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VALIDATION OF NURSES' JOB SATISFACTION

BY

EILEEN HARRIS

A THESIS

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Supervisor

Date Sept. 26/83

ABSTRACT

Although the construct of job satisfaction has been the subject of extensive research during the last four decades, it is evident from the literature that conceptual and methodological deficiencies persist. Foremost among these deficiencies is the frequent failure of investigators to establish the reliability and validity of the various measures used. Given the importance of the job satisfaction topic and the status of current measurement, validation studies were identified as an important subject to pursue. The objective in this study was to examine the psychometric properties of an instrument designed to measure the job satisfaction of nursing personnel.

A priori it was postulated that the instrument chosen for this study measured two dimensions of job satisfaction, namely intrinsic and extrinsic, and that these factors reflected satisfaction with the job content and job context respectively. The format of the questionnaire provided three separate measures of job satisfaction and one measure of job dissatisfaction. All scores were examined to determine if conceptually distinct measures yielded empirically comparable results.

The instrument was administered to the supervisory and non-supervisory nursing staff of an acute care cancer institute. A 61 percent response rate was obtained from a total surveyed group of 102 nurses.

To analyze these data various statistical models were employed including Cronbach's (1951) alpha coefficient, factor analysis, analysis of variance, and the determination of bivariate and multiple correlation coefficients. Overall, these analyses suggested that the instrument measured a unidimensional construct of job satisfaction

rather than the two - dimensional construct postulated a priori.

Of the four scoring techniques assessed, the measure of need fulfillment demonstrated the most consistent evidence of validity for a single measure. Further, it was found that these scores, when weighted by a measure of importance, did not provide a more valid measure of job satisfaction than unweighted scores. Multiple regression analyses, however, indicated that various linear combinations of need fulfillment and job dissatisfaction scores were superior to the single measure of need fulfillment for the prediction of several criterion variables. It was concluded therefore that this combination of scores provided the most comprehensive measure of nurses' job satisfaction.

Recommendations arising from the study pertain to the methodology for future evaluation of the instrument's validity. The incorporation of criterion-related validation was strongly encouraged since few investigators report validation at this level. However, it was noted that the selection of criterion measures may be problematic, and in view of the results obtained in this investigation the use of absence and tenure as criterion variables must be questioned. To sufficiently evaluate the construct validity of the measure the use of Campbell and Fiske's multitrait multimethod model was recommended. In this regard, it was suggested that the factor analytic technique could provide useful information concerning the structure of the job satisfaction variable provided multimethods were used to assess the construct of interest.

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CHAPTER I

INTRODUCTION

STATEMENT AND IMPORTANCE OF PROBLEM

Few topics within the field of social sciences have been the subject of more intensive discussion in the literature than that of job satisfaction (Locke, 1976; Katz & Van Maanen, 1977). The sustained interest in this topic over several decades is related to the centrality of work in the lives of most individuals and the consequent desire to understand work-related behaviour.

Original interest in employees' work attitudes stemmed from the belief that job satisfaction influenced productivity (Korman, 1971; Locke, 1976; Landy & Trumbo, 1980). More recently however, job satisfaction has been examined as a topic worthy of study in itself. This approach is congruent with the current interest of psychologists in human affective experience and the desire of theoreticians to improve understanding of motivation and behaviour (Smith, Kendall & Hulin, 1969).

Despite intensive study of the job satisfaction phenomenon over the past fifty years, our understanding of this construct has not increased substantially. Job satisfaction to date, has not been well conceptualized and a large part of the research literature has lacked a theoretical orientation (Locke, 1976).

Initially, work satisfaction was described as a unidimensional concept. This view has been replaced gradually by the current multidimensional conception of job satisfaction as an attitude derived from the characteristics of the job content, the job context, and the individual (Hibberd, 1972; Longest, 1974; Myrtle & Robertson, 1979).

Increasing recognition of the multidimensional nature of job satisfaction has resulted in a trend toward the development of more complex explanatory models and the employment of varying operational strategies (Gruneberg, 1979). To date, the literature has failed to demonstrate the superiority of any one approach (Weisman, Alexander, & Chase, 1980). However, the past assumption that all methods validly measure the same phenomenon is now being questioned in a critical evaluation of both theory and methodology (Evans, 1972; Nord, 1977; Ronan & Marks, 1973; Wanous & Lawler, 1972).

A review of the job satisfaction literature suggests that the basic question of construct validity has not been addressed (Schwab, 1980; Wanous & Lawler, 1972). As Locke (1976) has emphasized "the choice of a measure must be defended on the grounds that it actually measures what the investigator set out to measure" (p. 1300). Unfortunately, satisfaction instruments have frequently failed to meet this fundamental requirement and an assumption of validity has often been made solely on the basis of the investigator's claim that the scale is an "obvious" measure of the satisfaction construct (Smith et al., 1969). Moreover, new instruments were often considered equivalent to other measures of satisfaction without any demonstration of convergence much less any attempt to document the instrument's ability to discriminate among theoretically uncorrelated constructs and phenomena (Wanous & Lawler, 1972).

