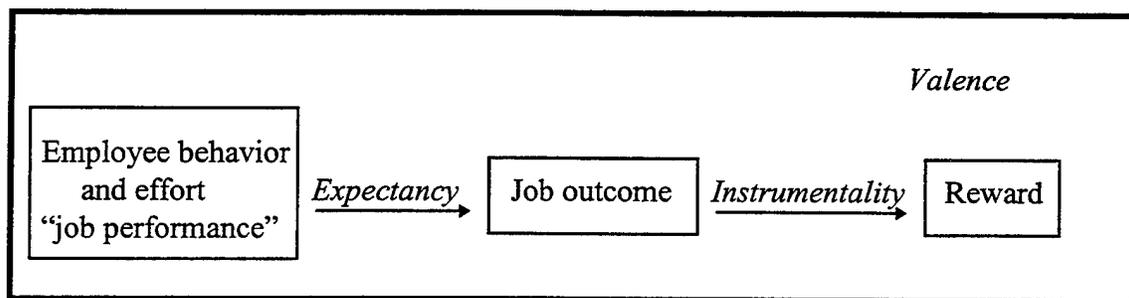


Figure 2. Expectancy Theory.

Instrumentality links the job outcome to the reward; it is the extent to which a person believes that “if I do it, I will get the established reward.” Instrumentalities are often thought of as a probability ranging from zero to one. An instrumentality of zero means that the job outcome is totally unrelated to the reward. Conversely, an instrumentality of one means that the reward is totally conditional to the job outcome.

Based on the job or performance outcome, an organization provides rewards. These may be: pay increases, promotions, vacations. Valence is the degree to which an employee values the designated reward.

According to Expectancy Theory, motivation is the consequence of all three direct elements: expectancy, instrumentality, and valence. Army pharmacists lacking any one of these elements would be expected to have low motivation.

The Porter-Lawler Extension of Expectancy Theory (see figure 3) takes this theory one step further by adding a satisfaction component. This extension predicts individual satisfaction when one “perceives” the reward received or expected is consistent with the expended effort and resulting performance. For example, if one studies for an exam, one expects to receive a higher grade. Or, consider the example when an individual designs and implements a new pharmacy service (e.g., opens a satellite pediatric pharmacy). If this service is well received by the hospital’s customers and hospital administration, then one expects to receive some award (e.g., a commendation award for achievement). Once received, satisfaction results which leads perhaps, to a cycle of greater effort that leads to accomplishing more and gaining increased rewards. In many ways, Porter and Lawler have combined Expectancy and Equity Theories.

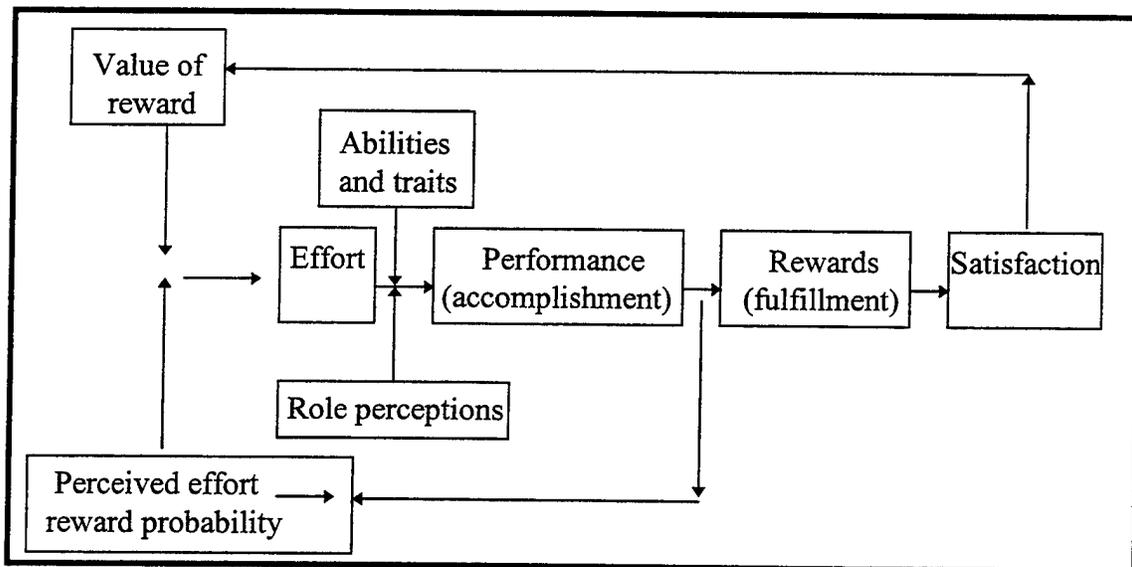


Figure 3. Expectancy Theory: The Porter-Lawler Extension. Source. Dennis W. Organ and Thomas Bateman, Organizational Behavior: An Applied Psychological Approach, 3d ed. (Plano: Business Publications, Inc., 1986), 124.

The empirical studies associated with general job satisfaction using these major theories are extensive. Over the years, researchers published greater than three thousand articles.<sup>11</sup> The number of published pharmacy job satisfaction studies is less abundant. The following sections summarize several relevant pharmacy job satisfaction studies. They are organized, chronologically, by applicable research question. Examined first are studies that address the relationship between job satisfaction and clinical involvement.

#### Job Satisfaction and Clinical Involvement

Robert E. Williamson and Hugh F. Kabat (1972) published one of the first pharmacy job satisfaction studies. They surveyed intrinsic and extrinsic job factors among all full-time practicing hospital pharmacists (n = 221) in Minnesota using a modification of the job satisfaction questionnaire developed by the Management Institute

of the University of Wisconsin Extension Division.<sup>12</sup> Williamson and Kabat studied the broad categories of economic remuneration, working environment, and achievement potential. Even with only a 58 percent response rate among chief pharmacists and staff pharmacists, the authors found that, in general, hospital pharmacists were dissatisfied with their work. Responding pharmacists stated they were most satisfied with the humanitarian, challenging, and professional aspects of their job that extensively used their education and knowledge. In addition, 97 percent of the pharmacy directors and 86 percent of the staff pharmacists replied that they would provide greater benefit to the patient if their functions involved clinical pharmacy or pharmacy consultations.<sup>13</sup>

Dissatisfying characteristics of their work included poor pay, especially in comparison to nonhospital pharmacists, boring and monotonous work, low advancement potential, and lack of patient and physician interaction.

Hence, beginning with this study, one of the earliest about pharmacy job satisfaction, evidence exists that pharmacists expressed a desire to perform and provide clinical pharmacy services. Moreover, pharmacists experienced high satisfaction when they put into practice the clinical, patient-centered approach learned during their college training.

C. Anderson Johnson, Richard J. Hammel, and J. Stephen Heinen (1977) used the University of Michigan facet-free factors instrument and the Minnesota Job Satisfaction Questionnaire (MJSQ) facet-specific instrument to survey Minnesota pharmacists (n = 195).<sup>14</sup> A total of 132 pharmacists from a five county area completed the survey (68 percent response rate).

The results of this study revealed that pharmacists were less satisfied with their job when compared to a random sample of nonpharmacists consisting of professionals, managerial, and nonprofessional workers who responded to the same survey instrument in 1969 and 1973. Seventy percent responded that they would strongly recommend against or have doubts about recommending pharmacy as a career to their son or daughter. Sixty-four percent stated that if they had it to do over again, they would either definitely not, or have second thoughts about going into pharmacy. The average response to the general job satisfaction questions on the MJSQ was 2.53 (standard deviation = 0.72) on a five-point Likert scale ranging from extremely satisfied (5) to not at all satisfied (1). Moreover, none of the mean scores on the thirteen measured dimensions (ability usage, advancement, work challenge, company aims and plans, company policies and practices, staffing, compensation amount, compensation comparison, compensation practices, feedback, supervisor's competence, supervisor relationships, and general satisfaction) of the MJSQ reached 3.0 (satisfied). Pharmacists identified and were least satisfied with the following characteristics of their work: lack of opportunity for advancement, staffing practices, company policies, and compensation.

The authors hypothesized that satisfaction would be greater among supervisors than staff pharmacists because of greater intrinsic factors. These included more challenging work, esteem, and autonomy. Using facet-specific questions from the MJSQ, the results supported this hypothesis. They discovered that satisfaction varied when related to job type: the mean general satisfaction for directors and assistant directors was 2.75; supervisors, 2.50; and staff pharmacists, 2.41 ( $p < 0.05$ ). Of particular interest was

the determination that clinical pharmacists possessed the highest general satisfaction level (3.00,  $p < 0.05$ ). These pharmacists also possessed the highest mean score regarding professional usage and development (3.11). Conversely, staff pharmacists possessed the lowest mean score (2.30). The authors concluded that the high level of autonomy afforded clinical pharmacists produced their high level of satisfaction. On the other hand, staff pharmacists, who according to the researchers are the least autonomous hospital pharmacist, possessed the least satisfaction.

From Johnson, Hammel, and Heinen's research, the following observations are made: while pharmacists were dissatisfied in general, pharmacists who self-rated themselves as clinical pharmacists experienced the greatest satisfaction; and, pharmacists who used their educational skills and abilities more possessed the highest satisfaction among the studied types of pharmacists.

Gerald R. Donehew and F.C. Hammerness (1978) surveyed forty-four pharmacists from fourteen third-party institutionally operated ambulatory pharmacies in Denver, Colorado, to determine hygiene-motivator job factors and overall job feelings. The authors stated, "High attitudinal feelings are associated with advancement opportunities, work autonomy, supervisory skills, group cohesion, skill utilization, job difficulty, higher-level jobs, age, years in position, and productivity. Low attitudinal feelings are associated with lower-level jobs, work alienation, lack of decision-making opportunities, job codification, lack of ability to disagree with a supervisor, and desire for job change."<sup>15</sup> The authors used a forty-eight question survey to measure hygiene-motivator factors among the pharmacists grouped by pharmacy, position--supervisor or

staff--and years in position. Hygiene factors that were measured included: company policy and administration, supervision, interpersonal relationships, working conditions, salary, status, and security. Motivator factors that were evaluated included: achievement, recognition for achievement, the work itself, responsibility, and growth.

Thirty-two staff pharmacists and twelve supervisors completed the survey. The authors discovered that supervising pharmacists possessed greater satisfaction than staff pharmacists, especially in the hygiene factors. Motivator factors had a minimal effect on satisfaction. The authors felt that the environment in which the pharmacists worked contributed to the small effect. They believed that a greater use of automation for the mechanical aspects of dispensing a prescription (as well as the use of nonpharmacists for other nonjudgmental functions) would permit pharmacists to concentrate on judgmental tasks, such as patient counseling, profile review and evaluation, and communication with other healthcare personnel. Donnehew and Hammerness suggested that if "pharmacists could become more clinically involved so that they could challenge their intellectual abilities,"<sup>16</sup> greater satisfaction would result.

Frederic R. Curtis, Richard J. Hammel, and C. Anderson Johnson<sup>17</sup> (1978) surveyed 1971, 1973, and 1975 pharmacy graduates from eight different pharmacy schools and four different practice settings: hospital/clinic, community-independent, community-chain, and apothecary. (Although not defined by the authors, an apothecary is generally understood as a pharmacy that sells only health-related products, such as prescription and over-the-counter medications, and offers traditional professional services such as compounding.) Curtis and others primary objective was to study facet-specific

aspects of job satisfaction for hospital pharmacists relative to community pharmacists. A secondary objective of the study was to determine facet-free aspects of job satisfaction for pharmacists relative to workers in the general working population.

Responses from 741 individuals (70 percent) were compared to the findings of Johnson and others<sup>14</sup> and a 1973 University of Michigan job survey of the general population. Their study revealed that 65 percent of the pharmacy respondents answered "very often" or "pretty often" when asked how often they left work with a good feeling that they had done something well. This compares to 78 percent of the general population determined in the 1973 study, and only 48 percent in the Johnson and others study of Minnesota pharmacists. This finding suggests that hospital pharmacists may possess a lower sense of achievement (a motivator) at work when compared to the general population. As an aggregate, pharmacists also were less likely than the general population to recommend their job to others. Also, related perhaps, was data suggesting that nearly 51 percent indicated that they would prefer some other job to the job they had now, and nearly 46 percent indicated a preference for job migration (i.e., somewhat likely or very likely to make a genuine effort to find a new job with another employer within the next year). On the other hand, responses from apothecary pharmacists indicated that their level of satisfaction achievement was similar to, or greater than the general work force. Perhaps due to their greater satisfaction, apothecary pharmacists were less likely to make a genuine effort to seek a new job than other community or hospital pharmacists, or the general working population.

The research also revealed that facet-specific satisfaction levels differed among the four practice settings. In all measures of intrinsic (work challenge, ability utilization, feedback, and opportunity for advancement) and extrinsic (company aims and plans, compensation, staffing, and supervision) factors of satisfaction, apothecary pharmacists scored the highest. The authors attribute this finding in part to a practice environment with a greater professional and person orientation.<sup>18</sup>

Lastly, using a stepwise regression analysis, the authors found that ability utilization ( $F = 73.65, p < 0.001$ ) and work challenge ( $F = 51.77, p < 0.001$ ) were the greatest predictors of general job satisfaction. This study indicates that pharmacists who work in professional environments that utilize their educational skills and abilities possess greater satisfaction than those who do not.

Michael W. Noel, Richard J. Hammel, and J. Lyle Bootman<sup>19</sup> (1982) surveyed Phoenix and Tucson, Arizona, hospital pharmacists and pharmacy support personnel ( $n = 270$  and  $208$ , respectively) using sixteen questions from the University of Michigan Survey of Working Conditions to measure overall job satisfaction (facet-free), and thirty-nine questions to measure the thirteen MJSQ job satisfaction facet-specific facets. The authors drew conclusions based upon 202 returned surveys (75 percent response rate). Each facet was measured using a five-point Likert scale: not satisfied (1), satisfied (3), extremely satisfied (5).

Overall, pharmacists' responses scored over three on two facets: ability utilization ( $3.01 \pm 1.05, p < 0.01$ ) and general satisfaction ( $3.09 \pm 1.0, p < 0.001$ ). However, when categorized by position, the data revealed that pharmacists who classified

themselves as clinical or research pharmacists possessed the highest general satisfaction score ( $4.38 \pm 0.52$ ,  $p < 0.001$ ) resulting from high scores on ability utilization ( $4.00 \pm 0.87$ ,  $p < 0.001$ ) and work challenge ( $4.22 \pm 0.67$ ,  $p < 0.001$ ). By comparison, staff pharmacists reported the lowest satisfaction ( $2.88 \pm 0.93$ ,  $p < 0.001$ ) due to perceptions regarding a lack of ability utilization ( $2.74 \pm 0.95$ ), work challenge ( $2.58 \pm 0.83$ ), advancement ( $2.54 \pm 0.94$ ,  $p < 0.001$ ), and inadequate compensation ( $2.42 \pm 1.03$ ,  $p < 0.001$ ). In all thirteen facet specific measures, staff pharmacists failed to achieve a mean score of three, or greater. Noel and others also reported data on directors, a position that many Army pharmacists often attain. Pharmacy directors reported the second highest in general satisfaction ( $3.71 \pm 1.00$ ,  $p < 0.001$ ), ability utilization ( $3.79 \pm 0.97$ ,  $p < 0.001$ ), and work challenge ( $3.78 \pm 0.95$ ,  $p < 0.001$ ). Pharmacy directors also possessed the highest mean scores in company plans and goals, company policies and practices, staffing, compensation, and feedback.

Regarding facet-free indicators of satisfaction, 63 percent answered “very often” or “pretty often” when asked how often they left work with a good feeling that they had done something well. This compares nicely with the 65 percent response from the Arizona pharmacists when asked the same question four years earlier in the Curtis and others study. As for “preference for some other job” and “preference for job migration,” both showed a decline.

Nonetheless, in this study, clinical pharmacists clearly possessed the greatest satisfaction. This finding was attributed to their performing more patient care activities such as interacting with patients and health care staff. Staff pharmacists, on the other

hand, possessed the lowest job satisfaction due largely, it was concluded, to the greater portion of their time performing clerical and drug distributive tasks. The authors also concluded that the "role of the staff pharmacist must be expanded to include some of the challenging functions presently performed by clinical pharmacists."<sup>20</sup> In order to provide for those functions, however, the need for adequate training was acknowledged.

