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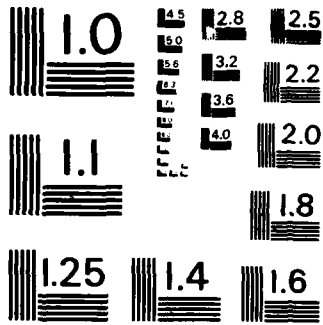
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## ABSTRACT

This study measured job satisfaction of Air Force pharmacists and pharmacy technicians. A survey was designed to collect demographic data and measure 12 facets of job satisfaction. Pharmacy job satisfaction, Air Force job satisfaction, and role ambiguity were the dependent variables measured. Response rates were 82% for pharmacists and 59% for technicians.

Results indicated pharmacists were satisfied with all facets of job satisfaction measured. Multiple regression indicated specific job motivators (ability utilization, work challenge, goals and plans, policies and practices, and staffing) accounted for 43.1% of the variance in pharmacists' job satisfaction. Pharmacists in management positions were more satisfied than staff pharmacists.

Technicians were satisfied with most job satisfaction facets measured, including overall pharmacy job satisfaction. However, the technicians were dissatisfied with their compensation. Multiple regression indicated specific job motivators (ability utilization, advancement, and work challenge) accounted for 48.1% of the variance in technicians' pharmacy job satisfaction.

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JOB SATISFACTION IN PHARMACIES STAFFED  
PREDOMINANTLY WITH TECHNICIANS

by

Paul Joseph Shonebarger

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A Thesis Submitted to the Faculty of the  
DEPARTMENT OF PHARMACY PRACTICE  
In partial fulfillment of the Requirements  
For the Degree of  
MASTER OF SCIENCE  
In the Graduate College  
THE UNIVERSITY OF ARIZONA

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## ABSTRACT

This study measured job satisfaction of Air Force pharmacists and pharmacy technicians. A survey was designed to collect demographic data and measure 12 facets of job satisfaction. Pharmacy job satisfaction, Air Force job satisfaction, and role ambiguity were the dependent variables measured. Response rates were 82% for pharmacists and 59% for technicians.

Results indicated pharmacists were satisfied with all facets of job satisfaction measured. Multiple regression indicated specific job motivators (ability utilization, work challenge, goals and plans, policies and practices, and staffing) accounted for 43.1% of the variance in pharmacists' job satisfaction. Pharmacists in management positions were more satisfied than staff pharmacists.

Technicians were satisfied with most job satisfaction facets measured, including overall pharmacy job satisfaction. However, the technicians were dissatisfied with their compensation. Multiple regression indicated specific job motivators (ability utilization, advancement, and work challenge) accounted for 48.1% of the variance in technicians' pharmacy job satisfaction.

## CHAPTER 1.

### INTRODUCTION

Pharmacy managers should recognize the importance of job satisfaction. Low job satisfaction can lead to problems with employee motivation, productivity, and eventually burnout. Unfortunately, studies indicate a trend of low job satisfaction in pharmacy (Williamson, Kabat, 1972; Curtiss, Hammel, Johnson, 1978; Coburn, Gagnon, Eckel, 1980; Carroll, Schulz, Gagnon, 1982; Noel, Hammel, Bootman, 1982a). Providing more rewarding jobs for pharmacists and technicians should be a priority of pharmacy managers.

If the pharmacy profession is to grow and prosper, pharmacy managers must provide a more rewarding working environment for their employees (Johnson, Hammel, Heinen, 1977). According to Herzberg's theory of hygienes and motivators, there are two distinct factors that relate to job satisfaction, Hygiene factors include salary, status, job security, quality of work environment, interpersonal relations, and quality of supervision. If hygiene factors are not adequate, then job dissatisfaction results. In contrast, motivators cause job satisfaction. Motivators include recognition of achievement, opportunities for



advancement, interesting and challenging work, responsibility, and opportunities for growth (Lambert, Wertheimer, Johnson, 1980a; Grace, 1980).

Better hygiene factors, such as better pay, could increase job satisfaction for the pharmacy technicians who complain they earn barely enough to live on (Coburn et al., 1982). However, increased productivity has been found to correlate with increased satisfaction (improved motivators), not with decreases in dissatisfaction (improved hygienes) (Grace, 1980). Therefore, both pharmacy technicians and pharmacists need increased motivators in their jobs.

The literature pertaining to job satisfaction in pharmacy suggests increasing the motivators in pharmacy jobs. For example, some authors suggest the use of bonuses or pay incentives to motivate pharmacy employees (Hussain, Wertheimer, 1976; Schneider et al., 1981). Other authors suggest providing more interesting and challenging work for pharmacy employees (Lambert, Wertheimer, Johnson, 1980a).

However, the idea of providing pay incentives or bonuses to reward selected employees is very complicated at best, and may only be effective for limited periods of time (Standish, 1982). The suggestion that increasing clinical features of pharmacy jobs will increase job satisfaction, assumes that pharmacists who have been in

drug distribution or management for several years would receive increased job satisfaction from clinical pharmacy. This may not be true for all pharmacy employees. For example, some people like routine and repetitive work, and may become less satisfied if given more complex tasks (Donehew, 1977).

The lack of opportunity for promotion is a frequent complaint among pharmacists (Libby, Kirk, 1976; Johnson et al., 1977; Rauch, 1980; Beno, Norwood, 1981; McGhan, Adamcik, 1981, 1982; Noel et al., 1982a; Carroll et al., 1982). However, recent studies of job characteristics illustrates that pharmacists and pharmacy students do not consider opportunity for advancement a highly important job characteristic (Stewart, Purohit, 1980; McGhan, Adamcik, 1981, 1982; Purohit, Lambert, 1983). In fact, the job characteristics rated as important by pharmacists (and pharmacy students) are often pay related (Kirk, Ohvall, 1973; Kirk, Ohvall, 1975; Fuselier, Tanja, 1975; Baldwin, Day, Riley, 1980; Purohit, Lambert, 1983).

Pharmacists have a higher interest in economic rewards than the population in general (Stewart, Purohit, 1980; Baldwin, Day, Riley, 1980). In addition to the higher economic interests, pharmacists place a heavy value on several other hygiene factors in their jobs (Stewart, Purohit, 1980).

Even with a heavy emphasis on the hygiene factors of job satisfaction, sufficient motivators are needed to provide satisfying pharmacy jobs. According to Herzberg's two-factor theory, job environments that offer sufficient hygiene factors, but insufficient motivators, lead to workers that are neither dissatisfied nor satisfied (i.e. neutral) about their work (Lambert et al., 1980a). Accordingly, professionals working in job environments that do not motivate them are unlikely to grow professionally. If unmotivating jobs predominate an entire profession, then it is unlikely that the profession will prosper.

For example, several studies of job satisfaction in pharmacy indicate that younger pharmacists are less satisfied with their jobs than older pharmacists (Ahmann, 1976; Shoaf, Gagnon, 1980; Purohit, Stewart, 1980a, 1980b; Perez, Goldstein, Ball, 1981; Noel et al., 1982a). However, the younger pharmacists have the largest amount of training in clinical practice, potentially the largest area of growth for pharmacy as a profession. If younger (clinical) pharmacists are not finding satisfaction in their jobs and profession, then they may experience burnout, declining commitment to the job and profession, and obsolescence (Noel, Hammel, Bootman, 1982b).

### Statement of the Problem

Pharmacy researchers have expended a substantial effort trying to find clues to what will provide job satisfaction for pharmacy personnel. The problem may be that in pharmacies today, we have pharmacists doing technical work, and technicians frustrated by pharmacists unwilling to relinquish their hold on technical jobs. As a result, the boundaries between professional roles and technical roles are often ambiguous. Therefore, neither pharmacists nor pharmacy technicians are satisfied with their jobs.

By clinging to traditional (technical) roles, pharmacists slow the growth of the profession toward more clinical (professional) roles. An expanded technical role for technicians would lead to an expanded professional (clinical) role for pharmacists (Oddis, 1979). Several job satisfaction studies have revealed that pharmacists practicing in clinical roles have higher job satisfaction than nonclinical pharmacists (Rauch, 1981; Quandt, McKercher, Miller, 1982; Noel et al., 1982a).

In most areas of employment improving job satisfaction by itself would not necessarily lead to increased productivity (Herrick, 1976). However, in pharmacy, low job satisfaction is symptomatic of an underlying problem within the profession; that is,

frustration resulting from underused abilities. Challenging jobs that allow both pharmacists and technicians to better use their abilities should result in improved job satisfaction, more motivated employees, and ultimately improved health care.

#### The Purpose of This Study

This study measured job satisfaction characteristics of pharmacies in the United States Air Force that use technicians to perform several tasks traditionally performed by pharmacists. The role of the pharmacy technician is enhanced when it is expanded to include technical functions presently performed by pharmacists. In addition, when most of the technical functions in pharmacy are performed by technicians, pharmacists are free to expand their professional roles.

Pharmacists currently performing technical functions could better use their abilities in management, drug information, poison control, teaching, research, industry or clinical positions. Ability utilization consistently appears to be related to pharmacists' job satisfaction (Robers, 1983).

Pharmacy leaders can apply information from this study to generate more meaningful and rewarding work for both technicians and pharmacists.

Air Force pharmacies use technicians to accomplish tasks traditionally performed by pharmacists. For example, Air Force pharmacy technicians perform compounding, dispensing, and management functions commonly performed by pharmacists in most civilian pharmacies. Pharmacists in Air Force pharmacies are involved in management, teaching, drug information, and clinical pharmacy. Therefore, this study will measure the job satisfaction of pharmacists and technicians working in Air Force pharmacies.

#### Conceptual Definition of Terms

Clinical pharmacists. Pharmacists who view themselves as primarily involved with clinical practice. Clinical practice includes (but is not limited to) drug utilization reviews, professional and patient education, drug information, or poison control.

Extrinsic job characteristics. Job characteristics related to the context or environment where the work is done. These job features are determined by external events or other people, and include working relationships, supervision, policy and administration, salary, and job security. (Stewart, Purohit, 1980).

Hygienes. Factors that prevent the development of job dissatisfaction. Hygiene factors include salary, status, and job security, quality of work environment, interpersonal relations, and considerate supervision.

Inpatient pharmacists or technicians. Pharmacists or technicians who view themselves as primarily involved with the traditional functions of an inpatient pharmacy environment.

Intrinsic job characteristics. Job characteristics related to the content and tasks involved in a job and opportunities provided for self-expression and self-actualization. Includes responsibility, variety, skill, autonomy, opportunities for personal growth and development, and feelings of pride and accomplishment (Stewart, Purohit, 1980).

Management pharmacists. Pharmacists primarily involved with planning, coordinating, directing and controlling most aspects of the pharmacy (e.g. director of pharmacy).

Outpatient pharmacists or technicians. Pharmacists and technicians who view themselves as primarily involved with the traditional functions of an outpatient pharmacy environment.

Philosophy of Practice. Prejudices, convictions, and beliefs an individual has about the manner pharmacy (or medicine in general) should be practiced.

Traditional Job Motivators. Factors recognized by Herzberg as the causes of job satisfaction. They include recognition of achievement, opportunity for advancement, challenging work, and opportunities for growth.

## CHAPTER 2.

### A REVIEW OF RELATED LITERATURE

The first section of this chapter pertains to management theories that could be used by pharmacist managers to motivate pharmacy personnel and improve job satisfaction. Theories of employee motivation by Herzberg, MacGregor, Hampton, and others are applied to pharmacy management. The use of evaluations and pay incentives to motivate employees are also discussed.

The next section of this chapter reviews characteristics of pharmacists and pharmacy technicians that may be related to job satisfaction in pharmacy. For example, insight concerning what pharmacists want from their jobs can be gained from studies of pharmacy students. Additional insights can be gained from a study of job satisfaction characteristics considered important by practicing pharmacists. In addition, characteristics of pharmacy technicians and their jobs are explored.

Finally, this chapter chronologically reviews the job satisfaction studies recorded in pharmacy literature since 1972, including studies of both pharmacists and pharmacy technicians. Some of the studies look at factors such as how job content relates to job satisfaction. For



example, several studies show pharmacists with a job containing a higher clinical component are more satisfied with their jobs (Rauch, 1981; Quandt et al., 1982; Noel et al., 1982a). Still other studies look at the job satisfaction of women pharmacists. These studies are significant because the proportion of active women pharmacists (full-time and part-time) has nearly doubled in approximately a seven year period (Nice, 1981).

#### Motivation Theories

According to Herzberg's theory of hygienes and motivators, job satisfaction and dissatisfaction are not two ends of a continuum (Lambert et al., 1980a). Herzberg envisioned two separate continua, with job satisfaction ranging from neutral to positive, and job dissatisfaction ranging from neutral to negative.

Hygienes prevent job dissatisfaction. Hygiene factors include salary, status, job security, quality of the work environment, interpersonal relations, and considerate supervision. Motivators are the job characteristics that lead to increased job satisfaction. Recognition of achievement, opportunities for advancement, interesting and challenging work, responsibility, and opportunities for growth are motivators (Lambert et al., 1980a).

Studies of job satisfaction among pharmacists suggest that low motivators exist in pharmacy work environments (Donehew, 1978). Grace (1980) proposes improving job satisfaction in pharmacy by loading tasks with true work motivators that allow the employee 1) actual achievement, 2) recognition for the achievement, 3) increased responsibility for performance, 4) opportunity for growth, and 5) a chance for advancement.

Progressive drug distribution programs with clinical pharmacy services not only provide improved health care for patients, but also a working environment where pharmacists are routinely exposed to motivators. Accordingly, pharmacists working in clinical environments routinely report higher job satisfaction than their counterparts (Rauch, 1981; Quandt et al., 1982; Noel et al., 1982a).

Pay can be used as a motivator when it is received as a direct reward for outstanding performance (Hussain, Wertheimer, 1976). In order to reward superior work with increases in pay, several pharmacy managers have developed programs for evaluating the competency of pharmacists and technicians. For example, by accruing points through job evaluations, pharmacists at Ohio State University Hospitals can obtain pay raises and promotions (Schneider et al., 1981). In addition to providing feedback, performance evaluations of technicians can determine the proficiency

gained from the technicians' training and identify areas for further instruction (Oleen, 1982).

McGregor's Theories X and Y outline two different sets of assumptions managers can make about employees. The first set of assumptions, called Theory X assumes that the average person dislikes work and will avoid doing it. It also assumes that people must be coerced, manipulated, or even threatened with punishment in order to motivate them. In addition, according to Theory X, the average worker prefers to be directed, avoids responsibility, has little ambition, but desires job security.