In part, the problem is attributable to the failure of investigators to specify the conceptual basis from which the instrument was developed (Schwab, 1980). A well-articulated theory defining the nature of the construct and postulating linkages to other variables is a prerequisite to the evaluation of validity (Smith et al., 1969).

Although job satisfaction has been studied widely in the business and industrial sectors, until recently research directed toward health care workers has been relatively limited (Ginzberg, Patray, Ostow, & Brann, 1982). The renewed interest in the topic as it pertains to the nursing profession has been prompted by difficulties with recruitment and retention, professional disillusionment, and role stress (Brief, Van Sell, Aldag & Malone, 1979; Dear, Weisman, Alexander & Chase, 1982; Kramer & Schmalenberg, 1978; Peterson, 1983).

Within the health care field job functions and employee expectations concerning those functions are changing rapidly (Ginzberg et al., 1982; Kleinknecht & Hefferin, 1982; Sovie, 1982). The introduction of new roles, the impact of specialization, and the increasing sophistication of medical technology are but three of the factors which have strongly influenced the work attitudes of nursing staff (Slavitt, Stamps, Piedmont & Haase, 1978).

Major alterations in job structure and function suggest probable changes in nurses' attitudes toward their work. Indeed, the literature indicates that nurses are subscribing to a new work ethic, one which is not founded on "unquestioning dedication to authority or tradition" (Friss, 1981, p. 14) but rather is rooted in the belief that both characteristics of the job as well as the work environment should be conducive to the achievement of satisfaction.

Negative aspects of job dissatisfaction, such as turnover, absenteeism, and role stress underline the need to obtain reliable and valid information about the job satisfaction phenomenon. Unfortunately, the multiplicity of instruments used to assess nurses' work attitudes suggests the possibility that not all methods validly measure

the same construct. It is therefore imperative that nursing researchers address the issue of reliability and validity if substantive information concerning this topic is to be obtained.

The rationale underlying this study is that of the necessity of evaluating the psychometric properties of instruments employed to measure the job satisfaction of nursing personnel. The application of theory and data derived from occupational groups within the industrial and business sectors may not be appropriate to the unique tasks and organizational environment of registered nurses (Ullrich, 1978).

The instrument selected for assessment in this study was developed within the theoretical model of Porter & Lawler (1968) and modified for use in a nursing population by Munson and Heda (1974). Although Munson and Heda (1974) demonstrated some support for the validity of their measure, several other investigators have employed the Porter & Lawler format without evaluating the psychometric properties of the scale (Benson & White, 1972; Carlsen & Malley, 1981; Cleland; Bass, McHugh, & Montano, 1976; Rozell, 1977). The conclusions reached by these investigators may therefore not be warranted.

The objective in this study was to examine the validity of the Munson and Heda (1974) instrument. Statistical techniques used to assess criterion-related validity included correlation and multiple regression analyses. To estimate construct validity the models of factor analysis and analysis of variance between known groups were selected. The format of the instrument provided four separate measures of job satisfaction. All of these scores were examined to determine if conceptually distinct measures yielded empirically comparable results.

LIMITATIONS AND ASSUMPTIONS

The findings in this study should be considered in light of the following limitations and assumptions.

The use of a multitrait-multimethod model for the assessment of construct validity has been advocated by Campbell and Fiske (1959). Although two forms of validity were assessed - criterion-related and construct - the investigation was restricted to the evaluation of a single trait by a single method.

Other limitations pertained to the content validity of the study. Individuals requested to assess the measure in these respects were not randomly selected therefore limiting the generalizability of the content validity estimate.

The study was restricted to registered nurses employed in one hospital setting. The subjects were not randomly selected and therefore the findings are not generalizable beyond this subject group.

A further limitation rests in the cross-sectional nature of the study. Measures of job satisfaction were taken at a single point in time. If job satisfaction is a dynamic and non-static attitude, then longitudinal measurement of this variable would be preferable.

For the purpose of this study it was assumed that job satisfaction evolved from characteristics of the work environment. Although job satisfaction may be related to factors such as familial responsibilities, and life-cycle stage, this investigation was restricted to examining the linkages arising from the workplace.

It was further assumed that failure to assure the respondents of anonymity did not influence subject responses.