William G. Quandt, Patrick L. McKercher, and Douglas A. Miller (1982) evaluated the relationship between job content and hospital pharmacists' job attitudes.<sup>21</sup> This group of researchers surveyed 507 pharmacists in southeastern Michigan using a 152-item questionnaire based on the Michigan Organizational Assessment Questionnaire (MOAQ). The MOAQ includes measures for job dimensions, psychological states, individual differences, and personal and work outcomes.

Tasks associated with clinical duties included the following: accompany physician on rounds, prescribe or recommend medications, provide drug therapy consultations, provide drug information consultations, present lectures to physicians, and inservice teaching to hospital staff. Tasks associated with an inpatient pharmacy included: dispense intravenous medications, check and correct medication carts, screen drug orders, prepare intravenous solutions, transcribe orders, and revise and update medication profiles. Categorically, the tasks associated with clinical pharmacy impact the provision of a medication order (mental tasks), while the tasks associated with hospital pharmacy involve the processing of a medication order (mechanical tasks).

In twenty-three of the thirty-four subscales, and in thirteen of the fourteen significantly different subscales, clinical pharmacists averaged the highest score. Clinical

pharmacists possessed the highest mean job satisfaction score ( $5.71 \pm 1.00$ ,  $p \leq 0.001$ ; scale ranged from one to seven, least to most positive, respectively), and experienced greater autonomy in their activities and controlling their work pace. They also viewed their work as challenging and meaningful, with plenty of interpersonal contact with patients and physicians. Inpatient pharmacists on the other hand, possessed the lowest satisfaction score ( $4.61 \pm 1.32$ ,  $p \leq 0.001$ ), as well as lower levels of freedom, pace control, challenge, and contact with others relative to clinical counterparts.

These results suggest that pharmacists spending the majority of their time performing clinical, nonadministrative functions perceive their job more positively than pharmacists categorized as inpatient, outpatient, or generalist and who perform more distributive, administrative tasks. Consequently, the authors suggested that hospital managers must strive to restructure work responsibilities and functions to incorporate the positive features of a clinical practice into other areas of pharmacy service.

Candace W. Barnett and Carole L. Kimberlin (1984) developed and validated a survey instrument to specifically assess a pharmacist's job and career satisfaction, the job factors that correlate with job and career satisfaction, and the combination of employee and employment factors most predictive of job satisfaction.<sup>22</sup> Job and career satisfaction, the dependent variables of this research, were defined by fifteen constructs. These included, for example: autonomy, compensation, general job role, and others. Barnett and Kimberlin mailed their questionnaire to two thousand Florida pharmacists and received seven hundred forty usable responses (response rate of 37 percent).

Their results revealed a mean job satisfaction score of 3.41 (based on a five-point Likert scale with five representing the highest level of satisfaction) with a standard deviation of 0.99. The mean career satisfaction score was 3.09 with a standard deviation of 1.14.

The intrinsic variable most closely associated with job satisfaction was general job role, or the opportunity to make use of skills and abilities and the presence of challenge in the work.<sup>23</sup> This factor also was most closely associated with career satisfaction. Overall, the results from Barnett and Kimberlin's study suggested that pharmacists with high levels of job satisfaction possessed the following characteristics: (1) a job providing the opportunity to use one's skills and abilities, and providing challenging work; (2) a job with an appropriate workload; (3) good social relationships with co-workers on the job; (4) older age; and (5) higher salary.

Pharmacists with higher levels of career satisfaction possessed the following characteristics: (1) a job providing the opportunity to use one's skills and abilities, and providing challenging work; (2) higher salaries; (3) the opinion that pharmacists should not unionize; and (4) patients and customers who expressed appreciation, courtesy, and respect.

The link between clinical involvement and job satisfaction is not unique to American pharmacists. Peter Humphrys and Gordon E. O'Brien (1986) reported that skill utilization accounted for 32 percent of the variance in job satisfaction among South Australian pharmacists.<sup>24</sup> The researchers noted the impact of technology on pharmacy practice since drug companies had assumed the manufacturing role of drugs replacing the

community pharmacists. Because Australian community pharmacists are product oriented, the authors hypothesized that this change of product manufacturing would result in greater dissatisfaction among community versus hospital pharmacists. Their data supported this claim. Of note, is that as the need for pharmacists to compound drugs decreased, the need for pharmacists to possess an increased clinical knowledge base increased. Consequently, the Australian pharmacy schools changed their course structure to emphasize the new knowledge requirements.<sup>25</sup>

This change is not unlike what American pharmacists experienced. Prior to World War II, pharmacists used their specialized skills and knowledge compounding drugs and medicines pursuant to a doctor's prescription. However, the large scale production of penicillin and other drugs marked a turning point in American pharmacy. Drug manufacturing companies began to slowly erode the pharmacist's position as the compounder of medicines, and wedged themselves between the doctor-pharmacist relationship by using medical representatives, who also acted as a source of drug knowledge.

Today, as pharmacists transition to pharmaceutical care, clinical activities replace distributive ones. To support this transition, pharmacists require clinical education and training. Humphrys and O'Brien's study demonstrates that when pharmacists use their specialized knowledge and skills satisfaction increases.

#### Pharmacist's Functions and Obligations

Given the theoretical foundations of motivation, it is not surprising to find, empirically, that job satisfaction is related to clinical involvement. But before addressing

the empirical evidence linking job satisfaction and education, it is useful to examine, in detail, the dramatic changes which have occurred in the field of pharmacy. These changes, in 1989, led directly to changes in pharmaceutical education, and pharmacy practices since then.

As mentioned in chapter 1, Hepler and Strand's startling commentary in 1989 defined three different, but not mutually exclusive professional roles in the pharmacy profession, as well as the pharmacy functions and obligations associated with each: traditional, clinical, and patient-care. For the "traditional" role, "the pharmacist's function is procuring, preparing, and evaluating drug products. His primary obligation is to ensure that the drugs he sells are pure, unadulterated, and prepared *secundum artem*, although he has a secondary obligation to provide good advice to customers who ask him to prescribe over the counter."<sup>26</sup>

"Clinical" pharmacy practice is the second role of a pharmacist. The focus in this role is drug use control (i.e., drug delivery without regard to any social responsibility to a patient). This means, for example, that the pharmacist optimizes the drug dose using pharmacokinetic models, but makes no determination whether the drug being used is the "best" drug for the patient's medical condition. For example, pharmacists optimize aminoglycoside drug doses after consideration of the patient's gender, ideal body weight, concomitant disease states, and kidney function. However, consideration for the optimized dose does not necessarily mean that consideration is given to determine whether the aminoglycoside, an antibiotic active against gram-negative organisms, is best when prescribed for an infection caused by gram-positive bacteria.

The last role defined by Hepler and Strand was “patient-care.” This role shifts the focus of pharmacists from the provision of drugs to the provision of rationale drug therapy. A key component of this emphasis is the pharmacist’s responsibility to work with the patient and other health care professionals to design, implement, and monitor a drug therapy plan to resolve the patient’s medical condition and prevent potential drug related problems. This includes “(i) identifying potential and actual drug-related problems; (ii) resolving actual drug-related problems; and (iii) preventing drug-related problems.”<sup>27</sup> Summarizing, Hepler and Strand stated: (1) drug therapy involves risks, to include preventable morbidity and mortality, (2) the associated costs are great and may exceed the cost of the drug therapy itself, and (3) pharmaceutical services aimed at detection, prevention, and resolution of drug-related problems can improve the effectiveness and outcomes of drug therapy and hence, decrease the overall cost of health care.<sup>28</sup>

To better support these patient-centered care functions, the American College of Apothecaries, American Pharmaceutical Association, American Society of Consultant Pharmacists, American Society of Hospital Pharmacists, National Association of Boards of Pharmacy, and the National Association of Retail Druggists agreed that pharmacists need to possess a strong clinical acumen in pharmaceuticals and clinical pharmacology.<sup>29</sup> Though seemingly insignificant, this agreement represented a dramatic new trend and sea-change in the way pharmacy would be practiced in the future. In response, the American Association of Colleges of Pharmacy (AACCP) House of Delegates approved, in 1992, a position statement supporting “a single entry-level educational program at the

doctoral level” (Pharmacy Doctor or Doctor of Pharmacy).<sup>30</sup> Immediately thereafter, schools of pharmacy throughout the United States reengineered their curriculums to comply with the AACP position on education. By 2005, students who graduate with a Bachelor of Science in pharmacy will be ineligible to take the National Boards of Pharmacy Licensure Examination.

There is considerable evidence demonstrating a shift in practice has occurred from being a mixture of a predominately traditional- and clinical-based practice, to one that is predominantly patient centered. One piece of evidence is the amount of time devoted to dispensing drugs versus providing patient education. One study conducted in 1978 indicated that pharmacists spent 61 percent of their time on “traditional” dispensing activities, such as receiving and processing the medication order. According to the study, pharmacists spent only 6 percent of their time, then, on “patient centered” education. Replicating this study sixteen years later, in 1994, revealed that pharmacists spent slightly less time with “traditional” dispensing (55 percent), and significantly more time (21 percent) performing “patient centered” tasks, such as providing patient education, drug information, and medication management.<sup>31</sup>

#### Job Satisfaction and Education

Kenneth W. Kirk and Alan P. Wolfgang (1983) mailed 1,550 Texas pharmacists an eight-page questionnaire aimed at identifying causes of job stress determining their job and career satisfaction levels.<sup>32</sup> They received 640 returned questionnaires (response rate of 42 percent). Fifty-four job situations were developed by the Texas Pharmacist Association (TPA) Task Force on Women in Pharmacy, representing typical pharmacist

duties thought to cause stress. Kirk and Wolfgang's analysis revealed that hospital pharmacists possessed high stress levels regarding growth opportunities and job responsibilities, as well as a factor categorized as "clinical orientation." The authors believed that this may have been due to a lack of confidence in performing clinical activities, or that the clinical activities required skills or knowledge beyond the individual's capability. Stress was found related to other job characteristics including job advancement, ability utilization, and job challenge. As perceived stress levels increased, job and career satisfaction decreased.

Concerning job satisfaction, the authors discovered that chain pharmacists (e.g., Eckerds, Walmart, etc.) were less satisfied than hospital pharmacists. Independent pharmacists were the most satisfied. Using a four-point Likert scale with one equaling very satisfied and four very dissatisfied, the authors evaluated job satisfaction to eight job aspects. With the exception of location in the city, hospital pharmacists scored less than satisfied on the remaining seven job aspects. Hospital pharmacists were least satisfied with career growth potential, management policies, and work challenge. This comparison of staff versus owner/director/managerial positions revealed that staff pharmacists possessed greater dissatisfaction on six of the eight job aspects measured.

Kirk and Wolfgang's research highlights pharmacists gaining greater satisfaction when their skills and abilities are used more fully. It also points out that pharmacists experience stress regarding clinical orientation when low confidence or ability exists to perform clinical tasks. Consequently, pharmacists with more clinical education, and the

confidence gained during clinical educational training, may experience positive benefits (i.e., increased satisfaction and decreased stress).

Norman V. Carroll, W. Gary Erwin, and Mark A. Beaman (1984) evaluated the effects of education on job satisfaction while evaluating the implications of moving towards the entry level Doctor of Pharmacy degree.<sup>33</sup> They compared the practice patterns and job satisfaction of California Doctor of Pharmacy graduates with non-California Doctor of Pharmacy graduate practitioners. The authors chose California Doctor of Pharmacy graduates since that was the predominant degree awarded by the California schools of pharmacy for the past twenty years. Consequently, they felt that the practice patterns of these pharmacists would best approximate the national practice patterns of pharmacists if all schools adopted the Doctor of Pharmacy as the entry level degree.

The authors surveyed two hundred twelve California and two hundred fifty non-California pharmacy school graduates from the years 1973, 1978, and 1982. The researchers received a response rate of 68 percent from the California graduates and 72 percent from the non-California graduates. Their results indicated that California Doctor of Pharmacy pharmacists are more likely employed in staff community or hospital pharmacies, rather than clinical positions. California pharmacists also spent more time performing distributive functions. Lastly, California graduates reported a statistically significant lower level of general job satisfaction, among both intrinsic and extrinsic factors.<sup>34</sup>

The authors sought to determine if work activities caused the difference in job satisfaction. The results of this analysis revealed that the percent of work time spent performing drug distributive functions was significantly, and negatively, associated with general and intrinsic satisfaction. In addition, the researchers discovered that when they controlled for the time spent in distributive work, the two groups showed no significant differences in general or intrinsic satisfaction. Hence, the results of this study demonstrate that pharmacists who spend the majority of their time performing work activities associated with drug distribution experience less job satisfaction.

Another implication of this study is that as pharmacy schools graduate more Doctor of Pharmacy educated pharmacists, these pharmacists may be overtrained for the positions in which they serve. As a consequence, over time more pharmacists may experience job dissatisfaction due to low skill use involving clinical tasks.

Fred M. Cox and Norman V. Carroll (1988) investigated the job satisfaction of entry level Doctor of Pharmacy and Bachelor of Science level graduates serving in community and hospital practice<sup>35</sup> Cox and Carroll's data indicated that in community pharmacy practice, both Doctor of Pharmacy and Bachelor of Science pharmacists spent the greatest portion of their time in drug distribution (Doctor of Pharmacy mean = 62 percent, standard deviation = 23.6; Bachelor of Science mean = 49 percent, standard deviation = 23.6). Bachelor of Science pharmacists reported spending more time in direct patient care (Bachelor of Science mean = 15.0 percent, standard deviation = 16.8; Doctor of Pharmacy mean = 5.4 percent, standard deviation = 7.6). Differences between the two groups in percent time spent in these two work activities were significant ( $p \leq 0.05$ ).

While no significant difference was noted in the hospital setting regarding time spent with drug distribution, the two groups did differ significantly, in the amount of time spent performing direct patient care (Doctor of Pharmacy mean = 12.9 percent, standard deviation = 18.4; Bachelor of Science mean = 4.7 percent, standard deviation = 10.3).

General, intrinsic, or extrinsic job satisfaction between entry Doctor of Pharmacy and Bachelor of Science pharmacists did not significantly differ in either practice setting. However, Doctor of Pharmacy pharmacists scored higher than their Bachelor of Science counterparts except for intrinsic satisfaction in the hospital setting.

This study illustrates that job satisfaction is more a function of work activities; further, it suggests that type of degree is not important. Clinical training, however, did encourage more direct patient care in hospital settings, but not in community practice. This may be due to the clinical orientation of Doctor of Pharmacy programs of that era on inpatient pharmacy practice (i.e., pharmacokinetics, total parenteral nutrition, etc.). Not addressed by this study is the degree of effect on job satisfaction during academia's transition from the entry level Bachelor of Science to Doctor of Pharmacy degree. Lack of the doctorate status may relegate Bachelor of Science pharmacists to less meaningful tasks and self-actualization, and hence, less satisfaction. It may also result in lower self-esteem.

Data from Nancy F. Fjortoft and Mary W.L. Lee's (1995) study of activities and satisfaction of Bachelor of Science and Doctor of Pharmacy degree pharmacists appears to indirectly validate this statement. Fjortoft and Lee sought to determine the percent of time Bachelor of Science and Doctor of Pharmacy pharmacists spent performing

prescription processing, clinical activities, management, and educating, and the level of intrinsic and extrinsic job satisfaction. Using a mail questionnaire, they mailed surveys to 245 Bachelor of Science and 325 entry-level Doctor of Pharmacy graduates from the University of Illinois.<sup>36</sup> The response rate was 65 percent and 54 percent, respectively.

Univariate tests of their data indicated that Doctor of Pharmacy pharmacists were spending significantly less time in processing prescriptions, and significantly more time performing clinical activities and education than Bachelor of Science pharmacists.

Doctor of Pharmacy pharmacists also possessed a higher intrinsic job satisfaction score.

The results of some earlier studies evaluating pharmacy degree and job satisfaction indicate that the work activities, and not the degree, determine job satisfaction. However, the practice site may be the determining factor of the types and quantities of activities performed by pharmacists.