Theory X assumptions are more appropriate when employees are unskilled or inexperienced, have little training, are new to the work setting, or refuse to accept responsibility. Also, Theory X assumptions are more appropriate when successful completion of the work is crucial to the work of others, when the time deadline for completing the work is inflexible, and when the work itself is essential to the objectives of the organization (Lambert, Wertheimer, Johnson, 1980b).

In contrast, Theory Y proposes that work is as natural as play or rest, and the average person does not inherently dislike work. This theory also proposes that external control and threat of punishment are unnecessary (Herrick, 1976). Managers can implement the Theory Y

concept by encouraging employee participation in the decision-making process (Donehew, 1979). Participatory management styles, such as McGregor's theory Y or Ouchi's Theory Z are associated with higher job satisfaction (Ouchi, 1982).

Hampton's expectancy theory states that people behave as they do because they perceive their behavior will lead to a desired reward. Therefore, the employee must perceive that the situation will yield what he or she wants. This perception will permit the person to do what is necessary to fulfill desires, while leaving a net profit for his efforts. Pharmacy managers can use this theory by making task performance a path toward satisfying pharmacists' needs (motivation) (Donehew, 1979).

Motivation theories have also been based on understanding the needs of each employee. For example, people have a need to achieve (ability utilization), a need to affiliate, and a need for power (Boyatzis, 1979; McClelland, 1979a, 1979b). Each employee has these needs in varying amounts. Therefore, the way to motivate an employee is to first understand what his or her needs are, then provide a job that will enable them to appropriately satisfy these needs.

Maslow theorized that human needs are grouped into a hierarchy of five needs: physiological, safety, social,

ego, and self fulfillment (Donehew, 1979; Clark, 1979). For most pharmacists the basic needs (i.e. physiological, safety) have been satisfied. To increase the satisfaction an employee gets from his or her job, pharmacy managers should provide opportunities for pharmacists to obtain self-esteem, self-actualization, achievement (ability utilization), and peer recognition (Dinel, 1976).

Hanson and Kabat (1974) provided a survey for measuring job satisfaction and suggested that surveys of employee job satisfaction should be conducted regularly. Managers can increase job satisfaction through job enrichment interventions (Pasmore, 1979). However, it is important to note that increasing job satisfaction alone may not necessarily result in increased productivity (Herrick, 1976).

Noel, Hammel, and Bootman (1982b) hypothesized that low job satisfaction in pharmacy would lead to declining commitment to the job and burnout on the part of young pharmacists. To reverse low job satisfaction in pharmacy, the authors saw a need for skilled administrators in pharmacy who can justify, implement, and evaluate new programs and services, as well as effectively motivate pharmacy personnel.

### Motivating Pharmacists and Pharmacy Technicians

To effectively motivate pharmacy personnel it is important to understand their interests and needs. What type of person chooses to become a pharmacist? Rezler, Mrtek and Manasse (1976) found that about two-thirds of both men and women who choose pharmacy as a career enjoy established routine, dislike new problems unless there are standard ways to solve them, are persistent in their work habits, and are impatient with complex details. In addition, they tend to be good at precise work and seldom make errors of fact. They also plan their work ahead and do not like to leave things unfinished. Rezler and Buckley (1978), in a study of personality types among female students in six different health professions, concluded that pharmacy students were "apt to have a strong preference for an orderly environment".

In a study of the expectations of women pharmacy students, Kirk and Henderson (1975) found that women consistently indicated the desire to combine practicing pharmacy with devoting time to family and home. In addition, the women in this study saw pharmacy practice as a challenging profession, with a high salary potential, that could be practiced either full-time or part-time.

Kirk, Johnson, and Ohvall (1974) found that women scored higher than men on a biological science scale, but

lower than men on the merchandising scale. Accordingly, women were also more likely than men to become hospital pharmacists and less likely to become community pharmacists. Kirk and Ohvall (1975) found that men pharmacists showed more interest in rising above the level of staff pharmacist than did women. The women pharmacy students came from families of higher socioeconomic levels.

An indirect measure of job satisfaction is whether pharmacists would become pharmacists if given the choice over again. Kirk (1976) surveyed pharmacy students 2 or 3 years after graduation and found only 35% would definitely go to pharmacy school if given the choice again. Toffey (1978) found only 32% of the 637 community and hospital pharmacists surveyed would choose pharmacy as a career if given the choice again.

The "opportunity to earn a high salary" was a significantly more influential factor in men than women in choosing pharmacy as a career (Kirk, Ohvall, 1975; Toffey, 1978). However, when women were asked the reason they would recommend pharmacy to other women, they mentioned economic security more frequently than any other reason (Kirk, Ohvall, 1973). When pharmacists ranked self-interest areas, they listed acceptable hours and wages as the second most important of the seven areas (Fuselier, Tanja, 1975). Baldwin et al., (1980) found pharmacists to

have higher economic interests and lower social interests than the population in general.

In a survey of 218 Illinois pharmacists, Stewart and Purohit (1980) found the most important job characteristic to be salary. Of the 20 intrinsic and extrinsic job characteristics given, the pharmacists also listed as important: sense of accomplishment, working conditions, job security, and benefits. It is interesting that of the five job characteristics pharmacists listed as most important, three were money-related (salary, job security, and benefits). Men were much more concerned with job security and benefits than were women. Women indicated that employer's policies and practices and relations with co-workers were important. Job factors not listed in the top five include autonomy, responsibility, use of training and abilities, and learning.

Many pharmacy job satisfaction studies list a lack of opportunity for advancement as a frequent complaint (Libby, Kirk, 1976; Johnson et al., 1977; Beno, Norwood, 1981; McGhan, Adamcik, 1981, 1982; Noel et al., 1982a; Carroll et al., 1982).

However, in a study by Stewart and Purohit (1980) pharmacists rated opportunity for advancement twelfth overall in importance. Younger pharmacists (under 30) were much less concerned about job security or benefits. In



contrast, younger pharmacists indicated concern about their relations with co-workers and using their training. However, this age group also rated salary as the most important job characteristic. Pharmacists aged 31-40 indicated little concern about the use of their training. In a similar study by Purohit and Lambert (1983), Illinois pharmacy students also rated salary as the most important job characteristic. However, the students also rated a sense of accomplishment, the use of training and abilities, and learning opportunities as important. California pharmacists, who have more clinical (PharmD) training than pharmacists in other areas of the country, also rated the use of knowledge and abilities high, along with interest/challenge in the work. The pharmacists in the California surveys placed less importance on salary (McGhan, Adamcik, 1981, 1982). This may be because they are paid well compared to pharmacists in other states.

A survey of post B.S. PharmD recipients showed most returned to school for the advanced degree in an attempt to gain greater patient involvement (O'Hara, Kirk, and Sperandio, 1978). Only 17.4% of the students listed low job satisfaction as the reason for returning to school. A study by Hardy (1982) provides additional information that pertains to pharmacists and job satisfaction. Hardy (1982) found that an internal locus of control

significantly correlated with increased job satisfaction for pharmacists. A person with an internal locus of control believes that outside reinforcement is dependent upon his own behavior, not as a result of luck, chance, or fate.

Less is known about characteristics of pharmacy technicians. Swartz (1980) emphasized the importance of job satisfaction for technicians, especially as their role in pharmacy expands. The development of pharmacy technician training programs leading to a two-year Associate in Science, and formal certification of technicians may lead to increased roles for technicians (Whitney, Gardner, Sitzler, 1975; Hoffman, 1982).

Coburn et al., (1980) presented a profile of 313 hospital pharmacy technicians working in North Carolina. Most (73.3%) of the technicians were women. About two-thirds were married, and the mean family income per year was between \$10,000 and \$14,000. The mean number of years of education was 13 to 15. The biggest complaints were low pay and lack of opportunity for promotion.

The most frequently performed job function for these technicians was taking medications from the shelf. Other common job functions were answering the pharmacy telephone, typing prescription labels, counting and pouring medications, and checking finished prescription labels.

About two-thirds of the technicians delivered medications to nursing units, reconstituted suspensions, prepackaged multidose packages, received written prescriptions, and performed housekeeping tasks.

Segal (1974a, 1974b) surveyed pharmacy technicians in Ontario, Canada and found the typical technician to be over 30, female, married, and educated to at least a high school level. The technicians in this study were hired to assist in the physical handling of goods (drugs) and to help with clerical tasks.

A study of the status of hospital pharmacy technicians in Michigan found, by far, the two most important job requirements for technicians were being a high school graduate and having typing ability (Hoffman, 1982). Other less common job requirements included having telephone etiquette, being able to pass a mathematics quiz, and having hospital pharmacy experience. Wages for a regular technician ranged from \$3.58 to \$10.00 per hour, with the average starting hourly wage at \$5.05.

Upon passing a test, pharmacy technicians in Michigan can be approved as a Pharmacy Certified Technician by the Michigan Pharmacists' Association. Other states are not as clear about the legal status of pharmacy technicians and what tasks they can legally perform. For example, Pevonka and Lemberger (1981) noted that the laws of three

states (Wyoming, New Mexico, and Arkansas) specifically do not allow pharmacy technicians. Wide variations in state laws lead to ambiguity concerning the role of pharmacy technicians, and possibly to lower job satisfaction.

#### Job Satisfaction Studies in Pharmacy

In a study of Minnesota hospital pharmacists, Williamson and Kabat (1972) concluded that these pharmacists were dissatisfied with both extrinsic and intrinsic job satisfiers. Extrinsic job satisfiers are incentives provided by employers. The only extrinsic satisfiers measured were working conditions and economic remuneration. Intrinsic job satisfiers are derived from rewards to an individual's self-concept. The only intrinsic job satisfier measured was achievement potential.

Of the 221 pharmacists surveyed, only 128 (58%) responded. The questionnaire was a modification of a job satisfaction questionnaire developed by the Management Institute of the University of Wisconsin Extension Division. Fifty of the 128 responding were chief pharmacists. The hospital pharmacists were asked to compare their salary level, with respect to 1) their qualifications, 2) other hospital employees, and 3) nonhospital pharmacists. Over half of the chief pharmacists rated their salary levels as excellent or good in all three comparisons. In contrast, over half of the

staff pharmacists rated their salary levels as either fair or poor. Over three-fourths of the staff pharmacists rated their security as good to excellent, compared to only 42% of the chief pharmacists.

In general, the pharmacists rated working conditions as good to excellent. However, almost half noted a general lack of sensitivity to pharmacy problems by the hospital's administration. One source of frustration was their desire to work in a more progressive pharmacy environment.

The potential for personal achievement was the third major area of job satisfaction studied. This included the pharmacist's perception of the status of his position, the self satisfaction he derived from his work, the degree he was able to use his education, and recognition he received for his work. A great majority (90%) of the chief pharmacists indicated a significant amount of satisfaction from their work, compared with only 69% of the staff pharmacists.

However, the surveyed pharmacists felt they were performing below their capabilities. In addition, they felt that they were not needed members of the health care team. Complaints such as these led the authors to conclude that hospital pharmacists believed they had been ineffectual in relating their abilities, capabilities and importance to other health professions and society.

This initial job satisfaction study of hospital pharmacists had a low response rate, surveyed hospital pharmacists in one state only, and only measured one intrinsic and two extrinsic job satisfiers.

Libby and Kirk (1976) surveyed the job satisfaction of 54 chain pharmacists in Wisconsin. Only thirty one (57%) pharmacists responded. The pharmacists answered questions concerning their satisfaction with their work, pay, promotion opportunities, supervision, and co-workers. The instrument used was the Job Descriptive Index (Smith, Kendall, Hulin, 1969).

The responding chain pharmacists said that they were highly satisfied with their co-workers, but only moderately satisfied with their work and pay. In contrast, the pharmacists said that they were highly dissatisfied with promotion opportunities. They were generally undecided about management and supervision. Perhaps because of the small number of pharmacists responding, Libby and Kirk (1976) did not conclude if the 31 chain pharmacists surveyed were satisfied overall with their jobs.

A study by Johnson et al., (1977) measured general job satisfaction of hospital pharmacists at "something less than satisfied." In addition, when compared with other employees, hospital pharmacists were more dissatisfied with their general life situation.

In this survey, facet free and facet specific measures of job satisfaction were made (Quinn, Shepard, 1974; Weiss, Dawis, England, 1967). The facet free questions reflect the overall satisfaction with the job, and do not refer to specific facets of the job. Specific facets measured included ability usage, advancement, and work challenge. Of the 195 Minnesota pharmacists in the survey, 132 (68%) responded.

In the facet free measure of job satisfaction, the hospital pharmacists reported less job satisfaction than a random sample of professional managerial and nonprofessional workers in a 1969 and 1973 general survey of working conditions (Quinn, Shepard, 1974). Responses on identical questions indicate less satisfaction among the hospital pharmacists than these nonpharmacists. For example, only 39% of the pharmacists felt their jobs measured up to what they had hoped for when they took them, compared to 63% and 57% in the 1969 and 1973 Michigan studies. The dissatisfaction of pharmacists did not appear to be confined to their jobs. However, pharmacists showed a greater commitment to the work ethic than nonpharmacists. Pharmacists were more willing to work, even if given enough money to live comfortably for the rest of their lives, and were less likely to take sick leave.

On the measures of facet specific satisfaction, none of the 13 dimensions averaged three or higher on a five point Likert scale. A rating of three indicated satisfaction on a scale from one (not at all satisfied) to five (extremely satisfied). Hospital pharmacists were least satisfied with their opportunity for advancement (mean score = 2.39). Other aspects of dissatisfaction included staffing practices (mean score = 2.51) and company policies and practices (mean score = 2.53).

The authors painted a bleak picture for the future of pharmacy in their discussion of low job satisfaction within a profession. They noted that low job satisfaction in an open labor market causes members of that profession to seek employment elsewhere and results in attrition. In a closed labor market, members become passive and unmotivated, leading to obsolescence. Low job satisfaction in hospital pharmacy costs individuals in terms of pride of work, quality of life and potential health hazards. Johnson et al (1977) predicted that low job satisfaction would ultimately have a harmful effect on hospital pharmacies, and as a result, the quality of health care in general would suffer.

Donehew and Hammerness (1978) surveyed only 44 pharmacists in 14 third-party-operated ambulatory pharmacies in Denver, Colorado. The survey distinguished



between job factors that cause job dissatisfaction (hygiene factors) and factors that cause job satisfaction (job motivators).

All pharmacists, regardless of age, position level, and years in position, had similar overall feelings towards their job. The hygiene factors gave job satisfaction, more so for supervisors than for staff pharmacists. However, the pharmacists scored low on the job motivator measures. The authors concluded that the 44 pharmacists in this study, while not dissatisfied with their jobs, were on the other hand, not highly satisfied.

Norwood and Beno (1978) surveyed pharmacists and found them to be satisfied with their job, but not their pay. However, the authors did not report on the number of pharmacists surveyed, the response rate, or the population surveyed.