DEFINITION OF TERMS

Terms which may be unique to this study were defined as follows:

Job satisfaction: persistent feelings toward discriminable aspects of the job situation. These feelings are thought to be associated with perceived differences between what is expected and what is experienced in relation to the alternatives in a given situation (Smith et al., 1969, p. 37);

Role ambiguity: "lack of the necessary information available to a given organizational position" (Rizzo, House, & Lirtzman, 1970, p. 151);

Absenteeism: the number of days absent due to illness or other personal reasons, but excluding days off, statutory holidays, vacation, or educational leave, in the year preceding the study;

Tenure: the duration of current employment;

Intent to leave: the employee's intention to terminate current employment within three years from the date of the study.

OVERVIEW OF THE THESIS

The following chapter contains a review of the literature pertinent to the measurement of job satisfaction among nursing personnel. Chapter III is comprised of the methodology of the study and a description of the research instrument. Chapter IV provides a presentation and discussion of the research findings. In the concluding chapter a summary of the study and recommendations arising from

the investigation are presented.

CHAPTER II

SELECTED LITERATURE REVIEW

INTRODUCTION

An immense body of literature exists in which an evaluation of the theoretical and methodological issues relevant to job satisfaction is undertaken. The intent of this review is not to discuss this literature in detail but rather to provide a brief overview of the salient issues as they relate to the purpose of the study. The review is therefore restricted to the following topics: 1) historical perspective; 2) theoretical issues; 3) methodological issues; 4) job satisfaction in nursing; 5) selected correlates of job satisfaction; and 6) measurement theory.

HISTORICAL PERSPECTIVE

The concept of job satisfaction has been described as a research topic characterized by ambiguity, conflicting opinion, and methodological nuance (Katz & Van Maanen, 1977). This construct has been the subject of extensive research. Locke (1976) estimated that over 3000 articles devoted to the topic have been published. It is evident from even a superficial review of this extensive literature that work satisfaction is a complex phenomenon and one which has been of interest to numerous investigators since the turn of the century (Brayfield & Crockett, 1955; Vroom, 1964).

Systematic attempts to study the nature of job satisfaction date back to the 1930's (Hoppock, 1935). However, the importance of employees' work attitudes in determining job behaviour was recognized much earlier as evidenced in the Scientific Management theory pro-

posed by Taylor in 1912. Proponents of the theory postulated that high economic rewards and appropriate environmental conditions resulted in employee satisfaction and improved productivity. The influence of physical working conditions on satisfaction and productivity was the focus of research for well over a decade following the initial work of Taylor (1970).

It was not until publication of the Hawthorne Studies conducted by Mayo and his colleagues in the 1920's that a new focus of research emerged. Although this series of studies was initially intended to examine the effects of environmental conditions on employee productivity, there was a gradual shift in focus from physical working conditions to the importance of employee attitudes as determinants of productivity. It was concluded from the Hawthorne Studies that relationships among co-workers, and supervisory practices, were central factors in the development of job satisfaction. It was further concluded that employees' perceptions of the work environment, rather than the reality of that environment, were more influential in determining job attitudes (Landy & Trumbo, 1980).

The outgrowth of these and other studies was the development of the Human Relations movement characterized by the assumption that worker productivity is dependent on job satisfaction which in turn is a function of the quality of human relationships within organizations (Gruneberg, 1979).

Concurrent with Mayo's work was a study undertaken by Hoppock (1935) who sampled over 500 employees and concluded that multiple and diverse factors contributed to employees' work attitudes. Among the factors cited by Hoppock (1935) were previously studied

variables such as fatigue, monotony, and supervision as well as factors such as achievement which have only recently been described. Hoppock's results provided the first suggestion of the complex and multidimensional nature of job satisfaction. Unfortunately, the Hawthorne Studies rather than those of Hoppock (1935) influenced the trend of research over the following two decades, and work satisfaction continued to be treated as a unidimensional construct (Carroll, 1973; Locke, 1976).

The publication of a monograph by Herzberg, Mausner, and Snyderman in 1959 marked a shift away from the Human Relations movement to a new perspective of job satisfaction in which attention was focused on the work content. Herzberg et al.'s (1959) theory underlined the distinction between factors considered extrinsic to the substance of the job or those related to the work environment, and factors considered intrinsic to the work itself. Although Herzberg's theory has not been extensively supported it did serve the important function of emphasizing job characteristics as influential determinants of job satisfaction.

In summary, three historical trends in the study of job satisfaction have been identified (Locke, 1976). The earliest, the Physical-Economic School, viewed job satisfaction solely as a consequence of economic and environmental work factors. The Human Relations School, on the other hand, emphasized the role of cohesive work groups and satisfactory supervision in the development of positive work attitudes. The third trend described by Locke (1976) as the Work Itself School suggested that job satisfaction develops from the growth of skill and responsibility made possible by challenging jobs. Each

of these approaches may be criticized for their tendency to examine job satisfaction within a narrow context around a limited set of conceptual variables. However, some progress toward understanding the job satisfaction construct is evident in comparing Taylor's rather simplistic view with the more complex assumptions held by later researchers.