#### Army-Related Literature

The extent to which the Army has embraced the clinically-based, patient-centered care practice is somewhat untested. Beyond that, if the new emphasis on patient-centered care is not adopted, what are the implications for job satisfaction? Will dissatisfaction result from Army pharmacists due to perceived unfulfilled professional obligations if traditional drug dispensing is emphasized in the Army while the majority of the pharmacy practitioners transition to a patient-centered care practice? These are empirical questions.

Interestingly, in the case where a study in the Armed Forces has been conducted recently (1991), the Air Force pharmacy practice revealed that a majority of pharmacists were not spending substantial time on patient-centered care.<sup>37</sup> While Air Force

pharmacists perceived all related tasks to be of some importance, patient care tasks rated lowest importance. Conversely, “traditional” dispensing tasks rated highest. In contrast to the pharmacy field at large, Air Force pharmacists were not completely convinced of the importance of assessing therapeutic or patient outcomes. It seems possible, even likely, that Air Force pharmacy practice parallels Army pharmacy practice. Both services operate in similar environments with limited budgets and personnel. They both operate high-volume outpatient pharmacies that receive command attention and emphasis on the rapid dispensing of outpatient prescriptions. This emphasis on the material and mechanical process of dispensing drugs is often at odds with the patient process or focus central to pharmaceutical (patient-centered) care.

Recently, Williams and others have suggested that “Army pharmacists are changing their style of practice to support the concept of patient-centered care.”<sup>38</sup> They cite implementation of patient-care programs in teaching (e.g., Tripler Army Medical Center) and nonteaching hospitals (e.g., Reynolds Army Community Hospital). At Reynolds Army Community Hospital, for instance, the authors noted that the pharmacy clinical coordinator also served as a master educator for the staff pharmacists. Staff pharmacists also used the American Society of Health-System Pharmacists (ASHP) Clinical Skills Program modules to improve their clinical skills. These educational programs aim to improve the cognitive skills necessary to design, develop, and monitor drug regimens, a critical underpinning that supports pharmaceutical care. While encouraging, more evidence is needed.

Terry M. Rauch (1981) surveyed one hundred sixty civilian and military pharmacists assigned to thirty-five Army Medical Treatment Facilities (MTFs) within the United States to determine their intrinsic and extrinsic job satisfaction.<sup>39</sup> He divided the study population of pharmacists into two categories: patient care (PC) and nonpatient care (NPC) pharmacists. Rauch considered pharmacists performing patient care activities if they determined adverse drug reactions secondary to therapy, determined drug therapy efficiency, and served as a member of a therapeutic drug team. Rauch assigned pharmacists who did not perform these tasks into the NPC category.

Rauch's data revealed that PC pharmacists were significantly more satisfied than NPC pharmacists and scored higher on six of seven intrinsic job characteristics.<sup>40</sup> The strongest correlations of satisfaction were to professional challenge and effective use of education ( $r = 0.72, p < 0.01$ ) and the availability to provide professional services to members of the health care team and effective use of education ( $r = 0.61, p < 0.01$ ). Extrinsic job satisfaction factors were similar for both groups, however, with PC pharmacists scoring higher on only one of four categories.

Rauch's data implies that clinical pharmacists attain greater intrinsic satisfaction because this group of pharmacists achieves objectives they perceive important. He also suggests that because of similar extrinsic data between the two study groups, the degree of satisfaction from pay, working conditions, and opportunity for advancement are probably influenced more by what other pharmacists receive rather than what other pharmacists do.

Unfortunately, this study did not distinguish its results between the military and civilian pharmacists working at the military treatment facilities. Army pharmacists experience a myriad of unique work factors without parallel in the civilian sector that may affect quality of life, and potentially job satisfaction: deployments, frequent family moves and separations, and relative low pay. Putting these in Equity Theory terms (Adams, 1965), these inputs include, among others: numerous deployments, high outpatient pharmacy prescription volume, frequent permanent change of stations, family related dimensions (e.g., life stress and support from spouse), and past and future Army force restructurings to include potential loss of job due to outsourcing. For example, “within the past six years, Army pharmacy personnel have been deployed to Saudi Arabia, Kuwait, Somalia, Haiti, Hungary, and Bosnia.”<sup>41</sup> Despite a 30 percent force reduction over the past four years of Army medical personnel including pharmacists, closure of two medical centers and three community hospitals, and conversion of three other community hospitals to ambulatory clinics, the beneficiary population decreased only by 15 percent.<sup>42</sup> The workload is equally remarkable. Army pharmacies, from eight medical centers, twenty-eight community hospitals, and seventy-six ambulatory care health clinics dispense more than 16.5 million prescriptions per year.<sup>43</sup> In real terms, Army pharmacists have been shown to dispense prescriptions at a rate nearly 250 percent greater than their civilian counterparts.<sup>44</sup> This is significant, but its impact on job satisfaction, along with the other characteristics mentioned above, is unknown.

#### Literature Summary

The 1970s and 1980s contain the majority of pharmacist job satisfaction research reports. Over the years, researchers proposed several theories and introduced numerous variables to explain job satisfaction. This suggests that job satisfaction is a complex construct; each theory explains only a piece of the whole. Most pharmacy job satisfaction studies involve use of Herzberg's theory and differentiate between intrinsic and extrinsic factors, and facet-free or facet-specific measures. However, despite this commonality, little consistency, and therefore, little ability to compare results, exists among the surveys, since a standardized instrument was not used. Most studies used or modified surveys designed for other professions.

In general, the majority of studies indicate that pharmacists are neutral or slightly dissatisfied with their jobs. Many pharmacists indicate that they are not satisfied with the work they perform and are unchallenged. At the same time, clinical pharmacists appear to be an exception. The difference appears to be that clinical pharmacists possess greater autonomy and a mentally challenging work environment. The latter may result from greater opportunity to use knowledge skills resulting from a more clinically-oriented education. As the transition to a patient-centered practice continues, those pharmacists who currently possess a Doctor of Pharmacy degree may have greater opportunity to use their education. Doctor of Pharmacy degree saturation does not exist among Army pharmacists within the military. Hence, during this transition period, the link between education and job practices may exhibit some relationship to job satisfaction

The literature contains little regarding the extent to which Army pharmacy has embraced patient-centered care. An Air Force pharmacy task analysis study seven years

ago was revealing. It confirmed, then, that little time was spent on patient-centered care. Only one study (Rauch, 1981) evaluated pharmacist--both civilian employee pharmacists and Army officer pharmacists--satisfaction at Army treatment facilities. Nonetheless, Rauch's study revealed that pharmacists who performed patient-care activities were more satisfied than pharmacists who did not.

While researchers measured pharmacists' job satisfaction in the past, current studies are needed to provide a current assessment of job satisfaction, to assess satisfaction following the introduction of pharmaceutical care and changes in education, and to evaluate job satisfaction among a unique study population, Army pharmacists.

### Hypothesis

Based on the analysis of previous research and the identification that clinical pharmacists possess higher job satisfaction, hypotheses for this research project are established, as follows:

1. There is a positive relationship between the extent of clinical training and level of job satisfaction;
2. There is a positive relationship between the extent of clinical involvement and level of job satisfaction; and,
3. When there is a positive relationship between clinical training and involvement, job satisfaction will also be positively correlated.

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<sup>1</sup> Paul M. Muchinsky, Psychology Applied to Work: An Introduction to Industrial and Organizational Psychology 2d ed. (Chicago: The Dorsey Press, 1987), 396.

<sup>2</sup> *Ibid.*, 450-4.

<sup>3</sup> Dennis W. Organ and Thomas Bateman, Organizational Behavior: An Applied Psychological Approach 3d ed. (Plano: Business Publications, Inc., 1986), 305.

<sup>4</sup> Jesse E. Stewart and Anal A. Purohit, "Intrinsic and Extrinsic Job Satisfaction Characteristics in Pharmacy," Contemporary Pharmacy Practice 3, no. 4 (1980): 258-63.

<sup>5</sup> Muchinsky, 397.

<sup>6</sup> *Ibid.*, 456-63.

<sup>7</sup> "1997 Handbook for Military Families," Army Times Supplement 7 April 97, 8.

<sup>8</sup> "The Salary Race," Hospital Pharmacist Report 1, no. 4 (1997): 1,5.

<sup>9</sup> *Ibid.*, 5.

<sup>10</sup> Muchinsky, 463-70.

<sup>11</sup> *Ibid.*, 394.

<sup>12</sup> Robert E. Williamson and Hugh F. Kabat, "Job Satisfaction Among Minnesota Hospital Pharmacists," American Journal of Hospital Pharmacists 29 (1972): 942-6.

<sup>13</sup> *Ibid.*, 944.

<sup>14</sup> C. Anderson Johnson, Richard J. Hammel, and J. Stephen Heinen, "Levels of Satisfaction Among Hospital Pharmacists," American Journal of Hospital Pharmacists 34 (1977): 241-7.

<sup>15</sup> Gerald R. Donehew and F. C. Hammerness, "Pharmacists' Job Feelings," Contemporary Pharmacy Practice 1, no. 1 (1978): 22.

<sup>16</sup> *Ibid.*, 24.

<sup>17</sup> Frederic R. Curtiss, Richard J. Hammel, and C. Anderson Johnson, "Psychological Strain and Job Dissatisfaction in Pharmacy Practice: Institutional Versus Community Practitioners," American Journal of Hospital Pharmacy 35 (1976): 1516-20.

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<sup>19</sup> Michael W. Noel, Richard J. Hammel, and J. Lyle Bootman, "Job Satisfaction Among Hospital Pharmacy Personnel," American Journal of Hospital Pharmacy 39 (1982): 600-6.

<sup>20</sup> Michael W. Noel, Richard J. Hammel, and J. Lyle Bootman, "Job Satisfaction and the Future of Pharmacy," American Journal of Hospital Pharmacy 39 (1982): 649.

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<sup>22</sup> Candace W. Barnett and Carole L. Kimberlin, "Levels of Satisfaction Among Florida Pharmacists," Journal of Pharmaceutical Marketing & Management 2, no. 4 (1988): 23-44.

<sup>23</sup> *Ibid.*, 37.

<sup>24</sup> Peter Humphrys and Gordon E. O'Brien, "The Relationship Between Skill Utilization, Professional Orientation, and Job Satisfaction for Pharmacists," Journal of Occupational Psychology 59 (1986): 315-26.

<sup>25</sup> *Ibid.*, 316.

<sup>26</sup> Charles D. Hepler and Linda M. Strand, "Opportunities and Responsibilities in Pharmaceutical Care," American Journal of Pharmaceutical Education 53 (1989): 7S-15S.

<sup>27</sup> *Ibid.*, 12S.

<sup>28</sup> *Ibid.*

<sup>29</sup> William A. Zellmer, "Five Pharmacy Groups Issue Commentary on Joint Statement on the Entry-level Degree in Pharmacy," American Journal of Hospital Pharmacy 49 (1992): 2082-5.

<sup>30</sup> *Ibid.*, 2082.

<sup>31</sup> C.E. Trinca, "The Pharmacist's Progress Toward Implementing Pharmaceutical Care: The Third Strategic Planning Conference for Pharmacy Practice," American Pharmacy (1995): 13-8.

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<sup>33</sup> Norman V. Carroll, W. Gary Erwin, and Mark A. Beaman, "A Comparison of Practice Patterns and Job Satisfaction of California and Non-California PharmD

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<sup>34</sup> Ibid., 238.

<sup>35</sup> Fred M. Cox and Norman V. Carroll, "Comparison of Practice Patterns and Job Satisfaction of Entry Level PharmD and BS Level Graduates in Hospital and Community Practice," American Journal of Pharmaceutical Education 52 (1988): 47-50.

<sup>36</sup> Nancy F. Fjortoft and Mary W.L. Lee, "Comparison of Activities and Attitudes of Baccalaureate Level and Entry-Level Doctor of Pharmacy Graduates of The University of Illinois at Chicago," Annals of Pharmacotherapy 29 (1995): 977-81.

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<sup>38</sup> Roger F. Williams, Errol L. Moran, Samuel D. Bottaro II, George J. Dydek, Marc L. Caouette, John D. Thomas, and Robert Echevarria, "Pharmaceutical Services in the United States Army," American Journal of Health-System Pharmacy 54 (1997): 774.

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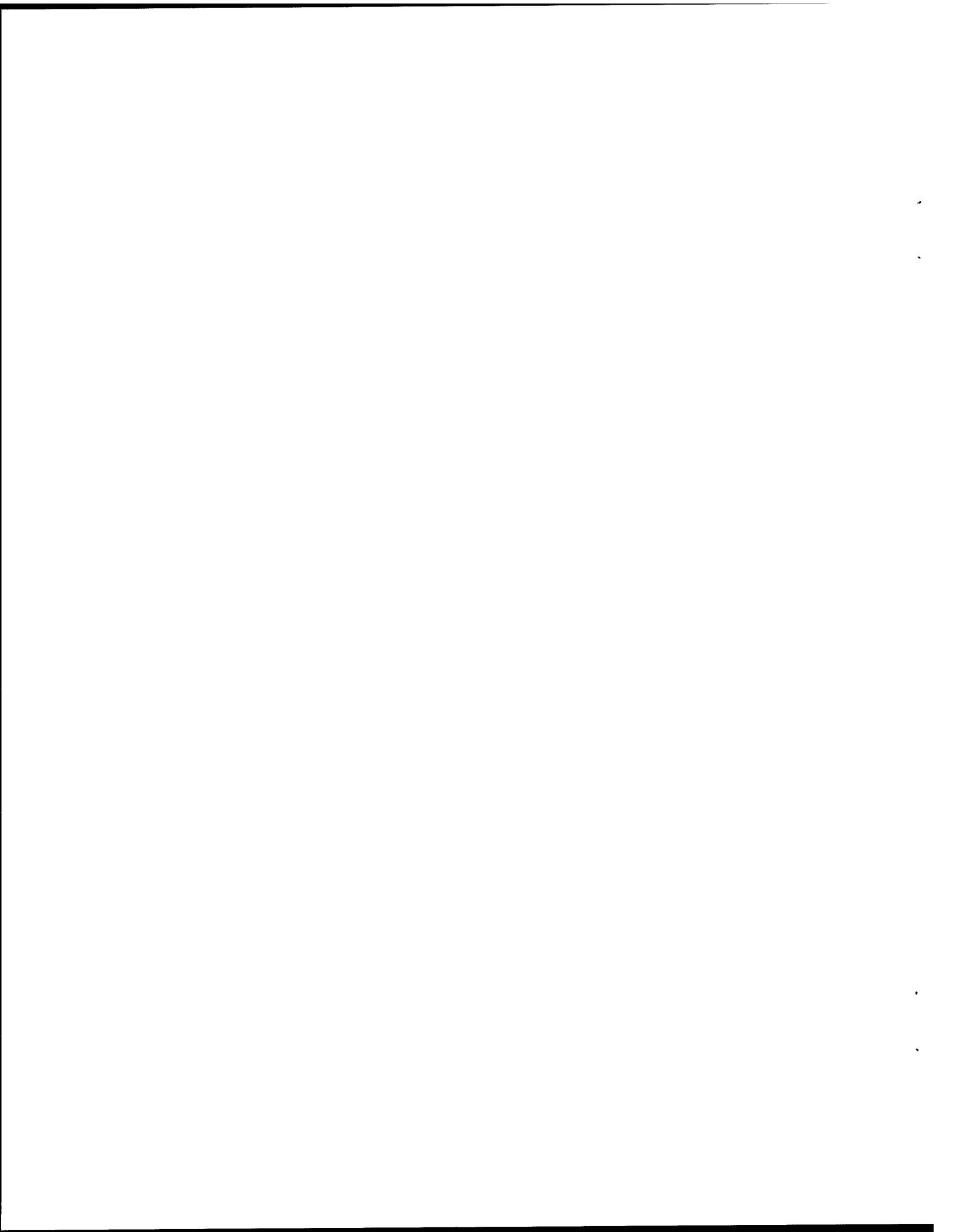
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<sup>41</sup> G. H. Turner, Timothy Lobner, and J. Patrick, "Pharmaceutical Services Required During Setup of an Army Combat Support Hospital," American Journal of Hospital Pharmacy 48 (1991): 533-5; R. B. Lotton, Jerome F. Pierson, and W. Hoffiman, "Experiences of a Combat Support Hospital Service During Operation Desert Storm," American Journal of Hospital Pharmacy 49 (1992): 1152-5; Jed S. Lewis, "Pharmacist Deployment in Support of Operation Restore Hope," American Journal of Hospital Pharmacy 50 (1993): 1577; Kirk J. Frank, "Pharmaceutical Services in an Army Field Hospital in Haiti During Operation Uphold Democracy," American Journal of Health-System Pharmacy 53 (1996): 1691-3; Williams, Moran, Bottaro II, Dydek, Caouette, Thomas, and Echevarria, 775-8.