Curtiss et al., (1978) measured job satisfaction in a study of four major practice settings: hospital/clinic, community-independent, community-chain, and apothecary. Both facet free and facet specific questions were asked (Quinn, Shepard, 1974; Weiss et al., 1967). The survey was also designed to measure job attitudes and psychological strain (Spielberger, Gorsuch, Lushene, 1970; Zuckerman, Lubin, 1964). Pharmacy graduates from eight pharmacy

schools across the country graduating in 1971, 1973, and 1975 were surveyed. The response rate was 70% (N = 741).

The facet free measures of job satisfaction indicated that pharmacists were not as satisfied as the general population with their jobs. Hospital pharmacists were the most disappointed with their jobs, while apothecary pharmacists had the greatest resemblance to the general population. Hammel, Curtiss, and Heinen (1979) also found the highest job satisfaction among apothecary pharmacists. However, in spite of their low job satisfaction, hospital pharmacists preferred their current jobs over their community-independent and community-chain pharmacists counterparts. In addition, very few hospital pharmacists preferred to retire or not work at all. Zellmer (1977) suggested that the bureaucracy environment in a hospital may frustrate pharmacists and produce job dissatisfaction.

The facet specific measures also indicated that pharmacists were less than satisfied with their jobs. In addition, hospital pharmacists were less satisfied than chain pharmacists in context factors. Context factors included comparative compensation, staffing, and company policies and practices and are believed to be sources of dissatisfaction. In contrast, content factors such as work challenge, ability utilization, feedback, and opportunity

for advancement are believed to be motivators or satisfiers.

The pharmacists who rated their practice high in person-orientation and professional-orientation reported uniformly high facet free and facet specific job satisfaction scores. In addition, these pharmacists also reported lower levels of anxiety and depression.

In another reported study, Curtiss, Hammel, Heinen, and Johnson (1978) hypothesized that a poor "fit" between education and practice would lead to stress and strain. Stress was measured as role conflict and role ambiguity. Strain was measured by questions concerning anxiety, depression, and job and life dissatisfaction (Spielberger et al., 1970; Beck, Kovacs, Weisman, 1975). Both facet free and facet specific measures of job satisfaction were included in the survey (Quinn, Shepard, 1974; Weiss et al., 1967). The colleges of pharmacy in this country were classified according to their professional orientation and patient orientation in education. The survey included 1,115 recent graduates of the eight colleges of pharmacy selected for their high or low professional orientation and patient orientation. The response rate was 70 percent.

The results of this study indicated that the "fit" between education and practice did not prove to be a significant factor in the expression of stress and strain.

Educational emphasis on the dimensions of professional orientation and patient orientation were found to have very little or no influence on perceived role of stress and psychological strain. In addition, this study showed that pharmacists were relatively satisfied with their jobs and life. Job satisfaction and life happiness were higher among pharmacists in highly patient oriented and highly professional oriented environments. Later studies showed higher job satisfaction among pharmacists practicing in clinical settings (Rauch, 1981; Quandt et al., 1982; Noel et al., 1982a).

In a related study, Hammel et al., (1979) surveyed pharmacists to evaluate job and life satisfaction, role conflict, and role ambiguity among young pharmacy practitioners. Both facet free and facet specific measures were used (Quinn, Shepard, 1974; Weiss et al., 1967). A third instrument measured the degree of role conflict and role ambiguity a pharmacist experienced (House, Rizzo, 1972). Surveys were mailed to 1060 pharmacists from 8 pharmacy schools across the country and 741 (70%) responded.

The response to the questionnaire showed that satisfaction among pharmacists was not very high. In addition, 54 percent experienced role conflict, and 95% were confronted with role ambiguity. Role conflict is the

simultaneous occurrence of two or more sets of pressures such that compliance with one makes compliance with the other more difficult. Role ambiguity occurs when there is a lack of clarity about role expectations (Curtiss, 1978).

The authors typed colleges of pharmacy to determine if the type of pharmacy school attended had an effect on the job satisfaction experienced by the graduates. The degree of job satisfaction with regards to staffing and feedback increased from low professional-oriented schools to high professional-oriented schools. However, when compensation was viewed, individuals from low professional-oriented schools were more satisfied with their compensation.

McGhan (1979) surveyed 2,630 California pharmacists using the same scale as other surveys and noted that they appeared to be "very satisfied with their jobs when compared to pharmacists surveyed in other parts of the country". The survey measured both facet free and facet specific measures of job satisfaction. In addition to the job satisfaction questions, the seven-page survey also gave extensive demographic and economic profiles of the respondents.

The facet specific questions measured general job satisfaction, the chance to use abilities, supervision (human relations), compensation (comparisons to others),

and company policies and practices. For all five facet specific measures, the California pharmacists were more satisfied than in any of the previous pharmacy surveys.

The demographics of California pharmacists were unique. Of the California pharmacists responding, over a third held a PharmD degree. Over half the patients obtaining prescriptions from California pharmacists had their drug profile checked. In addition, California pharmacists could legally monitor patients' blood pressures. A few California pharmacists were involved in prescribing legend drugs (Stimmel et al., 1982; Zellmer, 1982).

The increased job satisfaction of California pharmacists may have been due to their being better able to use their abilities in their practice (Robers, 1983). However, only 23.37% of the deliverable surveys were usable, and perhaps only the pharmacists who were satisfied with their jobs took the time to properly fill out the seven-page survey. Seven percent of the responding pharmacists worked only part-time (less than 24 hours per week).

In a second study of 2,680 California pharmacists, McGhan and Schoentgen (1980) received a slightly better response rate of 26.23% (703 respondents). Once again, the survey provided extensive economic and demographic data in

addition to the facet free and facet specific job satisfaction data. Job satisfaction was similar (only slightly lower) to the previous California study (McGhan, 1979).

In both California surveys, over a third of the responding pharmacists were clinically trained in PharmD programs (McGhan, 1979; McGhan, Schoentgen, 1980). However, of all the facet specific measures, the responding hospital pharmacists were least satisfied with the supervision (i.e. management) aspect of hospital pharmacy.

Curtiss (1980) surveyed pharmacists across the country and found women pharmacists do not differ significantly from their male counterparts in their level of job satisfaction. Questions centered on role conflict and role ambiguity, anxiety, depression, and job and life satisfactions (Caplan, Jones, 1975; Spielberger et al., 1970; Beck et al., 1975; Quinn, Shepard, 1974; Weiss et al., 1967). Of the 1115 pharmacists surveyed, 741 (70%) responded. Both facet free and facet specific measures were made.

Women pharmacists were more satisfied than men pharmacists with their choice of pharmacy as a career, and the amount of compensation. In addition, women also experienced slightly more role ambiguity than men. However, role ambiguity was not a stressful aspect of

practice for young pharmacists of either sex. Women did not differ significantly from men in their perception of job stress, life happiness, anxiety, or depression levels.

Shoaf and Gagnon (1980) found that women pharmacists were significantly less satisfied with their work than their men counterparts. However, when age was held constant, there were no significant differences in job satisfaction between men and women. The authors found several differences between the men and women pharmacists they accounted for by the recent increase in women graduates in pharmacy. For example, a smaller percent of women were in management positions. The instrument used was the Job Descriptive Index (Smith et al., 1969).

Coburn et al., (1980) studied job satisfaction among hospital pharmacy technicians in North Carolina and concluded that satisfaction levels were generally not very high. A hospital pharmacy technician was described as any person working in a hospital pharmacy who was not a registered pharmacist or intern, but who performed functions as listed by the Task Force on the Practitioner's and Subprofessional's Roles in Pharmacy.

The authors measured five different facets of the job situation: work, pay, promotion, supervision, and co-workers. Attitudes were measured with 24 item Likert scales, and responses were assigned values of one (strongly



disagree) through five (strongly agree). The instrument used was the Job Description Index (Smith et al., 1969). Both directors of pharmacy and technicians were surveyed, to measure differences in perceptions. The response rate was 70.3% for technicians and 91.6% for directors.

Technicians were least satisfied with their pay and promotion. Sixty seven percent agreed they could "barely live on income" and received "less pay than I deserve". Over half described their jobs as "dead end". On the other hand, technicians were most pleased with, and had high praise for their supervisors and co-workers. As the size of the hospital increased, the level of job satisfaction for the technicians decreased. Predictably, technicians who frequently worked weekends and night shifts were less happy with their jobs.

Even though this study suggests lower job satisfaction from low pay and promotion opportunities, Coburn et al., (1980) suggested that managers look closely at nonmonetary ways to increase job satisfaction for technicians. Choich and Hepler (1974) showed that pharmacists demonstrated a higher preference for collective bargaining when dissatisfied with pay and the work itself. Increased job satisfaction through nonmonetary means could temper movements toward collective organization of pharmacy technicians.

Purohit and Stewart (1980a, 1980b) randomly surveyed 510 pharmacists in Illinois. Seventy eight of the surveys were undeliverable. After two follow-up mailings, only 42% of the original pharmacists surveyed (218) returned usable responses. The two part survey measured both facet free and facet specific job satisfaction (Brayfield, Rothe, 1951).

The facet free measures showed job satisfaction to be uniform between certain groups of pharmacists. Accordingly, variables such as the sex of the pharmacist, length of time on the present job, number of years in practice, age of the pharmacist, and supervisory status were not associated with variations in job satisfaction. In contrast, the two factors that differentiated facet free satisfaction were ownership of the pharmacy by the pharmacist, and the pharmacist's practice environment. Both hospital and community pharmacists expressed an overall satisfaction with their jobs. However, pharmacists working in discount pharmacies were more undecided about their job satisfaction. All three groups were less satisfied with the profession of pharmacy than with their individual jobs.

The facet specific data suggested that the satisfaction level of younger pharmacists was lower than that of older pharmacists. Younger pharmacists were less

satisfied with their relationship with physicians and with the amount of recognition received from both physicians and patients. In addition, they appeared to be more frustrated with the lack of opportunity to use their education. Pharmacists in the discount pharmacy environment were least satisfied with the recognition and feedback from physicians, and with opportunities for patient interaction. Owners and supervisors were more satisfied than staff pharmacists.

The Maryland Salary and Employment Conditions Survey showed that 14.3% of the responding pharmacists indicated they were leaving their present position due to job dissatisfaction (Perez et al., 1981). The survey also revealed that 66% percent of the pharmacists who were dissatisfied with their jobs were in the 21 to 30 age group. The Maryland Pharmaceutical Association mailed the survey to all member pharmacists. But, only 162 (18.9%) pharmacists responded.

Beno and Norwood (1981) surveyed the job satisfaction of all employee pharmacists in Iowa practicing in hospital, clinic, community or chain pharmacies. The survey measured five dimensions of job satisfaction: work itself, co-workers, supervision, pay, and opportunities for promotion. The authors concluded that overall, pharmacists

appeared to be satisfied with their jobs. The survey instrument used was the Job Description Index.

However, only 191 (27%) of the pharmacists surveyed returned a properly completed instrument. The authors found staff pharmacists and hospital pharmacists to have low job satisfaction. No relationship between age, years in practice, tenure in present job, size of community, or sex and job satisfaction was found.

Two additional surveys asked California pharmacists facet free questions concerning job satisfaction (McGhan, Adamcik, 1981, 1982). Both of the studies surveyed over 2,700 pharmacists, however the response rates were 30% (1981) and 51% (1982). In both studies, the pharmacists reported their jobs to be interesting, and that they were motivated in their present jobs. Pharmacists practicing in California's highly clinical environment appear to have higher job satisfaction than pharmacists in other areas of the country.

Rauch (1981) assessed job satisfaction of 160 pharmacists working at 35 US Army Medical Treatment Facilities. After evaluating the job content of all 160 pharmacists, 25 were classified in a "patient care" (PC) group, and 44 were classified in a "non-patient care" (NPC) group. Specific PC tasks included: 1) determining adverse reactions to drug therapy, 2) determining the efficacy of

drug therapy, and 3) serving as a member of the therapeutic drug team. Pharmacists not performing all three PC activities were assigned to the "non-patient care group.

Only the 69 pharmacists classified in either the PC or NPC groups were evaluated. The survey measured extrinsic and intrinsic job satisfaction. Both groups expressed similar levels of satisfaction for extrinsic characteristics of job satisfaction. However, PC pharmacists expressed greater intrinsic job satisfaction. The author concluded that PC pharmacists had more intrinsically meaningful (high stimulation) jobs when compared to NPC pharmacists, and therefore greater job satisfaction. Because only the pharmacists classified as PC and NPC were studied, it was not possible to determine if Army pharmacists in general were satisfied with their jobs.

Quandt et al (1982) measured job satisfaction levels of pharmacists classified as either clinical, inpatient, outpatient, or generalists. The survey included scales that measured four components of job dimensions: psychological states, individual differences, and personal and work outcomes. The questionnaire (Cammann, Fichman, Jenkins, 1980) was mailed to 507 nonadministrative hospital pharmacists in southeastern Michigan. The response rate was 56%, representing 283 completed forms.

The clinical group had the highest scores for 13 of the 14 subscales that were significantly different across pharmacist groups. The clinical pharmacists perceived that their job allowed the greatest freedom and control over their work pace. In addition, they saw their work as having the most challenge and meaning. In contrast, inpatient pharmacists ranked lowest in all but one of the significantly different subscales.

Because pharmacists in the clinical group consistently scored higher than the other groups on scales measuring job satisfaction, the authors concluded that hospital pharmacy managers should adapt the positive features of clinical practice to other areas of pharmacy.

Noel et al (1982a) measured differences in job and life satisfaction between hospital pharmacists and support personnel working in the same environment. This study used facet free and facet specific questions to measure particular aspects of work satisfaction, and satisfaction in a broad sense (Quinn, Shepard, 1974; Weiss et al., 1967).

On the facet free indicators, the pharmacists and technicians were compared with a 1977 random survey of professional, managerial, and nonprofessional workers. In addition, the pharmacists were compared with the technicians on the same facet specific questions.

Pharmacists and pharmacy technicians in hospitals in the Tucson and Phoenix, Arizona areas were surveyed. Responses came from 202 (74.8%) of the pharmacists and 131 (62.5%) of the technicians.

Pharmacists were far more satisfied with their choice of job than were support personnel. For example, pharmacists indicated greater likelihood to take their same job again than did support personnel. In addition, support personnel reported a significantly greater inclination than pharmacists to leave their present job within the next year. Both pharmacists and technicians showed a high commitment to the work ethic.

Support personnel reported lower mean scores than pharmacists on all 13 facet specific measures of job satisfaction. The difference was significant for 10 facets. The findings among support personnel regarding the influence of the position held, sex, and age had no significant impact on satisfaction.