THEORETICAL ISSUES

A single theory of work motivation which integrates a variety of causal variables into a unified framework to explain job satisfaction has not been developed to date. Accordingly, several conceptual definitions of the job satisfaction construct persist in the literature. The term has most commonly been described as an affective attitude or orientation on the part of individuals towards their jobs (Lawler, 1977). Despite the variation in definition current theorists appear to be in agreement that job satisfaction is a multidimensional phenomenon and is a function of the job content, the job context, and the individual (Landy & Trumbo, 1980; Longest, 1974).

Although a single comprehensive theory of job satisfaction does not appear to exist at this time a number of theories have been advanced which possess significant explanatory power (Steers & Porter, 1979). These models may be viewed as complementary rather than contradictory in that they incorporate different variables and account for various interactive effects among the variables (Steers & Porter, 1979; Wanous & Lawler, 1972).

Theories in current use can be divided into two categories: process theories and content theories (Campbell, Dunnette, Lawler &

Weick, 1970). Content theories identify those needs or values believed to be most conducive to job satisfaction (Gruneberg, 1979; Locke, 1969). Maslow's need hierarchy theory and the two factor theory proposed by Herzberg, Mausner, and Snyderman (1959) are representative of this approach. Both of these models, which are based on needs theory, have had a significant impact on the investigation and understanding of work attitudes (Gruneberg, 1979).

The essence of needs theory as it relates to job satisfaction is that the latter is a function of the extent to which individual needs are met by characteristics of the job (Seiler & Williams, 1972). Although work environment variables are taken into account in these models, the emphasis is placed on characteristics of the individual.

The need-satisfaction model is the theoretical framework most commonly employed in the study of job satisfaction (Gruneberg, 1979; Salancik & Pfeffer, 1977). Maslow's theory, since its formulation, has served as one basis for job satisfaction research, and has provided an explanation for human motivation in which needs are related to general behaviour (Wahba & Bridwell, 1976). Maslow (1954) postulated that man has five classes of needs which are ordered in an ascending structure from physiological to security, social, esteem, and ultimately self-actualization. Only when lower order needs are satisfied, at least in part, will higher-level needs emerge. Although the theory was not developed for the purpose of explaning job satisfaction it has been used extensively to that end (Gruneberg, 1979). Moreover, it has been employed in the development of more complex models intended to better explain the job satisfaction phenomenon.

A second theory which has strongly influenced the direction of job satisfaction research is the two factor theory postulated by Herzberg et al. (1959). The theory asserts that a qualitative difference exists between the determinants of job satisfaction and job dissatisfaction. According to Herzberg et al. (1959) these phenomena represent two mutually exclusive domains, and do not exist as opposite ends of a bipolar continuum.

The dual factor theory like all need theories founded on the assumption that individuals possess certain innate needs which must be satisfied (Landy & Trumbo, 1980). Herzberg (1959) classified these needs in two categories and defined them as motivator and hygiene factors. Motivator factors are those variables which arise from the content of the work and are intrinsic to the work itself. These factors are considered satisfiers and include achievement, recognition, responsibility, growth, and advancement. In contrast, hygiene factors are associated with dissatisfaction and refer to job context variables or the extrinsic aspects of the job such as supervision, interpersonal relationships, and working conditions.

In effect, Herzberg's categories compressed the five level need hierarchy of Maslow (Munson & Heda, 1974; White & Maquire, 1973). The motivators are comparable to Maslow's higher level needs whereas the hygiene factors correspond to the lower level needs. Herzberg (1959) postulated that since the hygiene factors were related to basic needs they did not allow for psychological growth and therefore did not fulfill employee needs relevant to work satisfaction.

In essence, Herzberg et al. (1959) viewed job satisfaction as

a dichotomous rather than continuous variable. The dual-factor theory thus generated a substantial amount of research and evidence has been presented which both supports and refutes the hypothesis (Bass & Barrett, 1981; Carroll, 1973; Gruneberg, 1979).

The most common critique of Herzberg's work centers on the methodology. The theory appears method-bound, that is, use of the critical incident technique is necessary to confirm Herzberg's findings. The use of other data collection procedures fails to verify the theory (Landy & Trumbo, 1980; Locke, 1976; Korman, 1971; Mitchell, 1979; Neumann, 1972). Further criticism has been directed at the lack of consistency with which the theory has been stated. King (1970) asserts that no less than five separate versions of the theory have been reported in the literature.