<sup>42</sup> Ibid., 773-4.

<sup>43</sup> Ibid., 773.

<sup>44</sup> SFC Anna M. Fox, interview by author, electronic mail, Fort Hood, 25 February 98.



## CHAPTER 3

### RESEARCH METHODOLOGY

This chapter describes the survey development, study population, sample distribution procedure, and method of data analysis applied to this study. The hypotheses were tested using correlational analyses. This research was conducted using a four page questionnaire (see appendix B) that was mailed to the entire population of Army pharmacists. The focus of the survey instrument was on measuring job characteristics, subject education, and job satisfaction.

#### Questionnaire Development

In 1984, Candace W. Barnett and Carole L. Kimberlin developed and validated a survey instrument to specifically assess job and career satisfaction of pharmacists.<sup>1</sup> They examined many previous standardized measures of job satisfaction including the Job Descriptive Index (JDI) and Job Characteristic Inventory (JCI), as well as questionnaires used by other researchers within pharmacy and used for other careers. The survey instrument applied to this research endeavor represents only a slight modification of Barnett and Kimberlin's well-established questionnaire (see appendix B).

Barnett and Kimberlin incorporated facet-specific items to evaluate intrinsic and extrinsic independent variables such as autonomy, clinical encounter, company policies, compensation, communication, coworkers, environmental working conditions, intangible and tangible recognition, job role, occupational status, role stress, staffing, supervision, and work schedule. The dependent variables, job and career satisfaction, were measured by facet-free items. Barnett and Kimberlin used an equal number of positively and

negatively worded items to minimize bias. Where appropriate, they reversed the scoring for unfavorably worded questions such that a higher score indicated a more positive job satisfaction perspective. The researchers determined an individual's subscale scores by summing the values assigned to an individual's responses. All questions were scaled using a five-point Likert measure: 1--strongly agree, 2--tend to agree, 3--neither agree nor disagree, 4--tend to disagree, and 5--strongly disagree variables (see tables 1 and 2 for definitions of each variable and the corresponding item number on the survey instrument).

Five experts representing pharmacy, psychology, and sociology assessed the survey's content validity. All independently agreed that the survey instrument contained the correct quantity and quality of questions representing both the independent and dependent variables.

The researchers tested the internal consistency for related subscales to enhance reliability. The Cronbach's alpha values ranged from 0.56 to 0.985. Only the communication (Cronbach's alpha of 0.56) and job role (Cronbach's alpha of 0.579) subscales were less than the desired 0.60 value. The authors retained these two subscales recognizing the results from the communication and job role categories needed cautious interpretation.

Table 1. Intrinsic Independent Variables Definitions

<u>Independent Variable</u>	<u>Corresponding Item Number<sup>a</sup></u>	<u>Construct Measured</u>
Autonomy	A8	The freedom to decide how to work.
Autonomy	A14	The existence of consultations with employee pharmacists when decisions are made that affect the job.
Autonomy	A22	Whether the pharmacist determines the pace at which he works.
Dispensing duties	C3	The quantity of dispensing duties.
General job role	F6,F7	The opportunity to make use of skills and abilities and the presence of challenge in the work.
Intangible recognition	A7, A11 A17, A25	Feedback from supervisors.
Managing duties	C2	Quantity of managing duties.
Role conflict	C1	Existence of agreement with the supervisor about the job role.
Role ambiguity	C4	Existence of clarity about role expectations.
Tangible recognition	A1	The opportunity for promotion.
Tangible recognition	A21	The granting of promotions and pay raises to those who perform exceptionally well.

Source: Candace W. Barnett and Carole L. Kimberlin, "Development and Validation of an Instrument to Measure Pharmacists' Satisfaction with Their Jobs and Careers," American Journal of Pharmaceutical Education 50 (1986): 5-14.

<sup>a</sup> To examine corresponding survey questions, see appendix 2.

Table 2. Extrinsic Independent Variables Definitions

<u>Independent Variable</u>	<u>Corresponding Item Number<sup>a</sup></u>	<u>Construct Measured</u>
Communication	E1, E4, E5, E6	Quantity and quality of communication with physicians and nurses.
Company policies	A3, A16	Consistency and uniformity of company policies and practices.
Compensation practices	A15, A26, F3	Adequacy of salary.
Compensation practices	A2	The prospects for substantial increases in future earnings.
Compensation practices	A6	The salary as compared to that of persons holding similar positions in other organizations.
Compensation practices	A9	The adequacy of fringe benefits.
Coworkers	E3, E7	The on-the-job social relationships with coworkers.
Coworkers	E2	Respect displayed by coworkers.
Staffing	A18	The adequacy of the number of employees on the job.
Staffing	A24	The competency of coworkers.
Staffing	C5	The type of duties performed by nonpharmacists.
Supervision	A4, A5, A12 A13, A19, A20	Adequacy, consistency, and competency of supervision.
Supervision	A23	Delegation of authority by the supervisor.
Workload	A10, F1	Duplication of work or work overload due to inadequate staffing.
Work schedule	B1, B2, B3 F2, F4	Fairness and flexibility of work schedules.

Source: Candace W. Barnett and Carole L. Kimberlin, "Development and Validation of an Instrument to Measure Pharmacists' Satisfaction with Their Jobs and Careers," American Journal of Pharmaceutical Education 50 (1986): 5-14.

<sup>a</sup> To examine corresponding survey questions, see appendix 2.

Kimberlin and Barnett then pilot tested their survey instrument among one hundred pharmacists. By simultaneously applying the JDI, they tested for concurrent validity of the two instruments by comparing responses. The concurrent validity was less than desired only with regard to compensation, tangible recognition, and coworker subscales. Nonetheless, the authors decided to proceed using the entire survey, basing their decision on two points. The first related to different definitions of the subscale constructs. For example, the JDI measured amount of pay while the pilot survey measured compensation practices. Second, despite the low correlations with these three subscales, all other questions were validated.

The instrument used in this study, like Barnett and Kimberlin's, contains eleven sections. Respondents were asked their opinion on the following topics contained in table 3 (see survey instrument, appendix B).

Table 3. Survey Instrument Topics

My supervisor and his or her practices
Work schedule
Pharmacy duties
Clinical encounter with patients
Professional encounter with coworkers and other health care providers
Work, environment, and rewards
General job satisfaction
Career satisfaction
Clinical pharmacy practice
Clinical pharmacy involvement
Demographic questions

## Questionnaire Content

A total of sixty-one of the seventy-one questions from Barnett and Kimberlin's survey were selected for my instrument. These items and the corresponding variables they measure are listed in tables 3 and 4. Ten questions were omitted from Barnett and Kimberlin's questionnaire due to lack of relevance, or applicability to Army pharmacists. For example, because Department of Defense beneficiaries receive their medications free, the question, "Patients are only concerned about getting their medication as cheaply as possible," was omitted. Two additional questions were reworded in minor ways to suit the study population.

Because clinical education and the extent of patient-centered care practice are key elements of interest in this study, a total of eighteen questions were added to assess clinical pharmacy training and participation in various clinical activities. They were developed using the ASHP Technical Assistance Bulletin on Assessment of Departmental Directions for Clinical Practice in Pharmacy.<sup>2</sup> These questions, previously used in David S. Olson's<sup>3</sup> study of job satisfaction among Owen Healthcare, Inc., Hospital Pharmacists, were reworded only as necessary for applicability to the study population.

Eight of the eighteen questions (see table 4) were added to specifically measure clinical pharmacy training and practice. These questions attempted to gain insight about background in clinical pharmacy training and education received while at school or work, whether the organization provides and supports opportunities for clinical practice, and whether the respondent's skills improve or suffer as a result of organization programs.

Like the other questions, responses are made on a five-point Likert scale with one equal to “strongly agree” and five equal to “strongly disagree.”

Table 4. Clinical Pharmacy Training and Practice Questions (Section I)

1. The school of pharmacy I attended prepared me adequately to provide clinical pharmacy services.
2. Since graduating from pharmacy school, many of my clinical pharmacy skills have regressed due to a lack of use.
3. My organization helps me develop my clinical pharmacy skills.
4. The quality of clinical pharmacy services provided at my hospital is appropriate for the patients we treat.
5. Working for my organization has advanced my clinical pharmacy skills.
6. My organization is committed to pharmacy as a clinical profession.
7. The responsibilities for providing clinical pharmacy services are shared among the professional staff of the pharmacy department.
8. The department promotes the clinical services of the pharmacy to physicians and other health care providers.

The remaining ten of the eighteen questions (see table 5) were added to measure an individual’s participation in various clinical activities. These activities include medication use evaluation, pharmacokinetic consults, drug regimen and adverse drug reaction monitoring, and patient and professional education programs. Responses to these questions were yes, no, or not applicable. Respondents are also asked to indicate the

amount of time, by percent of an average day, spent performing distributive, management, or clinical activities.

Table 5. Clinical Pharmacy Involvement Questions (Section J)

1. I participate in the drug-use evaluation program at my hospital.
2. I monitor patient drug therapy, i.e., to evaluate the appropriateness of use, dose, dosage regimen, route of administration, therapeutic duplication, and drug interactions.
3. I consult with the prescriber on antibiotic therapy to recommend changes based upon monitoring activities.
4. I provide patient education regarding drug therapy.
5. I participate in the detection, monitoring, documentation, management, and reporting of adverse drug reactions.
6. I participate in medical or health-care team rounds.
7. I provide educational sessions or materials for other health-care professionals, e.g., inservice training, staff development.
8. I obtain clinical laboratory data to monitor drug regimen efficacy and/or toxicity via a pharmacokinetic monitoring system.
9. I provide written drug information to health-care professionals.
10. Please estimate what percentage of your typical work day is spent in the following activities (total should equal 100%):

Distributive activities:	_____ %
Clinical activities:	_____ %
Management activities:	_____ %
Total:	100 %

Finally, the following demographic-related questions were included in the instrument to enable analysis of potential categorical differences in job satisfaction, especially as related to educational programs the pharmacists had completed.

Among other demographic information requested, section eleven asked respondents to indicate what professional degree they possess and if they received any additional educational training (e.g., residency, fellowship). Respondents were also asked if they are certified by the Board of Pharmaceutical Specialties. This certification is an indicator of high clinical knowledge. Lastly, respondents are asked to characterize the kind of day they had (i.e., excellent, good, neutral, fair, or bad) when filling out the questionnaire. This was seen as, potentially an additional means of inferring general satisfaction.

#### Study Population

The study population for this project was all active-duty Army pharmacists (n = 141, excluding me) listed in the 1997 Pharmacy Officer and NCO Roster.<sup>4</sup> Army pharmacists listed in the roster hold a variety of job titles (e.g., director, assistant director, outpatient and inpatient pharmacy supervisor, clinical coordinator, etc.). They also serve, world-wide, in various hospitals ranging in size and scope from ambulatory health clinics to tertiary medical centers.

#### Sampling Procedures

The Pharmacy Consultant, Medical Command, submitted a cover letter (see appendix C) requesting that all active-duty Army pharmacists complete the survey and submit their results to the researcher. This cover letter identified the purpose and scope of the project, and assured confidentiality of each respondent. The letter requested recipients complete the survey and return it in the provided postage-paid, self-addressed

envelope provided within one month. Subjects were directed to write their responses directly on the survey itself.

The questionnaire, cover letter, and return envelopes were mailed by first-class postage to the working addresses of all 141 Army pharmacists on 31 January 1998. The requested return date was 28 February 1998. Two weeks after the initial mailing, a reminder letter (see appendix D) was sent to all pharmacists thanking respondents and gently reminding nonrespondents to complete and return the questionnaire. Because surveys received by then did not contain any personally identifying marks, all pharmacists received the reminder letter. The final collection date was 8 March 1998, or five weeks after the initial mailing.

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<sup>1</sup> Candace W. Barnett and Carole L. Kimberlin, "Development and Validation of an Instrument to Measure Pharmacists' Satisfaction with Their Jobs and Careers," American Journal of Pharmaceutical Education 50 (1986): 5-14.

<sup>2</sup> ASHP Council on Professional Affairs, "ASHP Technical Assistance Bulletin on Assessment of Departmental Directions for Clinical Practice in Pharmacy," American Journal of Hospital Pharmacy 46 (1989): 339-41.

<sup>3</sup> David S. Olson and Kenneth A. Lawson, "Relationship Between Hospital Pharmacists' Job Satisfaction and Involvement in Clinical Activities," American Journal of Health-System Pharmacy 53 (1996): 281.

<sup>4</sup> Pharmacy Branch, AMEDD Center and School, Pharmacy Officer and NCO Roster, (San Antonio: AMEDD Center and School, 1997), 1-38. This annual publication produced by the Pharmacy Branch at the Army Medical Department Center and School (AMEDD C&S), lists the current assignments and mailing locations of all pharmacy officers. The Pharmacy Branch completed the most recent update of this roster in November, 1997.

## CHAPTER 4

### RESULTS

A four-page mail questionnaire developed and validated by Barnett and Kimberlin was modified and used to measure job satisfaction and evaluate the relationships between job satisfaction described above. A total of sixty-one of the seventy-one original questions used in Barnett and Kimberlin's instrument were retained in this survey. Eighteen additional questions were added to assess clinical pharmacy training and the extent of clinical pharmacy involvement. An additional twelve questions assessed demographic characteristics. In its final form, the questionnaire contained a total of ninety-one questions. Responses were measured on a five-point Likert scale: strongly agree, agree, neutral, disagree, or strongly disagree.

A total of 140 surveys were mailed to the entire population (excluding the author) of Army pharmacy officers listed in the November 1997 Pharmacy Officer and NCO Roster.<sup>1</sup> Five surveys were returned as undeliverable because the subjects were no longer stationed at the mailing address indicated by the roster, or in possibly two of these instances, the pharmacy officer may have left the service prior to receiving the questionnaire. Three pharmacists contacted the Pharmacy Consultant for a replacement survey after receiving the reminder letter, but not the questionnaire. Four subjects returned surveys after the data collection period. Their responses were not included in the data analysis. Of the 135 delivered questionnaires, 107 responses were received for data analysis yielding an adequate response rate of 79 percent.

Survey data from returned questionnaires were coded and entered into statistical software (SPSS) by the researcher using an IBM-compatible computer.<sup>2</sup> The data analysis consisted of descriptive statistic measures, Kendall's Tau B, Mann-Whitney U tests, and Kruskal-Wallis one-way analysis of variance (ANOVA). These non-parametric tests were used to avoid drawing spurious conclusions about the normalcy of distributions for the variables tested, and to conform with the analysis used by Barnett and Kimberlin (1988).<sup>3</sup> The alpha probability level established for all inferential tests was 0.05.

#### Demographic Information

Tables 6 and 7 show the demographic characteristics of the respondents. Table 6 depicts current rank and job title. Table 7 depicts degrees earned and whether the respondent had completed a pharmacy residency. "Other" degrees earned, representing nearly 17 percent of the population, included: Masters of Public Administration (M.P.A), Master of Arts (M.A.), Masters in Education (Ed.M.), Masters of Business Administration (M.B.A), Masters in Healthcare Administration (M.H.A), and Doctor of Philosophy (Ph.D).

#### Demographic Information Summary

The average age of 107 responding pharmacists was 37.5 years (range 24 to 55 years). Males accounted for nearly 77 percent (n = 82) of the respondents; nearly 22 percent were female (n = 23). When contrasted with current civilian pharmacist gender demographics in 1988 (and estimated to be about 40 percent now<sup>4</sup>), there appears a disproportionally small female representation among Army pharmacists. This could be accounted for by the conflict between military service (e.g., frequent

deployments and permanent changes of stations) and family responsibilities. For example, Shepherd and Kirk (1982) discovered in a national survey of male and female pharmacists that the number of hours female pharmacists worked was inversely related to whether they had young children living at home.<sup>5</sup> The inability of women in the military, especially, to work part-time as compared to civilian counterparts may further explain these results.