Among the pharmacists surveyed, clinical and research pharmacists reported the highest mean scores. Female pharmacists had lower mean scores than male pharmacists on 11 of the 13 facets, with four of the differences being significant. The 23 to 28 age group reported the lowest mean scores on all 13 facets. In contrast, the 40 to 50 age range reported the highest

satisfaction. Increased job satisfaction with age has been found in several other professions (Saleh, Otis, 1964).

Carroll et al (1982) studied job satisfaction among North Carolina chain store pharmacists. Of the 2,688 pharmacists surveyed, only 698 responded. Of the responding pharmacists, only 302 provided usable data. The instrument used to measure job satisfaction was the Job Description Index (Smith et al., 1969). Only data from pharmacists working 40 or more hours per week were analyzed.

Of the five facets in the Job Description Index, the chain store pharmacists were least satisfied with their opportunity for promotion. In contrast, they were happiest about their supervision and co-workers. The results of the study suggest chain store pharmacists with higher job satisfaction tend to have more flexible schedules, and spend more of their time performing management tasks while spending less time dispensing prescriptions. The authors concluded that the chain store pharmacists were dissatisfied with their jobs.

#### Chapter Summary

Without effective motivators, employees cannot be satisfied with their jobs. Job satisfaction studies in pharmacy consistently indicated that pharmacists who were able to use their abilities were satisfied with their jobs.



This has been suggested in studies of clinical environments across the country, and is especially true in California, where pharmacists are stepping into challenging practitioner roles that include monitoring blood pressures and prescribing legend drugs (Rauch, 1981; Quandt et al., 1982; Noel et al., 1982a; McGhan, 1979; McGhan, Schoentgen, 1980; McGhan, Adamcik, 1981, 1982; Stimmel et al., 1982; Zellmer, 1982).

Therefore, there is a need in pharmacy for skilled administrators who can effectively motivate pharmacy personnel, as well as justify, implement, and evaluate new programs and services (Noel et al., 1982b).

## CHAPTER 3.

### METHODOLOGY

A survey of Air Force pharmacists and pharmacy technicians measured their job satisfaction. The survey first collected selected demographic data, then measured 12 facets of job satisfaction as the independent variables. The dependent variables measured were overall job satisfaction with pharmacy, overall job satisfaction with the Air Force, and role ambiguity.

#### Hypotheses

Pharmacists and technicians in pharmacies staffed predominantly with technicians should perceive low levels of role ambiguity in their jobs, and should be satisfied with their jobs. Accordingly, the ratings of job satisfaction in traditional (low technician to pharmacist ratio) pharmacies are not the same as in pharmacies with high technician to pharmacist ratios.

Hypothesis 1: Pharmacists working in Air Force pharmacies perceive low levels of role ambiguity in their jobs.

Hypothesis 2: Pharmacy technicians working in Air Force pharmacies perceive low levels of role ambiguity in their jobs.

Pharmacists and technicians in traditional (low technician to pharmacist ratio) pharmacies are not satisfied with their jobs in general (Williamson, Kabat, 1972; Curtiss, Hammel, Johnson, 1978; Coburn et al., 1980; Noel et al., 1982a; Carroll et al., 1982). Pharmacists and technicians in the predominantly technician environment should be satisfied with their jobs.

In addition, Rauch (1981), Quandt et al, (1982), and Noel et al., (1982a) found pharmacists in nonclinical roles less satisfied than pharmacists in clinical roles. In contrast, pharmacists in a predominantly technician environment should be satisfied with clinical or management roles.

Hypothesis 3: Pharmacists working in Air Force pharmacies are satisfied with their jobs.

Hypothesis 4: Air Force Pharmacists with different types of jobs (i.e. (1) clinical positions, (2) management positions, or (3) positions involving management and clinical practice) are all satisfied with their jobs.

The causes of low job satisfaction among technicians in traditional (low technician to pharmacist ratio) pharmacies are similar to the causes of low job

satisfaction among pharmacists. Like pharmacists, technicians have low job satisfaction in general (Coburn et al., 1980; Noel et al. 1982a).

Hypothesis 5: Air Force pharmacy technicians are satisfied with their jobs.

According to Herzberg's two-factor theory (Grace, 1980), ability utilization, advancement, and work challenge are job motivators. Pharmacists and technicians complain of a lack of opportunity for advancement (Libby, Kirk, 1976; Johnson et al., 1977; Beno, Norwood, 1981; McGhan, Adamcik, 1981; McGhan, Adamcik, 1982; Noel et al., 1982a; Carroll et al., 1982). However, Air Force pharmacists and technicians should be satisfied with their job motivators.

Hypothesis 6: Pharmacists in Air Force pharmacies are satisfied with the traditional job motivators.

Hypothesis 7: Air Force pharmacy technicians are satisfied with the traditional job motivators.

Air Force pharmacists and technicians should also be satisfied with the goals, plans, policies, practices, and staffing of their practice environment.

Hypothesis 8: Air Force pharmacists are satisfied with the goals, plans, policies, practices, and staffing of their practice environment.

Hypothesis 9: Air Force pharmacy technicians are also satisfied with the goals, plans, policies, practices, and staffing of their practice environment.

Pharmacists and technicians consider their low salary an important source of job dissatisfaction (Williamson, Kabat, 1976; Norwood, Beno, 1978; Coburn et al., 1980; Noel et al., 1982a).

Hypothesis 10: Air Force pharmacists are satisfied with their pay.

Hypothesis 11: Pharmacy technicians in the Air Force are satisfied with their pay.

Competent and considerate supervision is a hygiene factor that, if missing could lead to job dissatisfaction.

Hypothesis 12: Air Force pharmacists are satisfied with their supervision.

Hypothesis 13: Pharmacy technicians in the Air Force are satisfied with their supervision.

#### The Instrument

The demographic data collected included continuous data, categorical data, and nominal data. The continuous data collected (for both pharmacists and technicians) were age, time in service, time in pharmacy, and time on station. The categorical data collected were each respondent's rank and education level. The nominal data collected from pharmacists were their current working

environment (i.e, management or clinical), and their current position (i.e, chief pharmacist or staff pharmacist). The current working environment (i.e, inpatient verses outpatient), and technical functions performed (i.e, compounding hyperalimentations) were the categorical data collected from technicians.

Authors of pharmacy job satisfaction studies have used the publications in Appendix A to develop instruments that measure job satisfaction. The instrument for this study measured thirteen facet specific measures of job satisfaction adopted from the Minnesota Job Satisfaction Questionnaire (Weiss et al., 1967). The 13 facet specific measures are listed below.

- (1) Ability utilization
- (2) Advancement
- (3) Work challenge
- (4) Goals and plans
- (5) Policies and practices
- (6) Staffing
- (7) Compensation / amount
- (8) Compensation / comparison
- (9) Compensation / practices
- (10) Supervision / feedback
- (11) Supervision / competence

(12) Supervision / human relations

(13) General satisfaction (pertaining to pharmacy)

In addition to the 13 facet specific questions from the Minnesota Job Satisfaction Questionnaire, additional questions were developed to determine if job satisfaction or dissatisfaction were related to working in the Air Force environment (that is, not due to the pharmacy job). Also, satisfaction with the perceived level of role ambiguity in the pharmacy environment was measured. Questions concerning role ambiguity satisfaction were developed from a questionnaire by Rizzo, House, and Lirtzman (1970). The two additional facets measured are as follows.

(14) General satisfaction (pertaining to the Air Force)

(15) Satisfaction with level of role ambiguity

Two similar questions were asked to measure each facet. Responses were on a five point Likert scale. A response of one was labeled dissatisfied, three was labeled neutral, and five was labeled satisfied. Points labeled two and four were not labeled (Appendix C).

#### Reliability

The reliability of the instrument was tested by the Guttman splithalf test. The reliability was tested for both pharmacists and technicians.

The retest method to test instrument reliability is subject to maturation and history effects and is time

consuming. In contrast, the alternative form method solves some of the problems of the retest method, such as subjects remembering answers. However, problems of instrumentation may occur because of a change in the measurement technique. The internal consistency method (Cronbach's alpha) is calculated using the variances, and may be inaccurate when the sample is small, such as in a pilot study. The Kuder-Richardson formula can be used only when items are nominal and scored dichotomously. Because a high degree of internal consistency between facets was not expected, the split-halves method was used to test the reliability of the instrument.

#### Validity

The content validity comes largely from 13 facets of job satisfaction published in the Manual for the Minnesota Satisfaction Questionnaire and have been used in numerous other job satisfaction studies (Johnson et al., 1977; Curtiss, Hammel, Johnson, 1978; Curtiss, Hammel, Heinen, Johnson, 1978; Hammel et al., 1979; Curtiss, 1980; Noel et al., 1982a). Since the study dealt with a military environment, another facet was added to measure overall satisfaction with the Air Force. A final facet measured role ambiguity (Rizzo et al., 1970).



The pilot study was limited to the 2 pharmacists and 9 technicians at the Davis-Monthan Air Force Base, Tucson, Arizona.

### Participants

Most state pharmacy laws allow either a one to one, or a one to two pharmacist to technician ratio (Pevonka, Lemberger, 1981). Two states (Washington and Minnesota) allow three technicians for each pharmacist in hospitals. The participants in this study worked in pharmacies staffed predominantly with technicians. Because there is a high ratio of technicians to pharmacists in Air Force pharmacies, Air Force pharmacists and pharmacy technicians stationed within the continental United States were surveyed.

Because this research studied pharmacies staffed predominantly with technicians, it did not include Air Force pharmacies with less than a one to three pharmacist to technician ratio. The population described above comprised seventy-two Air Force pharmacies, with 122 pharmacists and 613 technicians. Because the population was small, the entire population was surveyed.

### Data Collection

The chief pharmacist from each pharmacy in the survey was interviewed by telephone to ascertain the number

of technicians and pharmacists currently stationed at each pharmacy and to request cooperation. In instances where the chief pharmacist could not be reached (i.e. the chief pharmacist was on leave), the information was obtained from a subordinate. Subordinates were contacted at 13 of the 72 medical facilities.

The chief pharmacists were mailed the survey instruments (Appendix D) along with a stamped, self-addressed envelope for each pharmacist and technician in his/her pharmacy. The initial surveys were mailed between May 23, 1983 and June 3, 1983. The mailing list was obtained from the roster of Air Force pharmacists.

To increase the response rate, a follow-up questionnaire was mailed on June 20, 1983. Follow-up questionnaires were sent to each pharmacy that had an initial response rate of less than 75 percent. Data collection was completed on August 1, 1983.

Because of anticipated survey distribution problems, the return rate was expected to be lower at larger facilities (i.e, medical centers). Therefore, the overall return rates from the four different types of medical facilities (medical centers, regional hospitals, hospitals and clinics) will be compared. In addition, overall job satisfaction for pharmacists and technicians from the

different types of facilities were analyzed in a non return bias analysis.

### Data Analysis

#### Computer Analysis of the Data

The Statistical Package for the Social Sciences (Nie et al., 1970) was used to analyze the data. Missing data was coded as such (i.e, 9, 99 or 999) and was excluded from further statistical analysis.

#### Facet-Specific Measures of Job Satisfaction

Several statistical measures were performed on each facet for both pharmacists and technicians. The statistical measures performed were the mean, median, mode, and standard deviation. Student's t tests ( $p = .05$ ) were used when comparing the responses between pharmacists and technicians. The data analysis included a comparison of pharmacist versus technician responses for all 15 job satisfaction facets.

A paired samples t test was employed to further analyze differences in pharmacy job satisfaction (facet 13) between pharmacists and technicians at the four different types of medical facilities.

#### Selected Demographic Variables and Job Satisfaction

Selected demographic variables were studied to determine their effect on overall pharmacy job satisfaction

(facet 13). Management position, type of facility (medical center vs clinic), practice setting (i.e, inpatient vs outpatient), and selected time related variables were studied to determine their effect on Air Force pharmacists' overall pharmacy job satisfaction. For technicians, the type of facility, practice setting, selected time related variables, and technical functions routinely assigned were studied to determine their effect on Air Force technicians' overall pharmacy job satisfaction.

#### Job Satisfaction Correlations

Also included in the data analysis were correlations of job satisfaction in pharmacy (facet 13) with the other job satisfaction facets and role ambiguity.

#### An Analysis of Each Hypothesis

A hypothesis was accepted if the facet(s) involved were significantly higher than 3.0 for the population indicated in the hypothesis (i.e, for pharmacists). T-tests determined if the facet(s) were significantly higher than 3.0 ( $p = .05$ ). For hypotheses one and two, facet 15 was tested for both pharmacists and technicians (role ambiguity). Hypotheses three, four and five involved only facet 13 (pharmacy job satisfaction).

The remaining hypotheses used an average of three related facets. Hypotheses six and seven reflected the

three facets measuring traditional job motivators (facets 1, 2 and 3) for pharmacists and technicians. Hypotheses eight and nine were averages of the facets pertaining to goals, plans, policies, practices, and staffing (facets 4, 5 and 6). Hypotheses 10 and 11 resulted from the three facets measuring compensation (facets 7, 8 and 9). Facets 10, 11 and 12 reflected satisfaction with supervision, and were averaged for hypotheses 12 and 13.

#### Factor Analysis and Multiple Regression Equations

A factor analysis of the 12 independent variable job satisfaction facets for both pharmacists and for technicians determined how the facets loaded on factors. These factors were entered into multiple regression equations to assist in explaining the variance in reported pharmacy job satisfaction (facet 13). Separate regression equations were calculated for pharmacists and technicians.

#### Assumptions

Assumptions were made in this study. The first assumption was that job satisfaction and role ambiguity can be measured as discrete entities. It was also assumed that data obtained from the Likert scale can be analyzed at the interval level.

### Limitations

The results of this survey apply to Air Force pharmacists and pharmacy technicians only.

Non-response bias is a more serious concern about response selectivity in mail surveys than in telephone or face-to-face surveys. The recipients of mail questionnaires have an opportunity to examine the survey before deciding to respond (Dillman, 1978).

The reliability and validity of the instrument limit the measurement of job satisfaction and role ambiguity.

### Operational Definition of Terms

Job dissatisfaction. The unfavorable view of the worker toward the work role he/she presently occupies.

Dissatisfied with a job - Significantly lower than 3.0 ( $p = .05$ ) using a five point Likert scale (from 1 to 5) for the pharmacy job satisfaction facet (facet 13).

Dissatisfied with a facet of a job - An average significantly lower than 3.0 ( $p = .05$ ) a five point Likert scale for the facet(s) measured.

Job satisfaction. The favorable view of the worker toward the work role he/she presently occupies (Ivancevich, Donnelly, 1968)

Satisfied with a job - Significantly higher than 3.0 ( $p = .05$ ) using a five point Likert scale (from 1 to 5) for the pharmacy job satisfaction facet (facet 13).