While the two-factor theory is not without limitation, Herzberg (1959) and his colleagues made a major contribution to the study of job satisfaction by their emphasis on the importance of intrinsic factors in the development of job satisfaction. Unlike earlier theorists such as Mayo (1933) who emphasized human relationships as the sole determinant of job satisfaction, Herzberg (1959) re-focused attention on the work itself. Although most studies have not supported the hypothesis that the sources of job satisfaction and job dissatisfaction are separate and distinct, many researchers are in agreement that motivator factors are of greater importance than hygiene factors as determinants of both job satisfaction and dissatisfaction (Gruneberg, 1979; Warr & Wall, 1975).

In contrast to the content theories exemplified by the work of Maslow (1954) and Herzberg et al. (1959), process theories of job

satisfaction seek to explain the manner in which personal variables interact with job characteristics to produce job satisfaction. The equity and expectancy (instrumentality) theories fall into this category. Equity theory as described by Adams (1965) focuses on the relationship between personal characteristics such as tolerance for feelings of inequity, and organization characteristics such as reward practices. In essence, the degree of job satisfaction is determined by the similarity between an individual's expectations and the rewards offered by the job.

Whereas equity theory centers on personal and organizational variables, expectancy theory incorporates a third major set of variables, those pertaining to job characteristics. "Instrumentality theories hold that individuals choose to expend energy in situations that provide an opportunity to achieve a desired reward" (Landy & Trumbo, 1980, p. 381). Thus, motivation is related to three variables: expectation of reward, the value of reward, and the effort required to achieve reward.

Instrumentality and need theories differ in a number of respects, the most important of which is the emphasis on cognition. Whereas the need theories are centered on innate characteristics of the individual, expectancy theories recognize the cognitive processes underlying the individual's achievement of work rewards and ultimate work satisfaction (Landy & Trumbo, 1980; Steers & Porter, 1979).

The cognitive emphasis in the instrumentality theories has prompted several researchers to develop job satisfaction models based on this theory. One such conceptual framework which has been used extensively since its development is the model designed by Porter &

Lawler (1968). These investigators define satisfaction as a function of "the extent to which rewards actually received meet or exceed the perceived equitable level of rewards" (Porter & Lawler, 1968, p. 31).

Satisfaction is therefore viewed as a derivative variable and as such Porter and Lawler (1968) argued that a measure of satisfaction must include both an 'equitable' as well as an 'actually received' component. "Attitude instruments that simply ask the 'how satisfied are you with ___?' type of question obscure the operation of these two components" (Porter & Lawler, 1968, p. 170). Furthermore, Porter and Lawler (1968) contend that the psychological determinants and consequences of these two states probably differ and consequently require a two-part measurement of satisfaction. Accordingly, the instrument designed by these authors incorporates measures of the respondent's rating of available rewards as well as a rating of perceived equitable rewards.

The scale was constructed to measure satisfaction over five need areas - security, social, esteem, autonomy, and self-actualization. With the exception of the autonomy category the need areas were patterned after Maslow's hierarchy. The modification was defended by Porter (1962) on the basis of his assumption that contemporary organizations have satisfied physiological needs and the inclusion of this category is therefore unnecessary. Autonomy needs, defined in terms of independent decision-making, participation in goal-setting, and level of authority were considered much more relevant to current organizational employees and were thus incorporated in the instrument.

In addition to specifying the need areas believed to influence job satisfaction, the Porter and Lawler (1968) model also

postulated a distinction between the type of rewards sought by employees. Intrinsic rewards are those which satisfy the higher-order needs described by Maslow (1954) and which are ascribed to the individual by himself rather than by others (Landy & Trumbo, 1980). Intrinsic rewards are subjective and frequently relate to the content of a job. In contrast, extrinsic rewards are those administered by an external agent. They are derived from the work context and often are affixed to the position rather than the employee filling the position (Austin, 1978).

The job satisfaction literature has repeatedly suggested the existence of an intrinsic/extrinsic dichotomy in the nature of job satisfaction and the probability of a stronger relationship between intrinsic rewards and the motivation of professional workers (Austin, 1978; Everly & Falcione, 1976; Wernimont, 1966). Whether or not a particular reward category is consistently related to occupational level has not yet been determined. The inclusion of the dichotomy in the Porter and Lawler (1968) model allows for further investigation of this hypothesis.

In summary, it is apparent that understanding of the job satisfaction phenomenon is far from complete. Progress however, is evident in the movement from a unidimensional to multidimensional conceptualization of the construct. Moreover, models have gradually evolved which encompass multiple variables and have causal implications. Thus, while agreement is lacking concerning a single explanatory theory, the theoretical controversy has generated a number of perspectives from which to view job satisfaction and to better understand this work attitude.