Table 6. Demographic Information: Rank and Job Title

Characteristic	Frequency	Percent
<b>Rank</b>		
Second Lieutenant	4	3.7
First Lieutenant	11	10.3
Captain	34	32.7
Major	28	26.2
Lieutenant Colonel	19	17.8
Colonel	8	7.5
No response	3	2.8
<b>Job Title</b>		
Chief, Pharmacy Service	31	29.0
Assistant Chief, Pharmacy Service	18	16.8
Chief of a Section, e.g., Outpatient	29	27.1
Clinical Pharmacist	6	5.6
Staff Pharmacist	4	3.7
Student	4	3.7
Resident	3	2.8
Other	7	6.5
No response	5	4.7

Table 7. Demographic Information: Degrees Earned and Residency Status

Characteristic	Frequency	Percent
<b>Degrees Earned</b>		
Bachelor of science	89	83.2
Doctor of pharmacy	29	27.1
Master of science	25	23.3
Other:	18	16.8
No response	1	0.9
<b>Residency Status:</b>		
Yes	48	44.9
Pharmacy practice	(15)	(14.0)
Oncology	(10)	(9.3)
Nuclear	(5)	(4.7)
Other	(11)	(10.3)
No	58	54.2
No response	1	0.9

When categorized by rank, the majority of respondents were either captains (33 percent) or majors (26 percent), and were serving as a Chief, Pharmacy Service (29 percent) or as a Chief of a Section (27 percent) (e.g., Inpatient or Outpatient Pharmacy). Since 1975, the dispersion of pharmacists earning their entry level degree during any subsequent five year increment was fairly even. A total of thirty-five pharmacists (33 percent) earned their degrees after 1990, the year after Hepler and Strand's landmark article on patient-centered care. The majority of responding pharmacists have been on active duty for either 15 to 19 years (31 percent), or less than 5 years (26 percent). The mean tenure was 11.5 years; the range, 1 to 28 years. More than any other choice,

respondents (n = 50) indicated that they worked at a medical center (47 percent). Forty respondents (37 percent) worked at a MEDDAC, and fifteen respondents (14 percent) selected "other" as their work site. "Other" namely includes troop medical clinic (TMC), school (military or advanced civilian training), the Army Medical Department Center and School (AMEDD C&S), and the Department of Defense Pharmacoeconomic Center.

Many pharmacists indicated that they possessed more than one degree. Twenty-seven (25 percent) respondents indicated that they were certified by the Board of Pharmaceutical Specialties (BPS). However, because only eight pharmacists actually listed their board certification specialty, and others (e.g., second lieutenants) are not likely to meet the BPS eligibility requirements for testing responded positively to this item, this question was likely misinterpreted. Nearly 45 percent (n = 48) of all respondents indicated that they completed a pharmacy residency, as follows: pharmacy practice residency (n = 15), other residency (n = 11), oncology residency (n = 10), and a nuclear residency (n = 5). Only one Army pharmacist indicated that he completed a fellowship (geriatrics). Both residencies and fellowships are organized, directed postgraduate training programs. Consequently, these demographic characteristics illustrated in the population (as well as the proportion of the subjects having the clinical Doctor of Pharmacy degree) provide some indication of the high level of education and training among Army pharmacists.

One indirect measure of satisfaction is turnover. Therefore, respondents were asked if they planned to remain in the service until retirement (i.e., serve on active military duty for twenty or more years). A total of 59 percent indicated that they planned

to stay in the service until retirement. Twenty-eight (26 percent) pharmacy officers were undecided.

Lastly, because mood might influence responses, particularly about job and career satisfaction, individuals were asked what type of day they had when completing the survey. Ninety-four respondents (88 percent) indicated that they were having a neutral to excellent day. Perhaps it is because of high job and career satisfaction. However, regardless of job and career satisfaction, the data reveals that the vast majority of respondents were at least not having a negative day when completing the questionnaire.

#### Research Variables

The independent and dependent variables investigated in this research are listed in table 8. These fifteen variables were represented by corresponding subscales in the survey instrument that were then tested for internal consistency (reliability) in accordance with the methods used by Barnett and Kimberlin.<sup>6</sup>

Table 8. Research Variables

<b>Dependent variables:</b>	
Job satisfaction	
Career satisfaction	
<b>Independent variables:</b>	
Autonomy	Job role
Clinical	Role stress
Company policies	Staffing
Compensation practices	Supervision
Communication	Tangible recognition
Coworkers	Work schedule
Intangible recognition	

### Internal Consistency Reliability

The measure of internal consistency for each research variable's subscale was determined using Cronbach's alpha (coefficient alpha) and Kendall's Tau B (item-total correlation). These procedures were performed to ensure that each item within a subscale measured the same construct before they were summed and a subscale mean computed.

The items used for each subscale were the same used by Barnett and Kimberlin.<sup>7</sup>

Subscales were retained if the coefficient alpha for all items was 0.60 or greater, and each individual item correlation was not less than 0.35. Otherwise, analysis was pursued on individual items only. Table 9 depicts the coefficient alphas for each subscale. (Tables 1 and 2, chapter 3, lists the corresponding survey questions). Coefficient alphas for the subscales ranged from -0.19 to 0.88.

When compared to the results found by Barnett and Kimberlin, coefficient alphas of the retained final subscales found in this study are generally higher. In the addition, four subscales not included for further analysis in this study were similar to Barnett and Kimberlin's results; only work schedule differed (retained for further analysis by Barnett and Kimberlin, but not in this study because work schedules typically do not apply in a military context). Overall, these results represent excellent support for the reliability of Barnett and Kimberlin's instrument.

Table 9. Final Subscales with Coefficient Alphas

Final Subscale	Items	Coefficient Alpha
Job satisfaction	4	0.86
Career satisfaction	4	0.87
Clinical	8	0.88
Company policies	2	0.74
Compensation practices	5	0.83 (a)
Communication	4	0.79
Coworkers	3	0.82
Intangible recognition	4	0.82
Job role	4	0.75 (b)
Supervision	7	0.86
<u>Subscales not included due to Cronbach's alpha &lt; 0.60</u>		
Autonomy	3	0.41
Role stress	2	0.48
Staffing	4	-0.19
Tangible recognition	2	-0.16
Work schedule	4	0.13
<u>Items deleted from subscale due to Kendall's Tau &lt; 0.35</u>		
(a) Item 9 from My Supervisor and His or Her Practices section		
(b) Item 2 from the Pharmacy Duties section and item 1 from the Work, Environment & Rewards section		

Level of Job Satisfaction

The job satisfaction subscale consisted of four facet-free questions. Facet-free questions measure an individual's overall satisfaction with his or her job without reference to any specific aspect of the work. Table 10 lists those questions as well as the mean and standard deviation for each item.

Table 10. Facet-free Items Used to Determine Job Satisfaction

Item	n	Mean <sup>a</sup>	Standard Deviation
All things considered, I am satisfied with my current job.	107	3.58	1.17
The idea of spending the remainder of my working life in a job like my current one is depressing.	107	2.87	1.37
I often leave work with a "bad" feeling that I am doing something which I do not enjoy.	107	2.50	1.22
I often get so wrapped up (interested) in my work that I lose track of time.	107	3.38	1.15

<sup>a</sup> Higher means indicate greater agreement with the statement on a five-point Likert scale.

Drawing from these individual items and accounting for reverse scoring when appropriate, the mean value for job satisfaction was calculated by averaging. The mean level of job satisfaction was 3.40 (n = 107) with a standard deviation of 1.0. On a five-point Likert scale, this value indicates that overall, respondents were satisfied (rather than unsatisfied), but only slightly so.

#### Level of Career Satisfaction

The career satisfaction subscale consisted of four facet-free items. Table 11 lists those items as well as the mean and standard deviation for each item.

The mean value for career satisfaction was computed in the same manner as the mean value for job satisfaction: correlated items were summed and averaged to enhance reliability. The mean level of career satisfaction for the 107 respondents was 3.55 with a standard deviation of 0.98. Again, the respondents indicated a slightly positive career

satisfaction (3.55) that was just higher than their level of job satisfaction. This suggests a satisfied trend, and may imply that pharmacists are more satisfied with their Army career than with the current job they hold.

Table 11. Facet-free Items Used to Determine Career Satisfaction

Item	n	Mean <sup>a</sup>	Standard Deviation
Knowing what I know now, if I had to decide all over again whether to go into pharmacy, I would choose another field.	107	2.43	1.21
If I had a son who told me he was interested in pursuing a career in pharmacy, I would encourage him.	107	3.68	1.10
If I had a daughter who told me she was interested in pursuing a career in pharmacy, I would encourage her.	107	3.72	1.11
If I were free to pursue any type of career I wanted, I would stay in pharmacy.	107	3.22	1.21

<sup>a</sup> Higher means indicate greater agreement with the statement on a five-point Likert scale.

To confirm the association inferred between job satisfaction (mean = 3.40) and career satisfaction (mean = 3.55), a Kendall's Tau B was determined. A Kendall's Tau B value of less than 0.3 indicates a weak relationship; a value ranging from 0.3 to 0.5 indicates a moderate relationship; and a value greater than 0.5 denotes a strong relationship between the two variables. For the relationship between job and career satisfaction, the Kendall's Tau B was 0.33 ( $p < 0.001$ ) indicating a moderate and significant positive association.

The mean level of job satisfaction among Army pharmacists (mean = 3.40, standard deviation = 1.0) was comparable to that found by Barnett and Kimberlin<sup>8</sup> in 1988 (mean = 3.41, standard deviation = 0.99), and Olson<sup>9</sup> in 1996 (mean = 3.43, standard deviation = 0.90). Interestingly, however, the mean level of career satisfaction in this study (mean = 3.55, standard deviation 0.98) was higher than Barnett and Kimberlin's results (mean = 3.09, standard deviation = 1.14). This might suggest that while attitudes regarding job satisfaction have changed little over the past fifteen years, Army pharmacists appear to enjoy greater career satisfaction than their civilian counterparts.

Barnett and Kimberlin's (1988) strength of association between job and career satisfaction was 0.396 ( $p < 0.05$ ). In this regard, both this study and Barnett and Kimberlin's illustrate a significant and moderately strong positive relationship between job and career satisfaction.

#### Factors That Correlate with Job Satisfaction

The independent variable subscales consisted of facet-specific items. Facet-specific items measure how satisfied an individual is with a specific aspect of his work. Table 12 shows the correlations between the eight independent variable subscales included in the analysis and the dependent variable, job satisfaction. Mean subscale scores rather than total subscale scores were used since not all respondents answered all questions.

Table 12. Kendall's Tau B Test for Correlation of the Independent Variables and Job Satisfaction Subscales

Subscale	n	Mean <sup>a</sup>	Standard Deviation	TAU B	p<
Clinical	106	3.03	0.93	0.463	0.0001
Company policies	107	3.63	0.96	0.436	0.0001
Job role	107	3.62	0.88	0.414	0.0001
Supervision	107	3.79	0.77	0.386	0.0001
Communication	106	3.69	0.74	0.351	0.0001
Coworkers	106	3.94	0.82	0.334	0.0001
Intangible recognition	107	3.81	0.87	0.332	0.0001
Compensation practices	107	2.39	0.91	0.249	0.001

<sup>a</sup> Higher means indicate greater agreement with the subscale items, each measured on a five-point Likert scale.

Virtually all of the independent variables had a moderately positive and significant correlation with job satisfaction. Only compensation practices had an inversely related mean. Not surprisingly, the clinical subscale associated most strongly with job satisfaction. This finding conforms with earlier research: the more time one spends performing clinical activities, the greater satisfaction one experiences. The next strongest associations to emerge with job satisfaction were company policies (measured the consistency and uniformity of company policies and practices) and job role (measured the respondent's ability to make use of his skills and abilities and the presence of variety and challenge in the work). These findings suggest that pharmacists who receive clinical training, and work in organizations that provide the opportunity to make use of their skills and abilities enjoy increased job satisfaction.

Following job role, the variables most strongly associated with job satisfaction were supervision, communication, coworkers, and intangible recognition. Supervision measured the adequacy, consistency, and competency of the supervisor as well as delegation of authority by the supervisor. By establishing meaningful supervisor-to-subordinate relationships, a moderately positive effect on job satisfaction results. Further, by delegating authority, supervisors provide opportunities for greater use of a variety of skills and abilities, as well as possibly providing some degree of autonomy. These too, contribute to positive job satisfaction.

Communication was measured to assess the quality and quantity of time spent communicating with physicians and nurses. Indirectly, this involves aspects of clinical training and job role. That is, communication first requires recognition of situations that require a pharmacist's intervention. Second, the pharmacist's job role must not hinder communication with other health care members. If such conditions exist, a positive effect on job satisfaction results as the data indicates.

Coworkers, as an independent variable, assessed the amount of respect displayed by coworkers. For Army pharmacy officers, this is a critical feature of leadership, made even more important since the majority of respondents self-reported that they served in a leadership position (i.e., Chief, Pharmacy Service or Chief of a section, such as the Inpatient or Outpatient Pharmacy). The data illustrate the positive correlation between the respect enjoyed from coworkers and job satisfaction.

Intangible recognition, or feedback from supervisors, also showed a moderately strong association with job satisfaction. From an Army pharmacy perspective, intangible

recognition can occur in several forms. One mainstay is the performance appraisal or the Officer Evaluation Report (OER). More subtle perhaps, is the intangible recognition associated with or provided by a military awards given for major achievements “during” an assignment (and not necessarily at the end of one). When intangible recognition is given, a positive effect on job satisfaction is noted.

Lastly, compensation, while significantly ( $p < 0.001$ ) contributing to job satisfaction, associated only weakly with job satisfaction (Kendall’s Tau B = 0.249). This finding could suggest that despite the obvious perceived and actual discrepancies in military and civilian pharmacist pay, Army pharmacists seem to be motivated to a greater extent by other factors than direct compensation. No other individual items were found to be significantly correlated with job satisfaction.

#### Relationship Between Job Satisfaction and Demographic Characteristics

A total of twelve questions from the survey instrument were used to evaluate the relationship between job satisfaction and several diverse demographic characteristics. The relationship found between job satisfaction and residency ,specifically, will be addressed in a latter section of this chapter. However, also of interest was determining if a relationship exists between job satisfaction and age, gender, rank, job title, tenure, and type of care facility.

As previously stated, the mean age of the respondents ( $n = 100$ ) was 37.5 years with a standard deviation of 7.7 years. Kendall’s Tau B was used to test the relationship between job satisfaction and age. The Kendall’s Tau B was 0.206 ( $p < 0.004$ ) demonstrating a weak, but significant and positive association between job satisfaction

and age. This could be due to a myriad of factors such as dissatisfied Army pharmacists self-selecting out, or the tendency of older employees to become more committed to their career.

To test the relationship between job satisfaction and gender, the Mann-Whitney U test was used. Table 13 depicts these results. Despite the observation that males seem to possess greater job satisfaction than females, the Mann-Whitney test revealed no significant difference between genders. This is not surprising. Most research examining this relationship has proven inconsistent, so much so that Muchinsky states that the “male/female differences per se do not account for much variance in job satisfaction.”<sup>8</sup>

Table 13. Mean Job Satisfaction Levels by Gender

Gender	n <sup>a</sup>	Mean <sup>b</sup>	Standard Deviation	Mean Rank	U	Z	p<
Male	82	3.48	1.06	55.90	705	-1.86	ns.
Female	23	3.12	0.94	42.65			

<sup>a</sup> Two respondents did not indicate their gender.

<sup>b</sup> A higher value corresponds to a higher level of job satisfaction on a five-point Likert scale.

To determine the relationship between job satisfaction, and rank and job title, the Kruskal-Wallis one-way ANOVA was used. Tables 14 and 15 depict the results, respectively.