Satisfied with an aspect of a job - An average significantly higher than 3.0 ( $p = .05$ ) on a five point Likert scale for the facet(s) measured.

Pharmacies staffed predominantly with technicians.

Pharmacies with at least three technicians on staff for each pharmacist. Most Air Force pharmacies are staffed predominantly with technicians, however most civilian pharmacies are not.

Role ambiguity. A lack of clarity about role expectations.

Significantly higher than 3.0 on a 5 point Likert scale (from 1 to 5) for the facet measuring role ambiguity (facet number 15) indicates satisfaction with the level of role ambiguity confronted in the job.

## CHAPTER 4

### FINDINGS

#### Analysis of Return Rate and Non Return Bias

Of the 122 surveys mailed to pharmacists, 100 (82%) were returned. Of the 613 surveys mailed to technicians, 362 (59%) were returned. All pharmacists responding returned usable surveys. Two technician surveys were unusable, and three arrived too late for inclusion.

Because many of the pharmacists and technicians in the sample never received a survey to fill out, only a return rate could be calculated, and not a response rate. The major reason for the non return of surveys was that the surveys were not distributed effectively by some chief pharmacists. Accordingly, over a quarter (26.7%) of the non responding technicians were from five facilities, where no technicians responded. In addition, other facilities had extremely poor participation rates. For example, one facility had only one of 11 technicians responding, accounting for another 4.0% of all non responding technicians.

Response rates for both pharmacists and technicians were higher in smaller facilities (tables 1 and 2). This again illustrates the problem experienced in distributing



the surveys. The larger the facility, the lower the distribution rate. Therefore, the relationship of the non returned surveys to the measure of pharmacy job satisfaction (facet 13) can be further examined by comparing the mean pharmacy job satisfaction score for pharmacists and technicians responding from the four different practice settings (Table 3).

Table 1. Practice setting of the responding Air Force pharmacists.

| Practice setting  | Number of pharmacists responding | Number of pharmacists surveyed | Percent responding |
|-------------------|----------------------------------|--------------------------------|--------------------|
| Clinic            | 8                                | 9                              | 88.9%              |
| Hospital          | 54                               | 63                             | 85.7%              |
| Regional hospital | 11                               | 13                             | 84.6%              |
| Medical center    | <u>27</u>                        | <u>37</u>                      | <u>73.0%</u>       |
| All pharmacists   | 100                              | 122                            | 82.0%              |

Table 2. Practice setting of the responding Air Force pharmacy technicians.

| Practice setting  | Number of technicians responding | Number of technicians surveyed | Percent responding |
|-------------------|----------------------------------|--------------------------------|--------------------|
| Clinic            | 30                               | 43                             | 69.8%              |
| Hospital          | 213                              | 322                            | 64.2%              |
| Regional hospital | 49                               | 75                             | 50.7%              |
| Medical center    | <u>65</u>                        | <u>163</u>                     | <u>39.9%</u>       |
| All technicians   | 357                              | 613                            | 58.2%              |

Table 3. Mean pharmacy job satisfaction scores (facet 13) for Air Force pharmacists and pharmacy technicians in different practice settings.

| Practice setting  | Number of facilities | Mean job satisfaction score for pharmacists | Mean job satisfaction score for technicians |
|-------------------|----------------------|---|---|
| Clinic            | 11                   | 4.38  | 3.90  |
| Hospital          | 49                   | 4.25  | 3.78  |
| Regional hospital | 6                    | 4.25  | 3.52  |
| Medical center    | 6                    | 3.87  | 3.75  |
| Overall           | 72                   | 4.16  | 3.75  |

Note: a paired samples t test is discussed on pg 83

1=Dissatisfied  
 3=Neutral  
 5=Satisfied

The data indicated that pharmacists practicing in medical centers could have been less satisfied with their jobs than the pharmacists in other settings. Therefore, if the pharmacists in medical centers had returned surveys at the same rate as the pharmacists in other settings, the pharmacy job satisfaction score may have been slightly lower. However, the pharmacy job satisfaction score (facet 13) for pharmacists in medical centers was still high (mean score = 3.87).

The technicians in medical centers had the lowest response rate among the technicians surveyed. However, the average pharmacy job satisfaction (facet 13) for technicians in medical centers was 3.75, the same average as for all technicians. Therefore, it is unlikely that a higher return rate from technicians at medical centers would have significantly changed the technicians' overall pharmacy job satisfaction score.

#### Reliability of the Instrument

The reliability (Guttman Splithalf) of the instrument was excellent. The reliability was .902 for pharmacists, and .943 for technicians.

#### Demographic Data for Pharmacists

Ninety-three men and seven women pharmacists responded. Their mean age was 36.9 years old (Table 3).

In addition, these pharmacists averaged 44 months (mean) working at their present facility. However, the 12 civilian pharmacists had a mean of almost 17 years on station. In contrast, the 88 military pharmacists had a mean of less than 2 years (23 months) at their present duty station.

The responding pharmacists averaged 12.8 years (mean) experience as a registered pharmacist. Almost one third (29) had prior enlisted experience with a mean of 4 years. The military pharmacy officers had a mean of over 9 years experience as a commissioned officer.

Fifty-three of the responding pharmacists (53%) had only a B.S. in pharmacy. Accordingly, 47 (47%) of the pharmacists had additional education or training. Twenty of the pharmacists (20%) had completed a residency. A profile of the education level the pharmacists had is given in table five.

Table 4. Ages of the responding Air Force pharmacists.  
(N = 100)

| Age range | Number of pharmacists | Percent of pharmacists |
|-----------|-----------------------|------------------------|
| 22-27     | 5                     | 5                      |
| 28-33     | 26                    | 26                     |
| 34-39     | 43                    | 43                     |
| 40-45     | 16                    | 16                     |
| 46-51     | 2                     | 2                      |
| Over 51   | 6                     | 6                      |
| Unknown   | 2                     | 2                      |

Table 5. The education levels of the responding Air Force pharmacists.

| Degree                | Number with the degree only | Number with the degree plus residency | Number with the degree (total) |
|-----------------------|-----------------------------|---------------------------------------|--------------------------------|
| B.S.                  | 53                          | 4                                     | 57                             |
| B.S./Nonpharmacy B.S. | 1                           | 0                                     | 1                              |
| B.S/M.S.              | 17                          | 12                                    | 29                             |
| B.S/M.S./PharmD       | 3                           | 1                                     | 4                              |
| PharmD                | 2                           | 0                                     | 2                              |
| B.S./PharmD           | 3                           | 3                                     | 6                              |
| B.S/M.S./PhD          | <u>1</u>                    | <u>0</u>                              | <u>1</u>                       |
| Total                 | 80                          | 20                                    | 100                            |



Most of the military pharmacists held the rank of Captain or Major. However, 15 of the pharmacists were Lieutenants, and 15 were Colonels (Lieutenant Colonel or Colonel). Three quarters (9) of the civilian pharmacists were GS-11 pharmacists. The remaining three civilian pharmacists were GS-12 pharmacists (table 6).

The majority of the responding pharmacists (64%) were chief pharmacists (or directors of pharmacy). None of these pharmacists worked primarily in the area of inpatient pharmacy. Inpatient pharmacy positions were filled by assistant chiefs (or assistant directors) or staff pharmacists (table 7).

Only three of the responding pharmacists (3%) saw their jobs as primarily a clinical position, while almost half (44%) of the pharmacists considered their jobs to be primarily a management position (table 8).

Table 6. Rank profile of the Air Force pharmacists responding. (N = 100)

| Military or civilian rank  | Number of pharmacists | Percent of pharmacists |
|----------------------------|-----------------------|------------------------|
| Second Lieutenant          | 9                     | 9                      |
| First Lieutenant           | 6                     | 6                      |
| Captain                    | 31                    | 31                     |
| Major                      | 27                    | 27                     |
| Lieutenant Colonel/Colonel | 15                    | 15                     |
| All military pharmacists   | 88                    | 88                     |
| GS 11                      | 9                     | 9                      |
| GS 12                      | 3                     | 3                      |
| All civilian pharmacists   | 12                    | 12                     |

Table 7. Management position and the practice setting (inpatient, outpatient or both inpatient and outpatient) of the Air Force pharmacists surveyed.

| Position              | Inpatient<br>pharmacy | Outpatient<br>pharmacy | Inpatient and<br>outpatient | Total |
|-----------------------|-----------------------|------------------------|-----------------------------|-------|
| Director              | 0                     | 37                     | 27                          | 64    |
| Assistant<br>director | 9                     | 5                      | 8                           | 22    |
| Staff<br>pharmacist   | 6                     | 4                      | 4                           | 14    |
| Totals                | 15                    | 46                     | 39                          | 100   |

Table 8. The type of job of the Air Force pharmacists surveyed (management versus clinical functions). (N = 100)

| Job description                        | Number of pharmacists |
|--|-----------------------|
| Predominantly management functions     | 44                    |
| Predominantly clinical functions       | 3                     |
| Both management and clinical functions | 53                    |

### Demographic Data for Technicians

There were 271 men (75.9%) and 86 women (24.1%) technicians responding. Their mean age was 26.9 years (table 9), and they averaged slightly over 2 years (a mean of 25 months) at their present facility. The technicians averaged over 6 years (a mean of 6.6 years) active duty service. Table 10 lists their years experience as a pharmacy technician.

All technicians responding to the survey were high school graduates. Over half (57.7%) had at least one year of college beyond high school. In addition to the education listed below, almost all the technicians received pharmacy training from the Air Force before their first pharmacy assignment. Nine percent of the technicians had B.S. or B.A. degree, and one technician had a master's degree. The education levels of the responding technicians is given in table 11.

Over three quarters (80.7%) of the responding technicians were Staff Sergeant (E-5) or lower. Some senior technicians (E-8 and E-9) earn more money than some of the junior pharmacists (table 12).

Table 9. Ages of the Air Force pharmacy technicians responding. (N = 357)

| Age range | Number of technicians | Percent of technicians |
|-----------|-----------------------|------------------------|
| 18-21     | 77                    | 21.6                   |
| 22-27     | 150                   | 42.0                   |
| 28-33     | 56                    | 15.7                   |
| 34-39     | 31                    | 8.7                    |
| 40-45     | 26                    | 7.3                    |
| 46-51     | 4                     | 1.1                    |
| Unknown   | 13                    | 3.6                    |

Table 10. Years experience as a pharmacy technician of the responding Air Force pharmacy technicians (includes civilian experience). (N = 357)

| Range (in years) | Number of technicians | Percent of technicians |
|------------------|-----------------------|------------------------|
| 0-2              | 142                   | 39.8                   |
| 3-5              | 95                    | 26.6                   |
| 6-10             | 64                    | 17.9                   |
| 11-15            | 20                    | 5.6                    |
| 16-20            | 20                    | 5.6                    |
| Over 20          | 15                    | 4.2                    |
| Unknown          | 1                     | 0.3                    |

Table 11. Education level of the Air Force pharmacy technicians responding. (N = 357)

| Education level     | Number of technicians | Percent of technicians |
|---------------------|-----------------------|------------------------|
| High School         | 151                   | 42.3                   |
| One year college    | 108                   | 30.3                   |
| Two years college   | 14                    | 3.9                    |
| Three years college | 6                     | 1.7                    |
| Four years college  | 1                     | 0.3                    |
| Associates Degree   | 45                    | 12.6                   |
| in pharmacy         | 28                    | 7.8                    |
| not in pharmacy     | 17                    | 4.8                    |
| Bachelors Degree    | 31                    | 8.7                    |
| Masters Degree      | 1                     | 0.3                    |



Table 12. The rank held by the Air Force pharmacy technicians responding. (N = 357)

| Military or civilian rank    | Number of technicians | Percent of technicians |
|------------------------------|-----------------------|------------------------|
| E-2 (Airman)                 | 30                    | 8.4                    |
| E-3 (Airman First Class)     | 87                    | 24.4                   |
| E-4 (Senior Airman/Sergeant) | 86                    | 24.1                   |
| E-5 (Staff Sergeant)         | 85                    | 23.8                   |
| E-6 (Technical Sergeant)     | 30                    | 8.4                    |
| E-7 (Master Sergeant)        | 21                    | 5.9                    |
| E-8 (Senior Master Sergeant) | 13                    | 3.6                    |
| E-9 (Chief Master Sergeant)  | 4                     | 1.1                    |
| All military technicians     | 347                   | 97.2                   |
| GS-3                         | 2                     | 0.6                    |
| GS-5                         | 6                     | 1.6                    |
| GS-6                         | 2                     | 0.6                    |
| All civilian technicians     | 10                    | 2.8                    |

Table 13 shows the number of technicians performing certain technical procedures. The technicians were instructed to indicate if they "fill, check, and dispense" the procedure indicated.

Almost all (94.4%) of the technicians work in either an outpatient environment, or a combination of outpatient and inpatient environment. Only 20 (5.6%) of the technicians worked solely in an inpatient environment (table 14).

Table 13. Technical functions performed by the responding Air Force pharmacy technicians. (N = 357)

| Technical function       | Number of technicians performing | Percent of technicians performing |
|--------------------------|----------------------------------|-----------------------------------|
| Outpatient prescriptions | 324                              | 90.8 %                            |
| Control drugs            | 264                              | 73.9 %                            |
| Inpatient orders         | 211                              | 59.1 %                            |
| IV solutions             | 113                              | 31.7 %                            |
| Hyperalimentations       | 79                               | 22.1 %                            |

Table 14. Practice setting of the Air Force pharmacy technicians responding. (N = 357)

| Practice setting              | Number of technicians | Percent of technicians |
|-------------------------------|-----------------------|------------------------|
| Outpatient                    | 188                   | 52.8%                  |
| Inpatient                     | 20                    | 5.6%                   |
| Both outpatient and inpatient | 148                   | 41.6%                  |

Note: one technician did not give an answer to this question.

Facet Specific Measures of Job Satisfaction

Tables 15 and 16 give the mean, median, mode, and standard deviation of pharmacist and technician levels of satisfaction for the 15 facets measured.

Table 17 gives a comparison between pharmacist and technician job satisfaction for the 15 facets measured. In addition, a t-test gives the statistical significance of the differences between the means of the two groups.