METHODOLOGICAL ISSUES

The measurement of any construct presupposes a conceptual definition of the phenomenon to be studied (Locke, 1976). The multiplicity of definitions assigned to the concept of job satisfaction, and, conversely the failure to adequately define the variable have resulted in a range of conceptual alternatives and methodological variations.

The fundamental issue is conceptual. Until a comprehensive theory of job satisfaction applicable to diverse occupational groups is developed, varying methodologies will be employed for the measurement of this construct. The use of multiple measures has been described by several authors (Cheloha & Farr, 1980; Seashore & Taber, 1975). Smith et al., (1969) contend that if more than one aspect of some psychological process is thought to exist heterogenous measures should be used in order to reflect each aspect. They further assert that some constructs may not be adequately represented by a single operational measure due to their complex nature and the limitations of specific measures. It may be advantageous in these situations to use multiple measures in an attempt to obtain evidence for convergence on the construct. If different types of job satisfaction exist it would be reasonable to expect that different and noncomparable measures will be valid (Seashore & Taber, 1975). Although multiple operational definitions of a construct may be advantageous it is imperative that the empirical relationship between definitions be established (Breaugh, 1980).

The techniques employed for the collection of job satisfaction data are diverse and include inferential methods, critical

incident reports, ranking tasks, interviews, and ratings (Fournet, Distefano & Pryor, 1966; Korman, 1971; Wanous & Lawler, 1972). Of these techniques the rating procedure has been used most consistently and appears to offer several advantages (Ronan & Marks, 1973). In addition to allowing direct subjective estimates of each job attribute, it permits the use of a wide range of statistical analyses and the assessment of a scale's psychometric properties. For these reasons Ronan and Marks (1973) concluded that the rating procedure is the preferred technique for use in exploring the structure of job satisfaction.

In reviewing the various approaches to job satisfaction measurement Seashore and Taber (1975) classified the data obtained as primary or derived. Primary data were defined as the raw responses given by individual respondents to a series of questions. This type of data was further described as facet-free or facet-specific. The former are obtained when respondents are asked to provide a global rating of job satisfaction without advance specification of the facets to be considered. Facet-specific data, on the other hand, are obtained when respondents indicate their satisfaction with distinct job attributes. The operational strategies employed to obtain these data vary according to underlying theory and may take the following forms: a) the amount of the facet provided by the job (is now); b) the amount of the facet the respondent would like to receive (would like); c) the amount of the facet the respondent believes should be provided (should be); and d) the importance of the facet to the respondent (importance).

A limitation of facet-specific measures is the control of

the investigator over the range and number of facets included in the instrument. There is an apparent lack of agreement among theorists concerning the domain of relevant facets to be sampled (Seashore & Taber, 1975). The consequent variation in facet selection and definition has contributed to the inconsistent results obtained in this field of research. The formulation of an inclusive definition of relevant facets and the appropriate sampling of this domain would improve content validity and would facilitate the comparison of results across studies.

It is important to note that some confusion is occasionally apparent in the literature concerning the distinction between "facets" or components of job satisfaction, and the "dimensions" of the construct. Facet data may be ascribed to factors or dimensions on either a theoretical or empirical basis. "The former reflects the designer's intentions or interpretations with respect to the meaning of facet items, and the latter reflects the empirical statistical clustering or factorial weights of the items" (Seashore & Taber, 1975, p. 338). Therefore facets may or may not equate with dimensions. It has yet to be established whether facets reflect multidimensionality or are simply a contributing source to a unidimensional factor labelled as job satisfaction.

The second classification of job satisfaction data identified by Seashore and Taber (1975) was defined as derived data. As the name implies these data evolve from primary data and include factor scores as well as additive, multiplicative, and discrepancy scores. Both subtractive and multiplicative models conceptualize job satisfaction as a direct function of the extent to which the work

environment is congruent with an employee's need structure (Korman, 1971).

The subtractive or discrepancy model has been widely employed to assess job satisfaction. Most commonly, investigators elicit respondents' attitudes regarding a number of job attributes via a rating scale. A priori it has been decided that two of the question formats are conceptually linked. The construct is then purportedly measured by subtracting one of these linked ratings from the other. The support offered for this statistically unreliable approach is the supposed sophistication of the derived score as opposed to a direct measure. The rationale underlying the use of difference scores is the implication of "a rational self-assessment of feeling" (Wall & Payne, 1973, p. 326) and the idea that "a discrepancy value more nearly reflects the positive or negative feeling state of the respondent" (Ronan & Marks, 1973, p. 8).