Table 14 shows that as military rank increases, job satisfaction tends to increase, almost linearly. The relationship between job satisfaction and rank, however, was not

found to be significant. A Tukey-B test was used to identify significant differences between specific ranks because a non-parametric post-hoc test does not exist. The results suggest that field grade officers, as a group (n = 55, mean = 3.54, standard deviation = 1.05) tended to have a slightly higher level of job satisfaction than company grade officers, as a group (n = 49, mean = 3.23, standard deviation = 1.00). Again, however, this difference was not found to be statistically significant.

Table 14. Mean Job Satisfaction Levels by Rank

Rank	n	Mean <sup>a</sup>	Standard Deviation	Mean Rank	$\chi^2$	p
Second Lieutenant	4	2.81	0.83	32.75	9.05	ns.
First Lieutenant	11	3.05	0.87	41.27		
Captain	34	3.34	1.06	50.46		
Major	28	3.25	1.17	49.43		
Lieutenant Colonel	19	3.86	0.81	66.53		
Colonel	8	3.81	0.98	63.94		

<sup>a</sup> Higher means indicate greater job satisfaction on a five-point Likert scale.

Table 15 indicates that clinical pharmacist (mean = 4.04), followed by the “other” category (mean = 3.93) possessed the greatest job satisfaction of all the positions listed. However, the differences between means for job satisfaction among these positions was too small to draw conclusions. Further, the small number of clinical pharmacists made analysis insufficiently powerful to determine differences, if any, between managerial and

clinical positions. Overall, no significant differences were found for this demographic feature.

Table 15. Mean Job Satisfaction Levels by Current Job Title

Job Title	n	Standard		Mean Rank	$\chi^2$	p
		Mean <sup>a</sup>	Deviation			
Chief, Pharmacy Service	31	3.60	1.01	57.56	10.92	ns.
Assistant Chief, Pharmacy Service	18	3.08	1.14	43.78		
Chief of a Section	29	3.04	1.02	41.21		
Clinical Pharmacist	6	4.04	0.80	70.58		
Staff Pharmacist	6	3.63	0.78	56.88		
Student	4	3.44	0.66	50.13		
Resident	3	3.58	0.38	53.33		
Other	7	3.93	0.72	67.71		

<sup>a</sup> Higher means indicate greater agreement job satisfaction on a five-point Likert scale.

To examine the relationship between job satisfaction and years in the service (or tenure), Kendall's Tau B was used. The mean number of years the respondents reported having served on active duty was 11.5 years with a standard deviation of 7.3 years. Kendall's Tau B was 0.162 ( $p < 0.004$ ) demonstrating a weak, but significant positive association between job satisfaction and one's length of service. This was not surprising, and suggests perhaps that with time, individuals become more realistic about their job expectations, or as with age, dissatisfied workers no longer remain with the organization.

A Kruskal-Wallis one-way ANOVA was used to evaluate the relationship between job satisfaction and plans to stay in the service until retirement. The results of this analysis are depicted in table 16. Respondents who expect to remain in the service until retirement possessed a statistically significant and higher level of job satisfaction. Those respondents (n = 28) answering “uncertain” to this question fell between yes’s and no’s with a mean job satisfaction of 3.30 (standard deviation = 0.90). This is interesting, because in the case of this variable, in particular, there appears to be a virtually linear relationship (judging from the means) between one’s job satisfaction and his intention to remain on active duty. One would infer that perhaps commitment is positively correlated with job satisfaction.

Table 16. Mean Job Satisfaction Levels by Retirement Decision

Retirement Decision	n	Mean <sup>a</sup>	Standard Deviation	Mean Rank	$\chi^2$	p<
Yes	63	3.62	0.99	60.47	10.50	0.005
Uncertain	28	3.30	0.90	48.61		
No	15	2.67	1.12	33.37		

<sup>a</sup> Higher means indicate greater agreement with the statement on a five point Likert scale.

Because the size and level of care at a MTF (MEDCEN versus MEDDAC) might affect job satisfaction, a Kruskal-Wallis one-way ANOVA was used to determine this association. Table 17 depicts the finding that no statistically significant difference exists between job satisfaction and type of MTF. While not significant, respondents who

worked at a MEDCEN did tend to have higher job satisfaction. Potentially, this may suggest a greater opportunity to use one's clinical training and skills in a tertiary treatment center than a MEDDAC which provides a lower acuity of patient care.

Table 17. Mean Job Satisfaction Levels by Military Treatment Facility Type

MTF	n	Mean <sup>a</sup>	Standard Deviation	Mean Rank	$\chi^2$	p
MEDDAC	40	3.29	1.14	48.08	3.60	ns.
MEDCEN	50	3.95	9.96	49.17		

<sup>a</sup> Higher means indicate greater job satisfaction on a five-point Likert scale.

#### Relationship Between Job Satisfaction and Clinical Training

Four items from the questionnaire were used to evaluate certain aspects of clinical pharmacy training as related to job satisfaction (Hypothesis 1). These items addressed the training provided by the respondent's pharmacy school, and further, whether the pharmacist believed his organization helped develop and advance his clinical pharmacy skills, or allowed them to regress due to lack of use. In addition, one's pharmacy degree and post-graduate residency training were assessed and evaluated in relation to job satisfaction.

Table 18 depicts the mean job satisfaction levels and the association between job satisfaction and the amount of one's clinical training, and one's development on the job. To determine the significance of the associations, the non-parametric Kendall's Tau B

Test was used. Only the association between job satisfaction and the respondents' training received at pharmacy school (insofar as ability to provide clinical pharmacy services) was found to be nonsignificant. All three remaining relationships were found to be statistically significant. Strong and significant relationships were identified between job satisfaction and the organization developing and advancing one's clinical skills. This suggests that job satisfaction is positive among pharmacists who work for organizations that continue to provide clinical pharmacy training sustaining one's pharmacy skills. In other words, the training provided by one's organization is more essential to job satisfaction than the training provided by one's pharmacy school.

Table 18. Mean Job Satisfaction Levels and Clinical Training

Item	n	Tau B	p<
The school of pharmacy I attended prepared me adequately to provide clinical pharmacy services.	106 <sup>a</sup>	0.434	ns.
Since graduating from pharmacy school, many of my clinical skills have regressed due to lack of use.	107	0.256	0.008
My organization helps me develop my clinical pharmacy skills.	106 <sup>a</sup>	0.513	0.0001
Working for my organization has advanced my clinical pharmacy skills.	106 <sup>a</sup>	0.585	0.0001

<sup>a</sup> One respondent failed to answer this question.

Alone, however, these four items do not provide a total picture of clinical pharmacy training. Education level and residency training would be expected to contribute, as well. Tables 19 and 20 depict the relationship between mean job satisfaction and degree, and job satisfaction and residency training.

Table 19. Mean Job Satisfaction Levels by Academic Degree

Degree	n <sup>a</sup>	Mean <sup>b</sup>	Standard Deviation	Mean Rank	$\chi^2$	p
BS	77	3.37	0.99	52.31	0.425	ns.
PharmD	29	3.48	1.15	56.66		

<sup>a</sup> One respondent failed to answer this question.

<sup>b</sup> Higher means indicate greater job satisfaction on a five-point Likert scale.

Neither of these variables was found to be significantly associated with job satisfaction. In all, then, when it comes to the relationship between job satisfaction and clinical training, only an organization's efforts to develop and advance one's clinical skills seems to matter.

Table 20. Mean Job Satisfaction Levels by Residency Training

Residency Training	n <sup>a</sup>	Mean <sup>b</sup>	Standard Deviation	Mean Rank	$\chi^2$	p
Yes	48	3.45	1.12	55.39	0.334	ns.
No	58	3.36	0.97	51.94		

<sup>a</sup> One respondent failed to answer this question.

<sup>b</sup> Higher means indicate greater job satisfaction on a five-point Likert scale.

### Relationship Between Job Satisfaction and Clinical Activities

A total of nine items in the survey instrument (questions 70 through 78; see appendix B) were employed to assess job satisfaction as related to the pharmacist's level of involvement with clinical pharmacy activities (Hypothesis 2). Respondents were asked to indicate whether he or she participated in various clinical activities, such as, drug use evaluation, drug therapy and adverse drug reaction monitoring, patient and staff education, consultation with prescribers on antibiotic therapy, medical rounds, pharmacokinetic monitoring, or providing written drug information to other health-care professionals.

Table 21 depicts the differences identified in job satisfaction levels among pharmacists who indicated that they did or did not participate in these clinical activities. Mann-Whitney U Tests were performed to determine the extent of differences that existed in job satisfaction between the pharmacists who performed these nine activities and those who did not.

Respondents who indicated that they participated in any of the nine clinical activities showed greater mean job satisfaction in all instances. However, only seven of the nine items in the questionnaire that measured a pharmacist's involvement in clinical pharmacy activities showed a positive and significant relationship between job satisfaction and that clinical activity. The two items that were not statistically significant were participation in drug use evaluations and providing pharmacokinetic drug monitoring. Perhaps this indicates that these latter two tasks have become too routine for the majority of pharmacists.

Table 21. Mean Job Satisfaction Levels for Pharmacists Who Did and Did Not Participate in Clinical Pharmacy Activities

Item	Group	n <sup>a</sup>	Mean <sup>b</sup>	Standard Deviation	Mean Rank	U	Z	p<
Participate in drug use evaluation	Yes	56	3.37	1.03	48.11	862	-0.97	ns.
	No	35	3.15	1.01	42.63			
Monitor patients' drug therapy	Yes	70	3.43	0.99	48.36	500	-1.95	0.05
	No	20	2.87	1.10	35.50			
Consult with prescriber on antibiotic therapy	Yes	46	3.44	0.97	45.62	592	-2.04	0.042
	No	35	2.96	1.02	34.93			
Provide patient education regarding drug therapy	Yes	88	3.46	0.97	50.36	100	-2.98	0.003
	No	7	2.11	0.97	18.29			
Participate in adverse drug reaction reporting	Yes	80	3.43	0.95	50.87	370	-2.34	0.018
	No	15	2.73	1.12	32.70			

<sup>a</sup> To varying degrees, some of the 107 respondents did not answer each question.

<sup>b</sup> Higher means indicate greater job satisfaction on a five-point Likert scale.

Table 21--Continued.

Item	Group	n <sup>a</sup>	Mean <sup>b</sup>	Standard Deviation	Mean Rank	U	Z	p<
Participate in medical or health-care team rounds	Yes	20	3.63	1.04	51.10	408	-2.22	0.026
	No	61	3.03	0.97	37.69			
Provide staff development for other health-care providers	Yes	79	3.50	1.01	53.79	490	-2.63	0.009
	No	20	2.81	1.00	35.03			
Pharmacokinetic drug monitoring	Yes	36	3.42	1.02	46.81	781	-1.05	ns.
	No	50	3.17	0.99	41.12			
Provides written drug information to other health-care providers	Yes	70	3.50	1.02	52.89	673	-2.20	0.028
	No	27	2.96	1.02	38.93			

<sup>a</sup> To varying degrees, some of the 107 respondents did not answer each question.

<sup>b</sup> Higher means indicate greater job satisfaction on a five-point Likert scale.

This data provides Army pharmacy managers an idea of what specific (and statistically significant) clinical activities contribute to job satisfaction. Further, this suggests that pharmacy managers should attempt to empower all pharmacists to participate in these activities. It makes sense that these activities be linked to an organizational staff development training plan to ensure that each pharmacist possesses the requisite skills to execute each task, and in doing so, job satisfaction will be positively impacted. As the results from table 18 suggest, organizations that further the skills of its pharmacists create conditions for greater job satisfaction, more than those organizations that do not.

Table 22 shows the association between job satisfaction and percent of time each respondent reported performing clinical activities. The result of analysis from this table suggests that the mean job satisfaction level increases as the percent of time spent performing clinical activities increases. Kendall's Tau B was used to test the strength of the association between job satisfaction and the percent of time pharmacists reported doing clinical activities. Kendall's Tau B was 0.225 ( $p < 0.02$ ) indicating a weak, but significant positive relationship. This is consistent with the other findings found in the literature.

Conversely, table 23 depicts the association between job satisfaction and percent of time each respondent reported performing distributive activities. As expected, the results of analysis from this table suggests that as the time spent distributing drugs increases, job satisfaction decreases. This association is statistically significant ( $p < 0.046$ ).

Table 22. Mean Job Satisfaction Levels for Pharmacists by Percent of Time Spent Performing Clinical Pharmacy Activities

Percent of Time Spent Performing Clinical Activities <sup>a</sup>	n <sup>b</sup>	Mean <sup>c</sup>	s.d.
0 - 25	85	3.26	1.04
26 - 50	14	3.95	0.83
51 - 75	3	3.75	0.43
76 - 100	4	4.19	0.90

<sup>a</sup> Respondents reported exact percentages; their responses were grouped into categories.

<sup>b</sup> One respondent failed to answer this question.

<sup>c</sup> A higher value corresponds to higher job satisfaction on a five-point Likert scale.

Table 23. Mean Job Satisfaction Levels for Pharmacists by Percent of Time Spent Performing Distributive Pharmacy Activities

Percent of Time Spent Performing Distributive Activities <sup>a</sup>	n <sup>b</sup>	Mean Job Satisfaction Level <sup>c</sup>	s.d.
0 - 25	66	3.58	1.07
26 - 50	21	3.38	0.89
51 - 75	11	2.91	0.77
76 - 100	8	2.72	1.02

<sup>a</sup> Respondents reported exact percentages; their responses were grouped into categories.

<sup>b</sup> One respondent failed to answer this question.

<sup>c</sup> A higher value corresponds to higher job satisfaction on a five-point Likert scale.

Overall, in regard to job satisfaction and clinical activities, the findings of this study suggest a variety of clinical tasks from which pharmacists gain greater job satisfaction. In addition, through an analysis of time spent performing clinical activities and its converse (time spent performing distributive activities), the data supports the

hypothesis that there is a positive relationship between the extent of clinical involvement and level of job satisfaction.

#### Relationship Between Job Satisfaction and Clinical Training and Involvement

The relationship between job satisfaction, the percentage of time spent performing clinical activities, and degree (Hypotheses 3) are depicted graphically using a scatterplot and analyzed statistically using Kendall's Tau B. The scatterplot is depicted at figure 4.

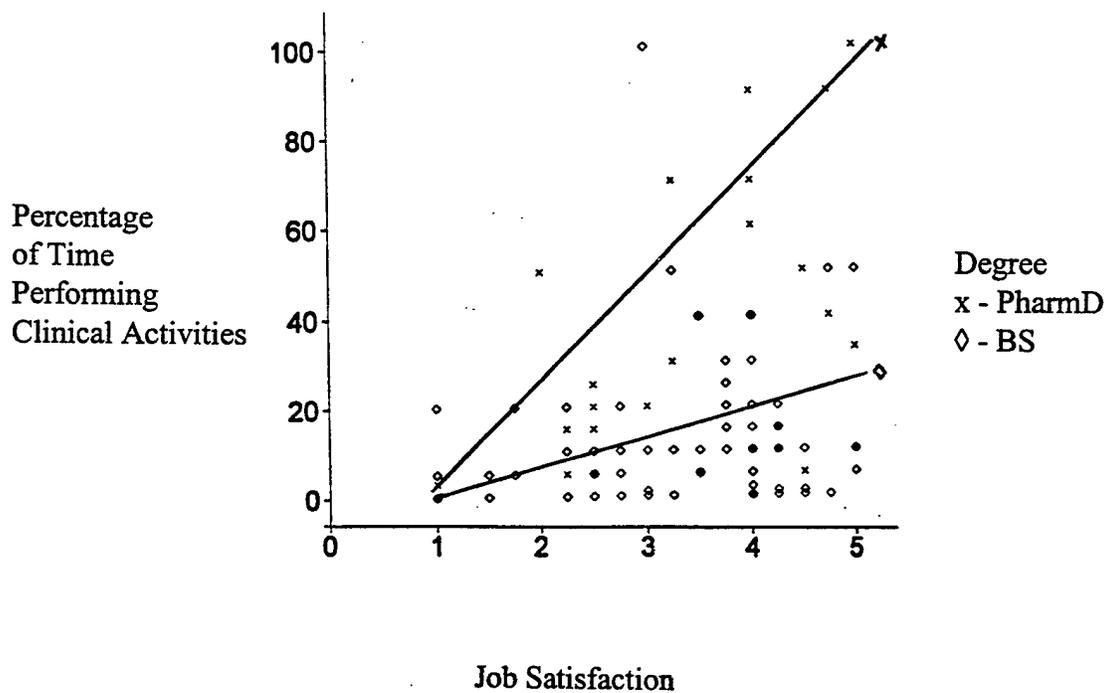


Figure 4. Relationship Between Job Satisfaction and Clinical Training and Involvement

This third hypothesis predicted that when there is a positive relationship between clinical training (degree used as the surrogate measurement) and clinical involvement

(percentage of time spent performing clinical activities), job satisfaction will also be positively correlated. The data depicted in the scatterplot confirms this relationship: as the percentage of time spent performing clinical activities increased among Doctor of Pharmacy educated pharmacists, job satisfaction increased as indicated by the positive slope of responses. Statistically, Kendall's Tau B for this relationship among Doctor of Pharmacy educated pharmacists was 0.29; moderate and significantly positive ( $p < 0.035$ ).