Table 15. Facet-specific measures of job satisfaction for the responding Air Force pharmacists.

| Facet of job Satisfaction   | Number of the 100 pharmacists responding | Mean | Median | Mode | Standard deviation |
|-----------------------------|--|------|--------|------|--------------------|
| Ability utilization         | 97                                       | 3.84 | 4.04   | 4    | 1.038              |
| Advancement                 | 100                                      | 3.57 | 3.75   | 4    | 1.157              |
| Work challenge              | 100                                      | 3.95 | 4.04   | 4    | 0.896              |
| Goals and plans             | 99                                       | 3.59 | 3.60   | 3.5  | 0.806              |
| Policies and practices      | 99                                       | 3.52 | 3.63   | 4    | 0.942              |
| Staffing                    | 97                                       | 3.50 | 3.50   | 3    | 0.720              |
| Compensation/amount         | 100                                      | 3.38 | 3.82   | 4    | 1.274              |
| Compensation/comparison     | 100                                      | 3.59 | 3.85   | 5    | 1.227              |
| Compensation/practices      | 99                                       | 3.15 | 3.09   | 3    | 0.913              |
| Supervision/feedback        | 100                                      | 3.75 | 3.91   | 4    | 0.952              |
| Supervision/competence      | 99                                       | 3.36 | 3.36   | 3    | 0.923              |
| Supervision/human relations | 99                                       | 3.80 | 3.82   | 4    | 0.848              |
| Job satisfaction/pharmacy   | 99                                       | 4.16 | 4.20   | 4    | 0.751              |
| Job satisfaction/Air Force  | 97                                       | 4.02 | 4.06   | 4    | 0.709              |
| Role ambiguity              | 98                                       | 4.20 | 4.31   | 5    | 0.799              |

1=Dissatisfied  
3=Neutral  
5=Satisfied

Table 16. Facet-specific measures of job satisfaction for the responding Air Force pharmacy technicians.

| Facet of job satisfaction   | Number of the 357 technicians responding | Mean | Median | Mode | Standard deviation |
|-----------------------------|--|------|--------|------|--------------------|
| Ability utilization         | 332                                      | 3.75 | 4.00   | 5    | 1.175              |
| Advancement                 | 352                                      | 3.08 | 3.07   | 3    | 1.257              |
| Work challenge              | 353                                      | 3.48 | 3.75   | 5    | 1.245              |
| Goals and plans             | 355                                      | 3.20 | 3.21   | 3    | 1.174              |
| Policies and practices      | 354                                      | 2.93 | 2.95   | 2    | 1.236              |
| Staffing                    | 353                                      | 3.09 | 3.11   | 3    | 1.048              |
| Compensation/amount         | 357                                      | 2.36 | 2.14   | 1    | 1.239              |
| Compensation/comparison     | 354                                      | 2.77 | 2.77   | 3    | 1.142              |
| Compensation/practices      | 355                                      | 2.65 | 2.53   | 2    | 1.153              |
| Supervision/feedback        | 355                                      | 3.66 | 3.86   | 5    | 1.202              |
| Supervision/competence      | 354                                      | 3.63 | 3.85   | 5    | 1.270              |
| Supervision/human relations | 355                                      | 3.76 | 4.07   | 5    | 1.261              |
| Job satisfaction/pharmacy   | 356                                      | 3.75 | 3.90   | 5    | 1.062              |
| Job satisfaction/Air Force  | 338                                      | 3.46 | 3.57   | 4    | 1.124              |
| Role ambiguity              | 356                                      | 3.76 | 3.91   | 5    | 1.062              |

1=Dissatisfied  
3=Neutral  
5=Satisfied

Table 17. A comparison of Air Force pharmacist and pharmacy technician job satisfaction.

| Facet of job satisfaction   | pharmacists' mean score (N = 100) | technicians' mean score (N = 357) | t value | df  | p value |
|-----------------------------|-----------------------------------|-----------------------------------|---------|-----|---------|
| Ability utilization         | 3.84                              | 3.75                              | 0.65    | 427 | .513    |
| Advancement                 | 3.57                              | 3.08                              | 3.49    | 450 | .001    |
| Work challenge              | 3.95                              | 3.48                              | 4.18    | 451 | <.001   |
| Goals and plans             | 3.59                              | 3.20                              | 3.82    | 452 | <.001   |
| Policies and practices      | 3.52                              | 2.93                              | 5.11    | 451 | <.001   |
| Staffing                    | 3.50                              | 3.09                              | 4.43    | 448 | <.001   |
| Compensation/amount         | 3.38                              | 2.36                              | 7.06    | 455 | <.001   |
| Compensation/comparison     | 3.59                              | 2.77                              | 5.96    | 452 | <.001   |
| Compensation/practices      | 3.15                              | 2.65                              | 4.59    | 452 | <.001   |
| Supervision/feedback        | 3.75                              | 3.66                              | 0.97    | 453 | .433    |
| Supervision/competence      | 3.36                              | 3.63                              | -2.30   | 451 | .023    |
| Supervision/human relations | 3.80                              | 3.76                              | 0.37    | 452 | .711    |



Table 17 Continued.

| Facet of job satisfaction      | pharmacists' mean score | technicians' mean score | t value | df  | p value |
|--------------------------------|-------------------------|-------------------------|---------|-----|---------|
| Job satisfaction/<br>pharmacy  | 4.16                    | 3.75                    | 4.30    | 453 | <.001   |
| Job satisfaction/<br>Air Force | 4.02                    | 3.46                    | 5.91    | 433 | <.001   |
| Role ambiguity                 | 4.20                    | 3.76                    | 4.48    | 452 | <.001   |

1=Dissatisfied  
3=Neutral  
5=Satisfied

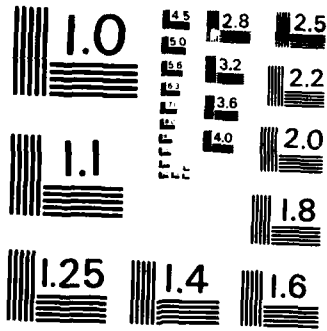
A paired samples t-test of pharmacists and technicians at different types of facilities (e.g. clinic, medical center) indicated the pharmacists were more satisfied than the technicians ( $p = .06$ ;  $df = 3$ ) at all types of facilities (table 3).

Selected Demographic Variables  
And Pharmacy Job Satisfaction

A t-test comparing responses between directors and assistant directors showed very little differences between the two groups. The only significant difference was their satisfaction with plans and goals, where the directors were more satisfied ( $p = .03$ ).

When grouping the directors and assistant directors and comparing their responses with staff pharmacists, two significant differences occurred. First, directors and their assistants were significantly more satisfied with their pharmacy jobs. Second, staff pharmacists were significantly less satisfied with hospital and pharmacy goals and plans. Table 18 gives further comparisons between the two groups.





MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS - 1963 - A

Table 18. A comparison of management pharmacists' pharmacy job satisfaction (directors and assistant directors) with staff pharmacists' pharmacy job satisfaction.

| Facet                           | Management pharmacists<br>(N = 86) | Staff pharmacists<br>(N = 14) | p value |
|---------------------------------|------------------------------------|-------------------------------|---------|
| Ability utilization             | 3.89                               | 3.42                          | .136    |
| Advancement                     | 3.56                               | 3.64                          | .801    |
| Work challenge                  | 3.98                               | 3.71                          | .301    |
| Goals and plans                 | 3.70                               | 2.93                          | .001    |
| Policies and practices          | 3.58                               | 3.14                          | .106    |
| Staffing                        | 3.54                               | 3.19                          | .104    |
| Compensation/amount             | 3.43                               | 3.04                          | .285    |
| Compensation/<br>comparison     | 3.62                               | 3.36                          | .456    |
| Compensation/<br>practices      | 3.21                               | 2.82                          | .145    |
| Supervision/feedback            | 3.78                               | 3.54                          | .378    |
| Supervision/<br>competence      | 3.39                               | 3.18                          | .421    |
| Supervision/<br>human relations | 3.84                               | 3.54                          | .354    |
| Job satisfaction/<br>pharmacy   | 4.31                               | 3.25                          | .001    |
| Job satisfaction/<br>Air Force  | 4.02                               | 3.96                          | .772    |
| Role ambiguity                  | 4.25                               | 3.85                          | .272    |

1=Dissatisfied  
3=Neutral  
5=Satisfied

The data also indicated a trend toward pharmacists in medical centers (N = 27) being less satisfied with their jobs ( $p = .054$ ) than pharmacists in smaller medical facilities. The pharmacists in medical centers were less satisfied ( $p = .009$ ) than their counterparts in other types of facilities with their goals, plans, policies, practices, and staffing.

The practice setting (inpatient or outpatient pharmacy) had very little effect on job satisfaction for pharmacists.

T- tests indicated that neither the type of facility nor the practice setting had a significant effect on technician job satisfaction ( $p > .05$ ). In addition, there were no significant correlations ( $p > .05$ ) between technician job satisfaction and the performance of specific technical functions (listed in table 13).

Table 19. Correlations of selected time-related demographic variables with pharmacy job satisfaction.

| Demographic variable                              | Correlation  | Significance level |
|---|--------------|--------------------|
| Years in military                                 |              |                    |
| pharmacists                                       | .291         | .023               |
| technicians                                       | .067         | .072               |
| Years as a pharmacist or<br>years as a technician | .132<br>.130 | .097<br>.007       |
| Age   |              |                    |
| pharmacists                                       | .203         | .023               |
| technicians                                       | .078         | .079               |
| Time at present facility                          |              |                    |
| pharmacists                                       | -.007        | .474               |
| technicians                                       | -.015        | .389               |

Correlations with Pharmacy Job Satisfaction

In an attempt to understand the relationship between the independent variable job facets and pharmacy job satisfaction, Pearsons r's were calculated. The results are given for both pharmacists and technicians in table 20. Unless otherwise noted,  $p = .001$  for all the correlations in this table.



Table 20. Correlations of 12 facets of job satisfaction with pharmacy job satisfaction for Air Force pharmacists (N = 100) and for Air Force pharmacy technicians (N = 357).

| Facet of job satisfaction   | Pharmacists' correlation | Technicians' correlation |
|-----------------------------|--------------------------|--------------------------|
| Ability utilization         | .541                     | .653                     |
| Advancement                 | .290 (p=.002)            | .517                     |
| Work challenge              | .618                     | .688                     |
| Goals and plans             | .545                     | .610                     |
| Policies and practices      | .500                     | .565                     |
| Staffing                    | .391                     | .595                     |
| Compensation/amount         | .372                     | .309                     |
| Compensation/comparison     | .331                     | .366                     |
| Compensation/practices      | .322                     | .421                     |
| Supervision/feedback        | .299                     | .553                     |
| Supervision/competence      | .318                     | .610                     |
| Supervision/human relations | .351                     | .632                     |
| Role ambiguity              | .517                     | .673                     |

### Hypothesis Testing

#### Role Ambiguity

Hypothesis 1: Pharmacists working in Air Force pharmacies perceive low levels of role ambiguity in their jobs (facet 15 - role ambiguity). This hypothesis is accepted. The mean score was 4.20 (SD=.799;  $p < .001$ ).

Hypothesis 2: Pharmacy technicians working in Air Force pharmacies perceive low levels of role ambiguity in their jobs (facet 15 - role ambiguity). This hypothesis is accepted. The mean score was 3.76 (SD=1.062;  $p < .001$ ).

#### Pharmacy Job Satisfaction

Hypothesis 3: Pharmacists working in Air Force pharmacies are satisfied with their jobs (facet 13 - pharmacy job satisfaction). This hypothesis is accepted. The mean score was 4.16 (SD=.751;  $p < .001$ ).

Hypothesis 4: Air Force pharmacists with different types of jobs (i.e. management positions, clinical positions, or positions involving both management and clinical practice) are all satisfied with their jobs (facet 13 - pharmacy job satisfaction). The mean job satisfaction scores for this hypothesis are given in table 21. The hypothesis for pharmacists in management, or with management and clinical roles is accepted. Even though the pharmacists with clinical functions have the highest average job satisfaction scores, the hypothesis that

pharmacists in clinical roles are satisfied with their jobs cannot be accepted at the .05 confidence level.

Table 21. The pharmacy job satisfaction (facet 13) of pharmacists in management or clinical positions.

| Job description                        | Number of pharmacists | Mean score | p value* |
|--|-----------------------|------------|----------|
| Predominantly management functions     | 44                    | 4.11       | .000     |
| Predominantly clinical functions       | 3                     | 4.33       | .057     |
| Both management and clinical functions | 53                    | 4.20       | .000     |

\*test for mean score different from 3.00 (p=.05)

Hypothesis 5: Air Force pharmacy technicians are satisfied with their jobs (facet 13 - pharmacy job satisfaction). This hypothesis is accepted. The mean score was 3.75 (SD=1.062;  $p < .001$ ).

#### Traditional Job Motivators

Hypothesis 6: Pharmacists in Air Force pharmacies are satisfied with their traditional job motivators (facet 1 - ability utilization, facet 2 - advancement, facet 3 - work challenge). This hypothesis is accepted. The mean score was 3.80 (SD=.817;  $p < .001$ ).

Hypothesis 7: Air Force pharmacy technicians are satisfied with their traditional job motivators (facet 1 -

ability utilization, facet 2 - advancement, facet 3 - work challenge). This hypothesis is accepted. The mean score was 3.41 (SD=1.083;  $p < .001$ ).

#### Goals, Plans, Policies, Practices, and Staffing

Hypothesis 8: Air Force pharmacists are satisfied with the goals, plans, policies, practices, and staffing of their pharmacies (facet 4 - goals and plans, facet 5 - policies and practices, facet 6 - staffing). This hypothesis is accepted. The mean score was 3.53 (SD=.660;  $p < .001$ ).

Hypothesis 9: Air Force pharmacy technicians are satisfied with the goals, plans, policies, practices, and staffing of their pharmacies (facet 4 - goals and plans, facet 5 - policies and practices, facet 6 - staffing). This hypothesis is not accepted. The mean score was 3.07 (SD=1.014;  $p < .213$ ).

#### Compensation

Hypothesis 10: Air Force pharmacists are satisfied with their compensation (facets 7, 8, and 9). This hypothesis is accepted. The mean score was 3.37 (SD=1.022;  $p < .001$ ).

Hypothesis 11: Pharmacy technicians in the Air Force are satisfied with their compensation (facets 7, 8, and 9).

This hypothesis is rejected. The mean score was 2.59 (SD=1.027;  $p < .001$ ).

#### Supervision

Hypothesis 12: Air Force pharmacists are satisfied with their supervision (facets 10, 11, and 12). This hypothesis is accepted. The mean score was 3.63 (SD=.796;  $p < .001$ ).

Hypothesis 13: Pharmacy technicians in the Air Force are satisfied with their supervision (facets 10, 11, and 12). This hypothesis is accepted. The mean score was 3.68 (SD=1.143;  $p < .001$ ).

#### Factor Analysis of Pharmacy Job Satisfaction

A factor analysis of the first 12 facets of job satisfaction with pharmacy job satisfaction (facet 13) yielded different results for pharmacists and technicians (Table 22 and Table 23).