The use of difference scores in organizational behaviour research has persisted in spite of the concerns expressed by several authors regarding problems associated with this measurement technique (Werts & Linn, 1970; Wall & Payne, 1973; Cronbach & Furby, 1970). These problems include potential unreliability, systemic correlation with the components, spurious correlation with other variables, and the psychological constraints influencing the response format (Johns, 1981; Wall & Payne, 1973). Foremost among these limitations is the questionable reliability of a difference score which is a function of the correlations, variances, and reliabilities of the component scores. Accordingly, the reliability of the difference score is unbiased only when the correlation between the component parts is zero

(Johns, 1981). When a positive correlation exists between the components the difference score reliability is attenuated; when the correlation is negative the reliability is magnified. It is unlikely that the component scores will be uncorrelated due to the subjects' general response style and the psychological tendency for subjects not to rate the "should be" item less than the "is now" item (Johns, 1981; Wall & Payne, 1973).

Difference scores have been criticized not only on the basis of reliability but also on the basis of validity.

> The claim that an index (such as a difference score) has validity as a measure of some construct carries a considerable burden of proof. There is little reason to believe, and much empirical reason to disbelieve, the contention that some arbitrarily weighted function of two variables will arbitrarily define a construct (Cronbach & Furby, 1970, p. 79).

It is inadequate for researchers to claim that a difference measure is construct valid by virtue of the fact that the component measures have been reported as such. Rather, it is incumbent upon investigators using this methodology to demonstrate that a distinct construct is measured by the difference score which is separate from the constructs measured by the component parts (Wylie, 1974; Johns, 1981).

It would seem apparent from the foregoing discussion that the difference score cannot and should not be viewed as more than the sum of its parts. Unfortunately, this conclusion has not been reached by many researchers to date and the persistence of this methodological approach is evident throughout the literature.

The multiplicative model, like the discrepancy model, has been widely used and has provoked a certain degree of controversy. The issue pertains to the use of importance ratings (the personal importance attached to a job characteristic) as necessary components of job satisfaction measures.

The use of importance weights has been refuted on both theoretical and empirical grounds. Conceptually, many theorists assert that importance is included in, and reflected by, the satisfaction ratings (Lawler, 1977; Locke, 1969; Smith et al., 1969). Thus, it is redundant to further weight this score by a separate measure of importance. Empirical evidence to support this contention has been provided by a number of studies in which neither the psychometric properties of the scale nor the correlation of the scale with other variables were improved when importance weighted measures were used (Smith et al., 1969; Wanous & Lawler, 1972).

Other theorists have argued that the above position is unreasonable if an attitude such as job satisfaction is believed to possess the four components of direction, magnitude, intensity, and salience described by Scott (1969). Given these criteria, emphasis by organizational theorists on magnitude and direction only would seem unwarranted (Evans, 1972).

A conclusive answer to the measurement question as it pertains to job satisfaction theory has not been determined. The fundamental prerequisite to future progress in this area is an evaluation of the convergent and discriminant validity using the methodology prescribed by Campbell and Fiske (1959). Evidence of convergent validity is obtained when two maximally different measures of the same

construct are found to be highly correlated. However, the establishment of convergent validity alone is not sufficient; the related issue of discriminant validity must also be addressed. Campbell and Fiske (1959) asserted that "in order to estimate the relative contributions of trait and method variance *more than one trait* as well as *more than one method* must be employed in the validation process" (p. 274). Only when both convergent and discriminant validity are assessed can the variance attributed to the construct of interest be separated from the variance of other traits and the methods used for measurement.

In view of the preceding discussion it is apparent that an evaluation of the research pertaining to job satisfaction must be undertaken within the constraints imposed by theoretical and methodological uncertainties.

JOB SATISFACTION IN NURSING

A review of the nursing literature pertaining to job satisfaction suggests that the topic has been one of prime interest to both nurses and administrators for several decades (Diamond & Fox, 1958; Nichols, Springford, & Searle, 1981; Plawecki & Plawecki, 1976; Stember, Ferguson, Conway & Yingling, 1978).

Viewed in economic terms, nurses account for a significant proportion of manpower expenditures within health care institutions. The relationship between nurses' work attitudes and such costly concerns as absenteeism, turnover, and decreased productivity underscores the importance of obtaining valid information about this phenomenon.

Although the economic implications of nurses' job satisfaction are significant, of greater import is the probable influence

of work attitudes on the quality of patient care (Myrtle & Robertson, 1979; Weisman et al., 1980). The finding of a positive relationship between job satisfaction and nursing performance suggests the salience of this topic for both the employee and the organization (Weisman et al., 1980). Unfortunately, while the literature reveals an abundance of personal opinion concerning this subject there is a lack of empirical data in comparison to other occupational groups (Benton & White, 1972; White & Maquire, 1973).

An evaluation of the research that has been undertaken reveals a gradual evolution over the past four decades in the research focus and design as well as the sample size and composition.