The scatter depicts a similar, but less distinct relationship among Bachelor of Science educated pharmacists. Kendall's Tau B was 0.02. However, this relationship was not found to be statistically significant. This suggests that in order to increase job satisfaction, at least among pharmacists possessing a Doctor of Pharmacy degree, pharmacy managers should pay special attention to tailoring duties that maximize use of clinical skills.

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<sup>1</sup> Pharmacy Officer and NCO Roster, (San Antonio, 1997), 1-38.

<sup>2</sup> M. J. Norusis, SPSS/PC+7.0, Base System Users Guide (Chicago: SPSS Inc, 1995).

<sup>3</sup> Candace W. Barnett and Carole L. Kimberlin, "Development and Validation of an Instrument to Measure Pharmacists' Satisfaction with Their Jobs and Careers," American Journal of Pharmaceutical Education 50 (1986): 5-14.

<sup>4</sup> U.S., Department of Health and Human Services, Public Health Service, Bureau of Health Professionals, Sixth Report to the President and Congress on the Status of Health Personnel in the United States DHS Pubn. No. HRS-P-OD-88-1 (1988), 8-1.

<sup>5</sup> Marvin D. Shepherd and Kenneth W. Kirk, "Analysis of Practice Patterns of Men and Women Pharmacy School Graduates," Contemporary Pharmacy Practice 5 (1982): 195.

<sup>6</sup> Barnett and Kimberlin, 5-14.

<sup>7</sup> Ibid.

<sup>8</sup> Candace W. Barnett and Carole L. Kimberlin, "Levels of Satisfaction Among Florida Pharmacists," Journal of Pharmaceutical Marketing & Management 2, no.4 (1988): 23-44.

<sup>9</sup> David S. Olson and Kenneth A. Lawson, "Relationship Between Hospital Pharmacists' Job Satisfaction and Involvement in Clinical Activities," American Journal of Health-System Pharmacy 53 (1996): 281.

## CHAPTER 5

### CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to determine whether active duty Army pharmacists are currently satisfied with their job; and further, to examine factors that may uniquely affect their job satisfaction. Based on a review of the literature including an analysis of previous research and current pharmacy practice trends, this study sought to evaluate the relationship of job satisfaction to clinical training and clinical involvement. Job satisfaction was predicted to increase when the amount of clinical training and involvement increased (Hypothesis 1 and 2), and specifically when those with high clinical training had a high amount of clinical involvement (Hypothesis 3). A discussion of the results, their ramifications, and suggestions for additional research follows.

#### Summary and Discussion of the Results

Army pharmacists appear to be satisfied with their jobs and careers. The factors that appear to contribute most to job satisfaction within this study population are clinically related activities, company policies, and job role. As clinical training increased, or as the amount of time spent performing clinical activities increased, job satisfaction increased (Hypothesis 1 and 2). When the amount of time spent performing clinical activities was coupled with clinical training (Doctor of Pharmacy degree), a strong and positive association with job satisfaction existed (Hypothesis 3). These results supported the findings of earlier studies that suggested a link between job satisfaction and job roles centered on performing mentally challenging, clinical tasks associated with patient-centered care.

Specific clinical tasks showing a positive, significant relationship with job satisfaction included: providing patient and staff education, participating in adverse drug reaction reporting and medical or health-care team rounds, and providing written drug information to other health-care providers. None of these specific activities require a pharmacist to possess an advanced degree. What is required, however, is the opportunity to perform clinical activities.

As the role of the pharmacist continues to advance from one oriented on traditional distributive functions to one that focuses on patient-centered care, pharmacy managers must reevaluate current job descriptions and ensure current job roles incorporate a variety of clinical activities. This not only maintains practice relevancy during a period of professional change, but promotes job satisfaction as well.

#### Jobs and Career Satisfaction

Using the same facet-free questions in each study, the mean level of job satisfaction among Army pharmacists found in this study was comparable to that found by Barnett and Kimberlin<sup>1</sup> among Florida pharmacists in 1983, and by Olson<sup>2</sup> among Owen Healthcare hospital pharmacists ten years later. While the mean level of job satisfaction was near the neutral point in all three studies, it fell more toward the satisfied end of the continuum in every instance. Certainly, it can be said that Army pharmacists who remain on active duty appear to be more satisfied than not with their jobs. However, conclusions regarding the significance of this trend among these three studies are difficult to make. The study populations are substantially different, as are the clinical orientations which have substantially changed during the past fifteen years.

Despite the different populations, the observed level of job satisfaction reflected by the three studies does not seem to have changed much over fifteen years. In contrast to contrary findings in the overall body of pharmacy job satisfaction literature, the trend is positive. Still, there is plenty of room for improvement and as seen, it need not be at the Army policy level.

Despite a similar mean job satisfaction level, the mean level of career satisfaction in this study was much higher than Barnett and Kimberlin (1986) found fifteen years ago. This might indicate that Army pharmacists are more satisfied with their careers than their 1986 civilian counterparts. However, a number of other simultaneous changes may well play a role. For example, the average tenure of all respondents in this study was greater than ten years, or beyond the midpoint of a military retirement. Previous findings in the literature indicate that job satisfaction increases with increasing tenure. Hence, job satisfaction is likely related to commitment.

On the other hand, this research reaffirmed Barnett and Kimberlin's (1986) conclusions about the significant and positive association between job and career satisfaction. Because job satisfaction is linked to career satisfaction, at any point when an individual experiences negative job satisfaction, he could terminate his career. The converse relationship is not true. That is, because one cannot claim that job satisfaction is not related to career satisfaction, one cannot claim that negative job satisfaction does not influence a decision to terminate one's career.

When this relationship is examined in practical terms, it is possible that many Army pharmacists experienced low job satisfaction during their first assignment. Data

obtained from the Pharmacy Consultant indicates that from fiscal years 1990 through 1994, retention rates of assessed officers ranged from seventeen percent to fifty-four percent annually (or thirty-one percent overall for this period).<sup>3</sup> Consequently, several year groups suffered severe personnel shortages. The implications from these findings are that job satisfaction counts and affects retainability. The Army can ill-afford the cost of continued low pharmacist retainability.

#### Factors Associated with Job Satisfaction

Eight independent variables showed a positive and significant relationship with job satisfaction. Clearly, job satisfaction is a complex, dynamic construct composed of many factors. Interestingly, compensation was found least strongly associated among the eight variables. This finding is contrary to what Equity Theory would predict, particularly given the large pay differences. Army pharmacists appear to be more intrinsically motivated than extrinsically so. Just as interesting, but at the other end of the spectrum, company policies (consistency and uniformity of company policies and practices) rated second most strongly associated among the eight independent variables in this study (but only intermediate in Barnett and Kimberlin's 1986 research). This suggests that uniformity is more important with military members than it is with civilians, a fact that seems very consistent with military culture.

#### Job Satisfaction and Demographic Characteristics

Of all demographic characteristics measured, only age, years in service, and retirement decision demonstrated a significant association with job satisfaction. This finding is consistent with other studies' conclusions ("that the most dissatisfied workers

are the youngest and the most satisfied are those nearing retirement<sup>34</sup>) and reinforces the notion that commitment plays a significant role with an individual's job satisfaction.

### Job Satisfaction and Clinical Training

The first hypothesis (there is a positive relationship between the extent of clinical training and level of job satisfaction) was evaluated against certain aspects of clinical pharmacy training, pharmacy degree, and post-graduate residency training. Army pharmacists experienced significantly greater job satisfaction when their organization, itself, advanced and developed their clinical skills. On the other hand, possessing a Doctor of Pharmacy degree by itself or completing a post-graduate residency illustrated no significant relationship with job satisfaction. These findings indicate that Army pharmacists live in the present (past experiences are valued less) and are seeking constant development, or in other terms, are seeking to achieve self-actualization. This behavior is consistent with Maslow's Needs Theory and the focus on intrinsic vice extrinsic factors, as previously discussed. Hence, local pharmacy managers and departments need to recognize the critical and important role continuous clinical skills training plays in shaping pharmacist job satisfaction. Funding a pharmacist's attendance or sponsoring continuing education seminars is one method of contributing to a subordinate's job satisfaction. Another means, perhaps, would be developing a local staff development program, much like military occupational skill (MOS) or common task (CTT) training for soldiers, incorporating the clinical tasks identified earlier that had a positive and significant relationship with job satisfaction.

### Job Satisfaction and Clinical Activities

Various questions were asked to determine the pharmacist's level of involvement with clinical pharmacy activities. The data (as time spent performing traditional dispensing duties increased, job satisfaction decreased) revealed that pharmacists do not expect to, nor value merely distributing drugs. Army pharmacists expect their job role to possess a clinical component. When Army pharmacists are permitted to spend time performing clinical tasks, an increase in job satisfaction will result. This reaffirms Olson's 1993 finding among Owen Healthcare pharmacists<sup>5</sup> and is consistent with the vision of pharmacy practice outlined by Hepler and Strand.<sup>6</sup>

### Job Satisfaction and Clinical Training and Involvement

Surprisingly, the Doctor of Pharmacy degree alone was not found to be significantly associated with job satisfaction. However, when individuals with a Doctor of Pharmacy degree are permitted to spend time performing clinical tasks, a positive and significant relationship with job satisfaction is noted. This relationship is not observed under the same conditions using Bachelor of Science educated pharmacists. Such finding implies that pharmacy managers should recognize the high job satisfaction payoff obtained when they allocate time to their Doctor of Pharmacy educated pharmacists, to do clinical activities.

### Limitations

The primary limitation of this study is the inability to generalize the results beyond active-duty Army pharmacists. Generalizability may only extend to active-duty

pharmacists employed by the other uniformed services. Even with a response rate of nearly eighty percent, there is a possibility of nonresponse bias. One cannot know the nature of job satisfaction, or other demographics of the twenty percent that did not respond. Despite the absence of identifying codes or features being placed on the survey, some individuals may not have been confident of complete anonymity. This may have resulted in not completing the survey, or biasing the responses that were submitted. Likewise, because surveys were mailed to duty addresses, some Army pharmacists who completed the survey at work may have feared their boss "looking over their shoulder" or sought some measure of social desirability when marking their responses. This factor may have potentially skewed the data. The extent to which these relationships might apply to reserve Army pharmacists is also unknown.

In addition, Army pharmacists who have departed from active-duty service were not surveyed. Such a population's attitudes would be expected to be dramatically different from the sampled population. Lastly, several questions requested respondents provide quantitative estimates (i.e., amount of time doing certain activities). Because this data was not verified by actual observation or independent sources, this data may be skewed by subject bias.

#### Implications for Future Research

The results of this study point toward future research in several areas: issues with the survey instrument, Army pharmacy, the pharmacy field, in general, and lastly, job satisfaction. First, in this study five independent variable subscales were eliminated due to low internal consistency (reliability). Four of the five subscales (autonomy, role stress,

staffing, and tangible recognition) were eliminated by Barnett and Kimberlin, as well. Hence, further refinement of these subscales is needed to improve their reliability. In addition, the clinical activities within the survey should be modified to reflect the recently released Pharmacy Practice Activity Classifications.<sup>7</sup> This taxonomy, the collaborated product of ten national professional pharmacy associations, provides a consistent, common language, and broadly accepted classification of pharmacy practice activities, thereby permitting comparisons between or among data sets from different time periods.

In regard to future research of Army pharmacy, longitudinal attitudes concerning job satisfaction must be studied. Readministration of the survey would confirm or deny the current findings and relationships and permits a trend analysis. One trend of interest is the evaluation of whether Army pharmacists are spending more time performing clinical activities and, if so, whether this has a long-term impact on job satisfaction and retainability. Another area of potential research given the amount of time spent performing related activities is the relationship between job satisfaction and management. At issue, for instance, might be whether a high clinical orientation or a high management orientation should be the basis for recruiting and assessing pharmacists on active-duty. If a high management orientation is found to be desired, such a recruitment focus would possibly prevent job dissatisfaction resulting from unrealized expectations concerning the job role (especially if a flat or negative trend with performing clinical activities is determined). Another question future research might address is whether the Army should enhance its post-graduate residency training programs oriented on enhancing management skills and abilities. Lastly, future research should investigate why Army

pharmacists terminate their careers. Low job satisfaction, especially during the early years, may well be at issue.

In the broader field of pharmacy, additional evaluation of the time spent performing drug distribution is needed. Automation, alone, is likely not enough; the Army already uses automation extensively. Perhaps the manpower and benchmark analyses are inexact and need to be revised. For example, is the amount of time needed to counsel a patient (mandated by OBRA '90) included in the time allocated to dispense a prescription?

Lastly, regarding job satisfaction research in general, professional pharmacy practice consists of two dichotomous roles (business and clinical). Additional examination of the factors associated with white collar worker job satisfaction and business (for example, management) is needed. Much of the empirical job satisfaction literature is focused exclusively on blue collar work. Great benefit will be derived from gaining more insight about satisfaction as it relates directly to business, management, and service-oriented work.

In all, this research provided additional clarification to a current issue within Army pharmacy practice. The findings indicate that Army pharmacists tend to be satisfied with their job and career, and reveal a little more about many of the factors that impact that satisfaction. The results of the statistical analyses demonstrated support for each hypothesis in almost every instance. Explanations and implications for the results were discussed and suggestions for additional research to advance the understanding of job satisfaction were provided.

<sup>1</sup> Candace W. Barnett and Carole L. Kimberlin, "Levels of Satisfaction Among Florida Pharmacists," Journal of Pharmaceutical Marketing & Management 2 (1988): 23-44.

<sup>2</sup> David S. Olson and Kenneth A. Lawson, "Relationship Between Hospital Pharmacists' Job Satisfaction and Involvement in Clinical Activities," American Journal of Health-System Pharmacy 53 (1996): 281-4.

<sup>3</sup> Colonel Roger F. Williams, interview by author, electronic mail, Fort Sam Houston, 2 February 98.

<sup>4</sup> Paul M. Muchinsky, Psychology Applied to Work: An Introduction to Industrial and Organizational Psychology, 2d ed. (Chicago: The Dorsey Press, 1987), 412.

<sup>5</sup> David S. Olson and Kenneth A. Lawson, "Relationship Between Hospital Pharmacists' Job Satisfaction and Involvement in Clinical Activities," American Journal of Health-System Pharmacy 53 (1996): 281-4.

<sup>6</sup> Charles D. Hepler and Linda M. Strand, "Opportunities and Responsibilities in Pharmaceutical Care," American Journal of Pharmaceutical Education 53 (1989): 7S-15S.

<sup>7</sup> American Society of Health-System Pharmacy, "Pharmacy Practice Activity Classification Released," [Online] available from <http://www.ashp.org/public/news/breaking/pharmactivity.html>, 24 March 1998.

APPENDIX A. EFFECTS OF VARIOUS EVENTS, CONDITIONS, AND AGENTS ON  
JOB SATISFACTION

Source	Effect
<i>Events or conditions</i>	
Work itself: challenge	Mentally challenging work that the individual can successfully accomplish is satisfying.
Work itself: physical demand	Tiring work is dissatisfying.
Work itself: personal interest	Personally interesting work is satisfying
Reward structure	Just and informative rewards for performance are satisfying.
Working conditions: physical	Satisfaction depends on the match between working conditions and physical needs.
Working conditions: Goal attainment	Working conditions that facilitate goal attainment are satisfying.
<i>Agents</i>	
Self	High self-esteem is conducive to job satisfaction.
Supervisors, co-workers, subordinates	Individuals will be satisfied with colleagues who help them attain rewards.
	Individuals will be satisfied with colleagues who see things the same way they do.
Company and management	Individuals will be satisfied with companies that have policies and procedures designed to help the individual attain rewards.
	Individuals will be dissatisfied with conflicting roles and/or ambiguous roles imposed by company and/or management.
Fringe benefits	Benefits do not have a strong influence on job satisfaction for most workers.