Table 22. A factor analysis of the first 12 job satisfaction facets with overall pharmacy job satisfaction (facet 13) for the Air Force pharmacists surveyed. (N = 100)

| Facet of job satisfaction   | Factor 1 | Factor 2 | Factor 3 |
|-----------------------------|----------|----------|----------|
| Ability utilization         |          | .734     |          |
| Advancement                 | .408     |          |          |
| Work challenge              |          | .660     |          |
| Goals and plans             |          | .477     |          |
| Policies and practices      |          | .741     |          |
| Staffing                    |          | .446     |          |
| Compensation/amount         | .941     |          |          |
| Compensation/comparison     | .872     |          |          |
| Compensation/practices      | .570     |          |          |
| Supervision/feedback        |          |          | .797     |
| Supervision/competence      |          |          | .792     |
| Supervision/human relations |          |          | .779     |
| Loading Factor = 0.4        |          |          |          |

There were three job satisfaction factors for the pharmacists (table 22). Facets related to compensation formed the first factor. The second facet (advancement) may have been included in this group because it affects future compensation. The second factor grouped the traditional job motivators (excluding advancement) with goals, plans, policies, practices and staffing. This factor represented the pharmacists' job motivators. The final factor grouped the three facets pertaining to supervision (feedback, competence and human relations).

There were also three job satisfaction factors for technicians (table 23). The first factor grouped the three facets pertaining to supervision with goals, plans, policies, practices and staffing. The second factor grouped the three traditional job motivators (ability utilization, advancement, and work challenge) with goals, plans, policies, practices and staffing. The final factor grouped the three facets pertaining to compensation (amount, comparison and practices).

Table 23. A factor analysis of the first 12 job satisfaction facets with overall pharmacy job satisfaction (facet 13) for the Air Force pharmacy technicians surveyed. (N = 357)

| Facet of job satisfaction   | Factor 1 | Factor 2 | Factor 3 |
|-----------------------------|----------|----------|----------|
| Ability utilization         |          | .710     |          |
| Advancement                 |          | .689     |          |
| Work challenge              |          | .846     |          |
| Goals and plans             | .590     | .440     |          |
| Policies and practices      | .502     | .455     |          |
| Staffing                    | .457     | .427     |          |
| Compensation/amount         |          |          | .853     |
| Compensation/comparison     |          |          | .799     |
| Compensation/practices      |          |          | .648     |
| Supervision/feedback        | .770     |          |          |
| Supervision/competence      | .846     |          |          |
| Supervision/human relations | .853     |          |          |

Loading Factor = 0.4



### Pharmacy Job Satisfaction Multiple Regression Equations

The multiple regressions (stepwise inclusion) below helped evaluate what factors affected pharmacy job satisfaction. Factors entered into the regression equations were determined by factor analysis. Other independent variables (such as age and time at present facility) proved to be of little value in explaining a pharmacist's or a technicians's job satisfaction. The factor explaining the largest amount of variance in pharmacy job satisfaction was entered first, with the factor explaining the next largest variance entered next. The independent factors entered into the equations and the dependent variable (pharmacy job satisfaction) are given in tables 24 and 25. The value entered for each factor was the mean Likert score of the job satisfaction facets grouped in each factor.

Pharmacists' job satisfaction correlated highest (.656) with their satisfaction with their job motivators. In the regression equation, this variable accounted for 43.1 percent of total job satisfaction variance (table 26).

The technicians' satisfaction with their job correlated highest (.696) with their job motivators (table 27). Accordingly, almost half (48.1%) of the variance in technician job satisfaction could be accounted for with this variable alone.

Table 24. Independent variables used in the multiple regression equation for Air Force pharmacists as determined by factor analysis.

| Independent variable            | Facets included   |
|---------------------------------|---|
| Pharmacists' job motivators     | 1. Ability utilization<br>3. Work challenge<br>4. Goals and plans<br>5. Policies and practices<br>6. Staffing |
| Present and future compensation | 2. Advancement<br>7. Compensation/amount<br>8. Compensation/comparison<br>9. Compensation/practices           |
| Supervision                     | 10. Feedback<br>11. Supervision/competence<br>12. Supervision/human relation                                  |

Table 25. Independent variables used in the multiple regression equation for Air Force pharmacy technicians as determined by factor analysis.

| Independent variable                           | Facets included   |
|--|---|
| Traditional job motivators                     | 1. Ability utilization<br>2. Advancement<br>3. Work challenge                     |
| Goals, plans, policies, practices and staffing | 4. Goals and plans<br>5. Policies and practices<br>6. Staffing                    |
| Compensation                                   | 7. Compensation/amount<br>8. Compensation/comparison<br>9. Compensation/practices |
| Supervision                                    | 10. Feedback<br>11. Supervision/competence<br>12. Supervision/human relation      |

Table 26. A multiple regression summary table for Air Force pharmacists' overall pharmacy job satisfaction.  
(N = 94)

| Factor                                | Simple<br>r | Multiple<br>R | R<br>square | R square<br>change | p<br>value |
|---------------------------------------|-------------|---------------|-------------|--------------------|------------|
| Pharmacists'<br>job<br>motivators     | .656        | .656          | .431        | .431               | .000       |
| Present and<br>future<br>compensation | .411        | .665          | .442        | .011               | .183       |
| Supervision                           | .316        | .667          | .445        | .003               | .483       |
| Overall F = 24.0                      |             |               |             |                    |            |
| p < .001                              |             |               |             |                    |            |

Table 27. A multiple regression summary table for Air Force pharmacy technicians' overall pharmacy job satisfaction. (N = 317)

| Facet(s)  | Simple<br>r | Multiple<br>R | R<br>square | R square<br>change | p<br>value |
|---|-------------|---------------|-------------|--------------------|------------|
| Traditional<br>job<br>motivators                        | .694        | .694          | .481        | .481               | .000       |
| Goals, plans,<br>policies,<br>practices<br>and staffing | .674        | .757          | .572        | .092               | .000       |
| Supervision   | .667        | .797          | .635        | .062               | .000       |
| Compensation  | .407        |               |             |                    |            |
| Overall F = 181.1                                       |             |               |             |                    |            |
| p < .001  |             |               |             |                    |            |

Note: The compensation factor was dropped from the regression equation. Compensation accounted for an R square change of less than .00001.

## CHAPTER 5

### DISCUSSION, RECOMMENDATIONS, AND CONCLUSIONS

#### Discussion

##### Return Rate and Non Return Bias

The return rate for pharmacists was 82 percent. Pharmacists from smaller facilities (i.e, clinics) responded at a higher rate than the pharmacists in larger facilities (i.e, medical centers). Only the chief pharmacist at each facility was mailed the surveys. Therefore, at the larger facilities the assistant directors and staff pharmacists were dependent upon their directors to distribute a survey to them.

Staff pharmacists had lower job satisfaction than pharmacists with a management position. Therefore, if more staff pharmacists had responded from medical centers, the overall job satisfaction may have been slightly lower.

The return rate for technicians was 59 percent. Like the assistant directors and staff pharmacists, all the technicians were dependent upon the director of pharmacy to distribute the surveys to them. Once again, the larger facilities had a lower response rate, with only 39.9 percent of the technicians in medical centers responding. However, the mean job satisfaction score for technicians

was 3.75 for technicians in medical centers, the same average as for all the technicians (table 16). Therefore, the overall mean would likely have remained constant if the technician response rate from medical centers had been higher.

Five of the 72 facilities had no technicians respond. This accounted for over a quarter (26.7%) of all the non responding technicians.

#### Demographics

The population of pharmacists and technicians surveyed had several unique characteristics. For example, almost all the pharmacists in this study were either involved with management functions, or a combination of management and clinical functions. Only 3 (3%) of the pharmacist were predominantly involved with clinical practice. Because there were only three pharmacists in clinical practice, this group was not satisfied at a statistical level with their pharmacy jobs (hypothesis 4).

The education level of the pharmacists was high. Almost half (47%) of the pharmacists had training beyond the mandatory B.S. degree. In addition, 21.5 percent of the technicians had degrees, ranging from two year associate degrees to one masters degree.

The technicians in this study are performing at a higher level than the technicians in previous studies. For

example, a recent study of technician job satisfaction (Coburn et al., 1980) gave the two most common technical functions performed by the technicians as (1) taking medications from the shelf and (2) answering the pharmacy telephone. In contrast, the two most common technical functions performed by the technicians in this study were (1) fill, check and dispense outpatient prescriptions, and (2) fill, check and dispense controlled drugs.

#### Selected Demographic Variables and Job Satisfaction

The demographic data collected gave additional information concerning pharmacy job satisfaction. The pharmacists in management positions (i.e. directors) were significantly more satisfied with their jobs ( $p = .05$ ). This has also been found by previous researchers (Williamson, Kabat, 1972; Purohit, Stewart, 1980a, 1980b; Noel et al., 1982a). The increased job satisfaction appears related to the increase in satisfaction with the philosophy of practice.

In contrast to the management position, the practice environment (inpatient or outpatient) did not appear to significantly affect pharmacy job satisfaction. In addition, the technical functions routinely assigned to technicians did not significantly affect their overall pharmacy job satisfaction.



Time related variables (i.e, time in pharmacy, time at present job) appears to have different effects in different environments. For example, some pharmacy job satisfaction researchers have found that job satisfaction improves with time (Ahmann, 1976; Noel et al., 1982a). However, other pharmacy reseachers have reported that time does not have a significant effect (Hammel et al., 1979; Beno, Norwood, 1981).

The environment in this study is different than most pharmacy environments. With time, these pharmacy employees could obtain significant increases in pay and status. Accordingly, years experience in the Air Force correlated with increased job satisfaction for pharmacists ( $p = .023$ ). In addition, years experience in pharmacy correlated with higher pharmacy job satisfaction for technicians ( $p = .007$ ).

Both pharmacists and pharmacy technicians reported higher pharmacy job satisfaction than Air Force job satisfaction.

#### Instrument Reliability

The Guttman splithalf reliablility of the instrument was excellent (.902 for pharmacists and .943 for technicians).

### Hypothesis Testing

Both the pharmacists and technicians indicated they are satisfied with their understanding of their roles (hypotheses 1 and 2). In this predominantly technician environment, technicians perform most of the technical functions and pharmacists are concerned with professional (clinical and management) functions of the pharmacy. Therefore, the level of role ambiguity perceived by both pharmacists and technicians was low.

Both pharmacists and technicians indicated overall satisfaction with their jobs (hypotheses 3 and 4). In addition, pharmacists in different types of practice (i.e., management, clinical, or both management and clinical) indicated satisfaction with their jobs (hypothesis 5). However, even though the overall pharmacy job satisfaction score (facet 13) for the pharmacists in clinical practice was high (4.33), there were only three pharmacists in the sample who described their jobs as predominantly clinical. Therefore, their general satisfaction with pharmacy was not statistically significant ( $p = .057$ ).

Other hypotheses (6 and 7) explored pharmacists' and technicians' satisfaction with their job motivators. Both the pharmacists and technicians indicated satisfaction with their job motivators. Satisfaction with job motivators is essential for an employee to be satisfied overall with

his/her job (Lambert et al., 1980a). Regression analysis of pharmacists' job satisfaction (Johnson et al., 1977; Curtiss, Hammel, Johnson, 1978; Hammel et al., 1979) consistently rate job motivators (including ability utilization, advancement, and work challenge) as an essential component of job satisfaction.

In previous studies of job satisfaction in pharmacy, pharmacists have rated their satisfaction with their opportunity for advancement very low (Libby, Kirk, 1976; Johnson et al., 1977; Beno, Norwood, 1981; McGhan, Adamcik, 1981, 1982; Noel et al., 1982a; Carroll et al., 1982). This is also true for technician job satisfaction studies (Coburn et al., 1980; Noel et al., 1982a).

In addition to job motivators, satisfaction with institutional goals appears in regression equations throughout the pharmacy job satisfaction literature as being essential to pharmacists' job satisfaction (Johnson et al., 1977; Hammel et al., 1979).

Agreement with a facility's goals, plans, policies, practices, and staffing would indicate a philosophy of practice congruent with the facility's philosophy of practice. The pharmacists in management (i.e. directors and assistant directors) appeared very satisfied with the pharmacy's (or hospital's) philosophy of practice.

However, staff pharmacists appeared less satisfied, and the technicians appeared only neutral (hypotheses 8 and 9).

Most job satisfaction studies reported that pharmacists were not satisfied with their pay (Williamson, Kabat, 1976; Norwood, Beno, 1978; Noel et al., 1982a). This dissatisfaction was even more clearly stated for technicians (Coburn et al., 1980; Noel et al., 1982a). An underlying cause of this dissatisfaction may have been that pharmacists and technicians were also dissatisfied with their opportunity for advancement, and felt they were unable to grow financially.

However, in this sample of pharmacists and technicians surveyed, the opportunity for advancement is available to essentially all pharmacy employees on a merit basis. Therefore, it was not surprising when the sample of pharmacists reported satisfaction with their pay (hypothesis 10).

However, many of the technicians have not earned the higher technician positions, and therefore were not satisfied with their pay. Unquestionably pay is one of the most serious complaints technicians have concerning their job (hypothesis 11). This would also be true of several of the newer staff pharmacists, who do not have enough seniority to earn what their counterparts would in civilian institutions.

According to Herzberg, competent and considerate supervision is a hygiene factor that, if missing could lead to job dissatisfaction. Both the pharmacists and technicians surveyed indicated satisfaction with their supervision (hypotheses 12 and 13).

Pharmacists were satisfied with all aspects of their job that were measured. On the other hand, the technicians were satisfied overall with their jobs, but were neutral or dissatisfied with certain aspects of their job. For example, they were dissatisfied with their compensation, and this appears to be a serious complaint among technicians. In addition, the technicians were not satisfied with their facilities' plans, goals, policies, procedures and staffing.

In most areas pharmacists were more satisfied with their jobs than their technician counterparts. The areas where pharmacists were more satisfied and showed a statistically significant difference included the following: advancement, work challenge, goals, plans, policies, practices, and staffing, all three facets concerning compensation, pharmacy job satisfaction, Air Force job satisfaction, and role ambiguity satisfaction. In contrast, the technicians were more satisfied than the pharmacists with the competence of their supervision.

Satisfaction with traditional job motivators was the most important component of overall pharmacy job satisfaction for technicians. Satisfaction with goals, plans, policies, practices and staffing was the second most important component of their pharmacy job satisfaction.

#### Pharmacy Job Motivators

The Air Force pharmacists surveyed received job satisfaction through traditional job motivators as defined by Hertzberg (Lambert et al., 1980a). Hertzberg considered opportunity for advancement to be a job motivator. However, the Air Force pharmacists viewed advancement to be a compensation factor, not as a job motivator. In addition to other traditional job motivators (i.e. ability utilization, work challenge), these pharmacists viewed the opportunity to work in an environment congruent with their philosophy of practice an important job motivator.

In comparison to the pharmacists, the technicians viewed opportunity for advancement as a job motivator. They viewed their institutional goals, plans, policies, procedures, and staffing as being not only related to their job motivators, but also viewed them as being related to their supervision.

### Recommendations

Pharmacy managers should adopt a progressive participatory management style whenever possible. Regression equations of this and previous studies (Johnson et al., 1977; Hammel et al., 1979) indicate that satisfaction with goals, plans, etc. is a critical component of pharmacy job satisfaction. Involvement of staff pharmacists and technicians in developing goals and developing new clinical programs should increase their commitment to these new programs (Buchanan, 1983).

Because a pharmacist's agreement with the facility's plans, goals, policies, procedures, and staffing is so critical with their overall job satisfaction, pharmacy schools should help students develop their philosophy of practice at an undergraduate level. In addition, pharmacy students should be encouraged to develop an expertise in an area congruent with their philosophy of practice.

Pharmacy schools and residency programs should encourage pharmacy students to specialize. For example, pharmacists should be encouraged to create new practitioner roles. New clinical positions for pharmacists should not be limited to hospital practice, but should also be developed in outpatient settings, industry, research, and teaching. There also is a need for more pharmacists with

advanced degrees, specialized residencies or other specialized (on the job) training. Pharmacists need to expand the pharmacy profession into areas other than clinical (PharmD) areas. For example, there is an immediate need for pharmacists with management abilities (Noel et al., 1982b). A properly selected area of specialization may allow a pharmacist to better use his or her abilities, and result in higher job satisfaction. Future research should further explore this possibility.

In addition, the relationship between increased satisfaction with certain aspects of pharmacy jobs and increased overall job satisfaction should be more firmly established. Also, further studies should identify more specifically what factors Air Force pharmacists and pharmacy technicians find satisfying about their jobs.

Whenever possible, a hierarchy of staff pharmacists should be established. A similar hierarchy for technicians should also be established. Promotions and pay increases should reward competency, and not just seniority. This would allow an opportunity for advancement to all pharmacy employees, not just to senior employees.



### Conclusions

The need for change in pharmacy is apparent. Evidence to this fact are the many pharmacists and technicians dissatisfied with their jobs (Williamson, Kabat, 1972; Curtiss et al., 1978; Coburn et al., 1980; Carroll et al., 1982; Noel et al., 1982a). When pharmacists and technicians are in an atmosphere that 1) motivates them and 2) is congruent with their philosophy of practice, they are satisfied with their jobs.

The demand for change is coming from several different sources. For example, there are external pressures (i.e. consumers) that will demand professional services for the professional fees they pay pharmacists. In addition, there are internal pressures from both clinically trained pharmacists and competent technicians who are demanding more challenging responsibilities and positions.

The need for change is reflected by several other circumstances. The future of pharmacy will be threatened by our inability to attract outstanding students if we cannot offer them challenging, professional positions when they graduate.

Also, pharmacists currently in technical roles are threatened with decaying professional knowledge, and

therefore decaying professionalism. This eroding professionalism is a threat to pharmacy.

With the onset of hospital reimbursement programs such as diagnosis related groups (DRGs), the probability of budget reductions within hospitals could lead to technical pharmacists being replaced with technicians. What will be the new roles for pharmacists?

Many pharmacists believe that clinical pharmacy, practiced in hospitals is the only future for the professional practice of pharmacy. However, management aspects of pharmacy are also important. Without pharmacy managers, new clinical and practitioner roles for pharmacists will evolve slowly or not at all. Also, pharmacy managers with an knowlege of the importance of progressive participatory management styles are needed to motivate pharmacy personnel, and therefore provide an environment where job satisfaction will be high.

If pharmacy is to remain a profession and not become a technical job, future roles for pharmacists must use the training and knowlege of contemporary practice. For many pharmacists currently functioning predominantly in technical roles, re-educating themselves will present a challenge. However, it is doubtful if consumers of pharmacists' services will be willing to pay professional wages for technical work indefinitely. Therefore, the

pharmacist roles in the future must utilize pharmacists with specialized knowlege.

When the role of the pharmacist changes, beneficial changes will occur for technicians. Technicians will be given greater responsibility, and therefore greater job motivators (i.e, opportunity for advancement) and eventually greater compensation.

However without leadership, these changes will occur too slowly or not at all. Therefore, there is a need for knowledgable pharmacy leaders/managers both at the local level and at the national level, to lead pharmacy into a new era of practice.

## APPENDIX A

### INSTRUMENTS IN PREVIOUS STUDIES MEASURING JOB SATISFACTION IN PHARMACY

Authors of pharmacy job satisfaction studies have used the publications listed below to develop instruments that measure job satisfaction.

1. The 1972-1973 Quality of Employment Survey (Quinn, Shepard, 1974) (facet-free measures of job satisfaction).
2. The Michigan Organizational Assessment Package: progress report III (Cammann et al., 1980)
3. Manual for the Minnesota Satisfaction Questionnaire (Weiss et al., 1967) (facet-specific measures of job satisfaction).
4. State-trait Anxiety Inventory Manual for Form X (Spielberger et al., 1970).
5. An Index of Job Satisfaction (Brayfield, Rothe, 1951) (facet-free measures of job satisfaction).
6. Job Description Index (Smith et al., 1969) (Facet-free measures of job satisfaction).
7. Multiple Affect Adjective Checklist (Beck et al., 1975) (a measure of depression).
8. Measurement of Experimentally Induced Affects (Zuckerman, Lubin, 1964) (a measure of depression).
9. Role Conflict and Ambiguity as Critical Variables in a Model of Organizational Behavior (House, Rizzo, 1972).
10. Effects of Work Load, Role Ambiguity, and Type A Personality on Anxiety, Depression and Heart Rate (Caplan, Jones, 1975).
11. Questionnaire developed by the Management Institute of the University of Wisconsin Extension Division (modified) (Williamson, Kabat, 1972)

APPENDIX B

SURVEY INSTRUMENT AND CORRESPONDENCE

Dear Air Force Pharmacist,  
Dear Air Force Pharmacy Technician,

The practice of pharmacy in the Air Force is different than civilian practice. Differences include the military environment we work in and the way pharmacy technicians are utilized. However, civilian pharmacy managers are beginning to use more pharmacy technicians, and are interested in characteristics of pharmacies already using large numbers of technicians.

Therefore, I am asking you about your job in a pharmacy staffed predominantly with technicians. If the results of this study are to be truly representative, it is important that your questionnaire be completed and returned. Please take a few minutes and answer each question in this pamphlet.

You may be assured of complete confidentiality. The questionnaire has an identification number for mailing purposes only. This is so we may check your hospital or clinic as having responded. Your name will never be placed on the questionnaire or used in reporting.

I hope to present the results of this study to the annual Air Force pharmacy meeting next May (1984).

If you have any questions, please write me at the University of Arizona.

Thank you for your assistance.

Sincerely,

PAUL J. SHONEBARGER, Capt, USAF, BSC  
AFIT Student

DEMOGRAPHIC DATA - PHARMACISTS

PHARMACISTS PLEASE FILL OUT THE FOLLOWING DEMOGRAPHIC INFORMATION.

## RANK

|   |                                |
|---|--------------------------------|
| <input type="checkbox"/> 2 Lieutenant       | <input type="checkbox"/> GS-9  |
| <input type="checkbox"/> 1 Lieutenant       | <input type="checkbox"/> GS-10 |
| <input type="checkbox"/> Captain            | <input type="checkbox"/> GS-11 |
| <input type="checkbox"/> Major              | <input type="checkbox"/> GS-12 |
| <input type="checkbox"/> Lieutenant Colonel | <input type="checkbox"/> GS-13 |
| <input type="checkbox"/> Colonel            |                                |

## GENDER

MALE  
 FEMALE

YEARS IN SERVICE Enlisted  Officer  Total active  
 (ON ACTIVE DUTY) duty

YEARS AS A PHARMACIST (FULL TIME)

PRESENT AGE

TIME AT PRESENT DUTY STATION  YEARS  MONTHS

CHECK DEGREE(S) YOU HAVE COMPLETED

B.S.  
 M.S. or M.A.  
 PhD  
 PharmD

HAVE YOU COMPLETED A RESIDENCY PROGRAM IN PHARMACY?

YES  
 NO

HOW WOULD YOU BEST DEFINE YOUR PRESENT JOB? (CHECK ONE ONLY)

mostly outpatient  
 mostly inpatient  
 both inpatient and outpatient

HOW WOULD YOU BEST DEFINE YOUR PRESENT JOB? (CHECK ONE ONLY)

mostly management functions  
 mostly clinical functions  
 both management and clinical functions

HOW WOULD YOU BEST DEFINE YOUR PRESENT POSITION? (CHECK ONE ONLY)

- Director  
 Assistant/Associate director  
 supervisor of other pharmacists  
 staff pharmacist

HOW MANY PHARMACISTS CURRENTLY WORK IN YOUR PHARMACY? \_\_\_\_\_  
 (include yourself)

HOW MANY TECHNICIANS CURRENTLY WORK IN YOUR PHARMACY? \_\_\_\_\_  
 HOSPITAL ID# \_\_\_\_\_ (FOR ACCOUNTING PURPOSES ONLY)

**DEMOGRAPHIC DATA - TECHNICIANS**

TECHNICIANS PLEASE FILL OUT THE FOLLOWING DEMOGRAPHIC INFORMATION.

**RANK**

- |   |                               |
|---|-------------------------------|
| <input type="checkbox"/> Airman Basic           | <input type="checkbox"/> GS-1 |
| <input type="checkbox"/> Airman                 | <input type="checkbox"/> GS-2 |
| <input type="checkbox"/> Airman First Class     | <input type="checkbox"/> GS-3 |
| <input type="checkbox"/> Senior Airman          | <input type="checkbox"/> GS-4 |
| <input type="checkbox"/> Sergeant               | <input type="checkbox"/> GS-5 |
| <input type="checkbox"/> Staff Sergeant         | <input type="checkbox"/> GS-6 |
| <input type="checkbox"/> Technical Sergeant     | <input type="checkbox"/> GS-7 |
| <input type="checkbox"/> Master Sergeant        |                               |
| <input type="checkbox"/> Senior Master Sergeant |                               |
| <input type="checkbox"/> Chief Master Sergeant  |                               |

**GENDER**

- MALE  
 FEMALE

YEARS IN SERVICE (ON ACTIVE DUTY) \_\_\_\_\_

YEARS IN PHARMACY (FULL TIME) \_\_\_\_\_

TIME AT PRESENT DUTY STATION \_\_\_\_\_ YEARS \_\_\_\_\_ MONTHS

PRESENT AGE \_\_\_\_\_

## CHECK EDUCATION LEVEL(S) YOU HAVE COMPLETED

- High School  
 one full year of college (30 semester or 45 quarter hours)  
 Associates Degree (not in pharmacy)  
 Associates Degree (in pharmacy)  
 B.S. or B.A.  
 M.S. or M.A.  
 PhD  
 Other (specify) \_\_\_\_\_

## HOW WOULD YOU BEST DEFINE YOUR PRESENT JOB? (CHECK ONE ONLY)

- mostly outpatient  
 mostly inpatient  
 both inpatient and outpatient

## CHECK THE FOLLOWING PHARMACY PROCEDURES YOU ROUTINELY PERFORM.

- fill, check, and dispense prescriptions.  
 fill, check, and dispense controlled drug prescriptions.  
 fill, check, and dispense orders for intravenous solutions.  
 fill, check, and dispense orders for hyperalimentations.  
 fill, check, and dispense inpatient orders (unit dose or ward stock).

HOW MANY PHARMACISTS CURRENTLY WORK IN YOUR PHARMACY? \_\_\_\_\_

HOW MANY TECHNICIANS CURRENTLY WORK IN YOUR PHARMACY? \_\_\_\_\_  
(include yourself)

HOSPITAL ID # \_\_\_\_\_ (FOR ACCOUNTING PURPOSES ONLY)



**FACET-SPECIFIC QUESTIONS (BOTH PHARMACISTS AND TECHNICIANS)**

NOW RATE HOW YOU FEEL ABOUT DIFFERENT ASPECTS OF YOUR JOB. RESPONSES RANGE FROM DISSATISFIED (1) TO SATISFIED (5).

1. The chance to make use of my skills and abilities. (facet 1)
2. The chance for advancing into a better job. (facet 2)
3. Being able to find challenge in my work. (facet 3)
4. The way that I am informed about pharmacy and hospital plans and goals. (facet 4)
5. The way the pharmacy assigns people so work is not duplicated. (facet 6)
6. My pay, considering the amount of responsibility I have. (facet 7)
7. The way my pay compares with persons with a job like mine. (facet 8)
8. How often pay raises are given. (facet 9)
9. Being told what my immediate supervisor thinks about my ideas. (facet 10)
10. The way my supervisor provides competent supervision. (facet 11)
11. Knowing what my responsibilities are. (facet 15)
12. The opportunity to do work that is well-suited to my abilities. (facet 1)
13. The opportunity for advancement in pharmacy within the Air Force. (facet 2)
14. Being able to do challenging work. (facet 3)
15. The way policies and practices are applied consistently. (facet 5)
16. The way the pharmacy career field selects only first-rate people. (facet 6)
17. The amount of pay for the work I do. (facet 7)

18. The way my pay compares with that of people just starting. (facet 8)
19. Being told how well I am doing by my immediate supervisor. (facet 10)
20. The personal relationship between my immediate supervisor and his/her people. (facet 12)
21. My position in the pharmacy, all things considered. (facet 13)
22. Working and living in a military environment. (facet 14)
23. The way this department's plans are made and followed. (facet 4)
24. The way policies and practices change as needed. (facet 5)
25. The way promotions are decided upon. (facet 9)
26. The way my supervisor trains his/her people. (facet 11)
27. The way my supervisor supports his/her people (with top management). (facet 12)
28. All parts of my job pertaining to the pharmacy. (facet 13)
29. All parts of my job pertaining to the Air Force. (facet 14)
30. Knowing exactly how much authority I have. (facet 15)

20 June 1983

Dear Chief Pharmacists,

One month ago I mailed surveys to 72 Air Force pharmacies, including yours. Almost half (48%) of the surveys mailed have already been returned to me. However, I feel the response rate could be much higher.

My records show \_\_\_ of \_\_\_ employes in your pharmacy (\_\_\_%) have responded. However, I want each employee's opinion reflected in this study because each employee views his/her job differently. The more responses received, the more representative this study will be.

Often surveys are misplaced or lost. Therefore, I have enclosed enough questionnaires to give everyone who has not yet responded a second opportunity to respond.

I sincerely appreciate the cooperation already given by Chief Pharmacists throughout the Air Force.

PAUL J. SHONEBARGER, Capt, USAF, BSC  
AFIT Student

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