Source: Frank J. Landy and Don A. Trumbo, Psychology of Work Behavior, rev. ed. (Homewood: The Dorsey Press, 1980), 410.

## APPENDIX B. SURVEY

### Army Pharmacy Job Satisfaction Questionnaire

**Directions:** The following questions seek your opinion about job satisfaction at your present position. You will also be asked questions dealing with your clinical pharmacy training and clinical pharmacy involvement at your place of work. Finally, you will be asked questions about your personal and job characteristics.

Using the scale below, please circle the number of the response (which appears to the right of each statement) and which most closely represents your view.

Strongly agree 1	Tend to agree 2	Neither agree nor disagree 3	Tend to disagree 4	Strongly disagree 5
------------------------	-----------------------	------------------------------------	--------------------------	---------------------------

The term “supervisor” in the questionnaire refers to your immediate supervisor, the person you report to.

#### **A. MY SUPERVISOR AND HIS OR HER PRACTICES**

- |  |           |
|--|-----------|
| 1. My chance for promotion within the Army is good.  | 1 2 3 4 5 |
| 2. My prospects for substantial increases in future earnings are not good where I am employed.                             | 1 2 3 4 5 |
| 3. Management’s policies and practices at my place of employment are applied uniformly.                                    | 1 2 3 4 5 |
| 4. My supervisor gives ample consideration to employee complaints and responds to them in a timely manner.                 | 1 2 3 4 5 |
| 5. My supervisor seems to be “in the dark” about what is going on at work and the problems we face.                        | 1 2 3 4 5 |
| 6. My salary is equivalent to the salary of persons holding similar positions in other organizations.                      | 1 2 3 4 5 |
| 7. My supervisor is overly critical.   | 1 2 3 4 5 |
| 8. I am allowed a sufficient amount of freedom to decide how I do my work.   | 1 2 3 4 5 |
| 9. I am satisfied with the fringe benefits I receive.  | 1 2 3 4 5 |
| 10. Staffing in the pharmacy is inadequate; not enough employees are hired to cover the workload.                          | 1 2 3 4 5 |
| 11. My supervisor gives me a sufficient amount of information (feedback) about how well I am doing my job.                 | 1 2 3 4 5 |
| 12. Management only seems to be concerned about the amount of work I do, not whether I enjoy my work.                      | 1 2 3 4 5 |
| 13. My supervisor has an adequate knowledge of his or her job.   | 1 2 3 4 5 |
| 14. I am not consulted when decisions are made that affect my job.   | 1 2 3 4 5 |
| 15. Considering the kind of work I do and the amount of responsibility I have, my pay is about right.                      | 1 2 3 4 5 |
| 16. I cannot rely on the policies and practices set by management as they are inconsistent and subject to frequent change. | 1 2 3 4 5 |
| 17. My supervisor is honest and cordial in telling me what he or she thinks about my ideas.                                | 1 2 3 4 5 |
| 18. During many hours of the day, there are more pharmacy employees on the job than needed.                                | 1 2 3 4 5 |
| 19. My supervisor provides competent supervision.  | 1 2 3 4 5 |
| 20. When the situation calls for a decision, my supervisor is indecisive.  | 1 2 3 4 5 |
| 21. When employees in the pharmacy consistently do an exceptional job, they get a promotion or pay raise.                  | 1 2 3 4 5 |
| 22. I determine the pace at which I work.  | 1 2 3 4 5 |

*Please continue on the back of this page*

Strongly agree 1	Tend to agree 2	Neither agree nor disagree 3	Tend to disagree 4	Strongly disagree 5
------------------------	-----------------------	------------------------------------	--------------------------	---------------------------

23. My supervisor does not delegate authority. 1 2 3 4 5
24. Only highly competent people are hired to work within the Army. 1 2 3 4 5
25. My supervisor never praises me when I do a good job. 1 2 3 4 5
26. Comparing my position with other positions within this organization (consider seniority, education, importance of work, etc.), my salary is too low. 1 2 3 4 5

### **B. WORK SCHEDULE IN PHARMACY**

1. Individual employee needs and preferences are taken into account when work hours in my pharmacy are scheduled. 1 2 3 4 5
2. Management is unfair in scheduling of overtime, evening, Sunday and holiday hours. 1 2 3 4 5
3. Unpopular work hours are divided evenly among employees. 1 2 3 4 5

### **C. PHARMACY DUTIES**

1. The types of duties (clinical, managerial, distributive) which management expects me to perform are the same as the type of duties I expect to perform. 1 2 3 4 5
2. I am expected to perform too many managerial duties. 1 2 3 4 5
3. I am expected to perform too many traditional distributive duties. 1 2 3 4 5
4. Management does not make clear what type of duties (clinical, managerial, distributive) are expected of me. 1 2 3 4 5
5. Non-pharmacists often perform functions which should only be performed by a pharmacist. 1 2 3 4 5
6. There is a lot of variety (clinical, managerial, distributive) in my job. 1 2 3 4 5

### **D. THE CLINICAL ENCOUNTER - PATIENTS**

1. Patients are only concerned about getting their medication as quickly as possible so that they can leave as quickly as possible. 1 2 3 4 5
2. Patients treat me courteously. 1 2 3 4 5
3. Patients show appreciation for the services I provide for them. 1 2 3 4 5

### **E. THE PROFESSIONAL ENCOUNTER - CO-WORKERS & OTHER HEALTH CARE PROVIDERS**

1. Physicians consult with me often on professional matters. 1 2 3 4 5
2. My fellow employees do not treat me with the respect due a professional person. 1 2 3 4 5
3. The people with whom I work are friendly. 1 2 3 4 5
4. Nurses are uncooperative when I initiate communication with them about job-related matters. 1 2 3 4 5
5. Nurses often initiate consultation with me on professional matters. 1 2 3 4 5
6. Physicians are uncooperative when I must communicate with them about job-related matters. 1 2 3 4 5
7. I am satisfied with the "on-the-job" relationships I have with my co-workers. 1 2 3 4 5
8. Considering the amount of education which pharmacists have, society does not accord them the status they deserve. 1 2 3 4 5

### **F. WORK, ENVIRONMENT & REWARDS**

1. My workload is excessive. 1 2 3 4 5
2. My work schedule is flexible. 1 2 3 4 5
3. The monetary rewards I receive from my work are less than they should be. 1 2 3 4 5
4. The number of hours I work is excessive. 1 2 3 4 5
5. My environmental working conditions (lighting, air conditioning, heating, bathroom facilities, ventilation, noise level, etc.) are poor. 1 2 3 4 5

Strongly agree 1	Tend to agree 2	Neither agree nor disagree 3	Tend to disagree 4	Strongly disagree 5
---------------------	--------------------	---------------------------------	-----------------------	------------------------

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 6. I have the opportunity to make use of my skills and abilities at the hospital where I work. | 1 | 2 | 3 | 4 | 5 |
| 7. I find challenge in my work.  | 1 | 2 | 3 | 4 | 5 |

**G. JOB SATISFACTION IN GENERAL**

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1. All things considered, I am satisfied with my current job.   | 1 | 2 | 3 | 4 | 5 |
| 2. The idea of spending the remainder of my working life in a job like my current one is depressing.  | 1 | 2 | 3 | 4 | 5 |
| 3. I often leave work with a "bad" feeling, a feeling that I am doing something which I do not enjoy. | 1 | 2 | 3 | 4 | 5 |
| 4. I often get so wrapped up (interested) in my work that I lose track of time.                       | 1 | 2 | 3 | 4 | 5 |

**H. CAREER SATISFACTION**

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 1. Knowing what I know now, if I had to decide all over again whether to go into pharmacy, I would choose another field. | 1 | 2 | 3 | 4 | 5 |
| 2. If I had a son who told me he was interested in pursuing a career in pharmacy, I would encourage him.                 | 1 | 2 | 3 | 4 | 5 |
| 3. If I had a daughter who told me she was interested in pursuing a career in pharmacy, I would encourage her.           | 1 | 2 | 3 | 4 | 5 |
| 4. If I were free to pursue any type of career I wanted, I would stay in pharmacy.                                       | 1 | 2 | 3 | 4 | 5 |

**I. CLINICAL PHARMACY TRAINING AND PRACTICE**

The following set of questions assess your level of agreement or disagreement with statements about your clinical pharmacy training or the clinical pharmacy services provided at your hospital.

For the purpose of this questionnaire, the term "clinical pharmacy services" refers to all those pharmaceutical services that promote rational drug therapy. Some examples include: drug-use evaluation, antibiotic monitoring, pharmacokinetic consultation, drug therapy monitoring, adverse drug reaction monitoring, patient education, and inservice programs for the medical staff, e.g., nurses, physicians, etc.

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 1. The school of pharmacy I attended prepared me adequately to provide clinical pharmacy services.                                   | 1 | 2 | 3 | 4 | 5 |
| 2. Since graduating from pharmacy school, many of my clinical pharmacy skills have regressed due to a lack of use.                   | 1 | 2 | 3 | 4 | 5 |
| 3. My organization helps me develop my clinical pharmacy skills.   | 1 | 2 | 3 | 4 | 5 |
| 4. The quality of clinical pharmacy services provided at my hospital is appropriate for the patients we treat.                       | 1 | 2 | 3 | 4 | 5 |
| 5. Working for my organization has advanced my clinical pharmacy skills.   | 1 | 2 | 3 | 4 | 5 |
| 6. My organization is committed to pharmacy as a clinical profession.  | 1 | 2 | 3 | 4 | 5 |
| 7. The responsibilities for providing clinical pharmacy services are shared among the professional staff of the pharmacy department. | 1 | 2 | 3 | 4 | 5 |
| 8. The department promotes the clinical services of the pharmacy to physicians and other health care providers.                      | 1 | 2 | 3 | 4 | 5 |

**J. CLINICAL PHARMACY INVOLVEMENT**

The following questions ask you to indicate whether or not you participate in the following clinical pharmacy services.

Please answer yes, no, or not applicable (NA) to the following questions.

- |   |         |        |        |
|---|---------|--------|--------|
| 1. I participate in the drug-use evaluation program at my hospital.   | ___ Yes | ___ No | ___ NA |
| 2. I monitor patient drug therapy, i.e., to evaluate the appropriateness of use, dose, dosage regimen, route of administration, therapeutic duplication, and drug interactions. | ___ Yes | ___ No | ___ NA |

*Please continue on the back of this page*

3. I consult with the prescriber on antibiotic therapy to recommend changes based upon monitoring activities.  Yes  No  NA
4. I provide patient education regarding drug therapy.  Yes  No  NA
5. I participate in the detection, monitoring, documentation, management, and reporting of adverse drug reactions.  Yes  No  NA
6. I participate in medical or health-care team rounds.  Yes  No  NA
7. I provide educational sessions or materials for other health-care professionals, e.g., inservice training, staff development.  Yes  No  NA
8. I obtain clinical laboratory data to monitor drug regimen efficacy and/or toxicity via a pharmacokinetic monitoring system.  Yes  No  NA
9. I provide written drug information to health-care professionals.  Yes  No  NA
10. Please estimate what percentage of your typical work day is spent in the following activities (total should equal 100%):
- Distributive activities: \_\_\_\_\_ %
- Clinical activities: \_\_\_\_\_ %
- Management activities: \_\_\_\_\_ %
- Total: \_\_\_\_\_ 100 %

### K. PERSONAL AND JOB CHARACTERISTICS

1. Year of birth: \_\_\_\_\_
2. Gender: Male  Female
3. Current rank/grade: \_\_\_\_\_
4. What is your current job title:  Chief, pharmacy service  Staff pharmacist  
 Assistant chief, pharmacy service  Student: \_\_\_\_\_ (program)  
 Chief of a section, e.g., Outpatient, Inpatient  Resident: \_\_\_\_\_ (type)  
 Clinical pharmacist
5. What degree(s) have you earned (check all that apply):  Bachelor of Science (BS)  
 Doctor of Pharmacy (PharmD)  
 Master of Science (MS)  
 Others: \_\_\_\_\_
6. What year did you graduate with your entry-level pharmacy degree: \_\_\_\_\_
7. Are you board certified?  Yes  No \_\_\_\_\_ (specialty)
8. Have you completed a:
- a. Residency:  Yes  No \_\_\_\_\_ (type)
- b. Fellowship:  Yes  No \_\_\_\_\_ (type)
9. How many years have you been in the service? \_\_\_\_\_ years
10. Do you plan to stay in the service until retirement?  Yes  No  Uncertain
11. Are you stationed at a  MEDDAC  MEDCEN  Other (specify): \_\_\_\_\_
12. Characterize the day you had when filling out this survey:  Excellent  Good  Neutral  Fair  Bad

Thank you for your time and cooperation. Please return the completed questionnaire using the enclosed postage-paid, self-addressed envelope to MAJ Peter T. Bulatao, 4120 Newman Street, Leavenworth, Kansas 66048. No additional postage is necessary. Please return by 28 Feb 98.

APPENDIX C. COVER LETTER

United States Army Medical Command  
2050 Worth Road  
Fort Sam Houston, Texas 78234-6000  
(210) 221-6344/6608; (DSN) 471-6344/6608  
COL\_ROGER\_WILLIAMS@smtplink.medcom.amedd.army.mil

January 30, 1998

Dear Colleague,

The purpose of this letter is to request your time in completing the enclosed job satisfaction questionnaire for pharmacists assigned in the United States Army.

This research evaluates 'our' job satisfaction, a critical element of the work environment. As the Pharmacy Consultant, this information is valuable in assessing the current state of satisfaction among our officers during a period of professional challenge and change. It is my desire that this research will aid our profession by identifying elements that need improvement. Hence, knowing this information has several implications. Among others, these include an evaluation of our job roles and responsibilities, identification of a potential factor regarding officer turnover, or on the other hand, a recruiting and retention strategy.

The enclosed survey is designed to collect information about your level of job satisfaction . It also measures your clinical pharmacy involvement and clinical pharmacy training in the facility where you work. It is important that each questionnaire be completed and returned so that the results accurately represent and reflect the opinions of all Army pharmacists.

Your responses to this questionnaire will be completely anonymous and confidential. All analyses will be conducted on all responses received as a group and non on an individual basis. No individual responses will be reported or released.

The questionnaire should take no longer than fifteen minutes to complete. Please return it in the enclosed stamped, self-addressed return envelope for analysis by February 28, 1998. No additional postage is required.

If you have any questions, you may contact my by phone or email. Thank you in advance for your time and consideration in completing this questionnaire.

Sincerely,

/s/

Roger F. Williams  
Colonel, US Army  
Pharmacy Consultant

Encls  
as

APPENDIX D. REMINDER LETTER

United States Army Medical Command  
2050 Worth Road  
Fort Sam Houston, Texas 78234-6000  
(210) 221-6344/6608; (DSN) 471-6344/6608  
COL\_ROGER\_WILLIAMS@smtplink.medcom.amedd.army.mil

February 13, 1998

Dear Colleague,

Two weeks ago, I mailed a pharmacist job satisfaction questionnaire to you and other United States Army pharmacists.

Hopefully, you have already completed the questionnaire and returned it to my designated analyst. If so, please accept my sincere thanks. If you have not, please do so today. **It is extremely important that your questionnaire be completed and returned so that the results truly reflect the opinions of all Army pharmacists.**

If by some chance you did not receive the questionnaire, or it has been misplaced, please contact my at (210) 221-6344/6608 or my email address listed above. I will place another questionnaire in the mail for you today.

Again, thank you in advance for your participation.

Sincerely,

/s/

Roger F. Williams  
Colonel, US Army  
Pharmacy Consultant

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#### Miscellaneous

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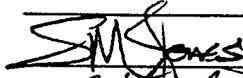
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