The initial attempts to empirically determine the degree of nurses' job satisfaction were undertaken approximately forty years ago (Nahm, 1940). An underlying concern in these studies was the escalating turnover rate among nursing personnel (Fletcher, 1957; Maryo & Lasky, 1959). As the problem was most evident in acute care facilities the focus of investigations was predominantly on hospital employees (Bullock, 1953; Wright, 1957). In general, these studies were intended to assess the level of work-related satisfaction attained by non-supervisory nursing personnel. Like the industrial research of that period they were characterized by a practical productivity-related focus and a unidimensional view of the job satisfaction construct (Slavitt et al., 1978).

While the purpose and setting of the investigations were comparable across studies, the design and methodology of the research varied considerably. Data collection techniques ranged from interviews to questionnaires. In the latter instance both self-developed

instruments, and questionnaires originally designed for use in industrial-based research were employed (Fletcher, 1957; Grivest, 1958).

For the most part, the satisfaction construct was not well-conceived and the research lacked a theoretical orientation. There were however, some exceptions, notably the work of Grivest (1958), Nahm (1940), and Pickens and Tayback (1957). The latter investigators applied the definition and instrumentation developed by Hoppock (1935) in an attempt to evaluate the determinants of nurses' job satisfaction. In a slightly different approach, Grivest (1958) utilized an inventory developed by the Science Research Associates (1952) to elicit nurses' attitudes toward their work. This scale reflected the view that human relations were the focal determinant of work satisfaction. Grivest's study is one of the few during this period to specify the reliability of an instrument and to suggest perhaps a rudimentary concern with validity.

In general, the data reported in this era of research indicated a moderate to high level of job satisfaction among nursing staff (Bullock, 1953; Grivest, 1958). Despite the variation in methodologies and study samples, some consistency in the findings was apparent. For both public health and hospital nurses, certain factors were repeatedly found to exert a strong influence on job satisfaction i.e., interpersonal relationships, opportunities for advancement, and opportunities for professional growth and development (Diamond & Fox, 1958; Fletcher, 1957; Nahm, 1940; Pickens & Tayback, 1957).

The results obtained by these early researchers underlined the importance of examining nurses' work attitudes and the need to further explore this phenomenon. In consequence the volume of research

addressing this topic has gradually expanded. However, in comparison to the data available from the industrial and business sectors, substantive information specific to nursing personnel has remained limited. As investigators have attempted to fill this gap not only the volume but the pattern of job satisfaction research has changed. Foremost among these changes has been the trend toward facet-specific measurement rather than the use of single overall measures to evaluate nurses' job satisfaction.

This fundamental shift in the conceptualization of job satisfaction has influenced both the design and the purpose of recent studies. Whereas the intent of early research was the simple global measurement of satisfaction, contemporary investigators are not only exploring the underlying structure of the construct but are also examining possible antecedents and consequences of this phenomenon (Angus, 1979; Bechtold, Szilagyi, & Sims, 1980; Burton & Burton, 1982; Cleland et.al., 1976).

In addition to the changes in research focus, a review of the recent literature reveals the introduction of new and increasingly complex methodologies. The simple tabulation of frequencies has been replaced by the more sophisticated analytical techniques of factor analysis and multivariate analysis of variance (Everly & Falcione, 1976; Newman, 1972; Parasuraman, Drake, & Zammuto, 1982). These changes in data analysis reflect a movement away from simple bivariate correlation studies toward multiple variable analyses of the interactive effects of organizational and personal variables.

Improvements in methodology and design have also permitted the generalization of research findings. In contrast to early in-

vestigations which were characterized by small sample size, the recent introduction of large scale studies incorporating data from multiple institutions and nursing specialities, has allowed investigators to generalize their results beyond the study respondents (Godfrey, 1978; Gulach, 1982; Wandelt, Pierce, & Widdowson, 1981).

Although the improvements in methodology have been substantial, the most significant development in this body of research has been the introduction of a theoretical orientation. While this approach to the assessment of nurses' work attitudes is limited, there is some evidence in the literature of attempts to study job satisfaction within a theoretical framework (Hall, Von Endt, & Parker, 1981; Redfern, 1980).

A number of researchers have employed Herzberg's (1959) dual factor theory to evaluate the determinants of work satisfaction (Longest, 1974; Ullrich, 1978). The study samples have ranged from new graduates (Cronin-Stubbs, 1977) to nursing supervisors (White & Maquire, 1973) and, as found in the industrial sector, the results have been equivocal. That is, the data both support and refute Herzberg's bipolar conception of job satisfaction. Unfortunately, further study using the multitrait-multimethod approach recommended by Campbell and Fiske (1959) has not been undertaken. The application of this methodology might well have explained the discrepancies among research findings and provided an answer to the frequent criticism that Herzberg's theory is method-bound.

A second theoretical model frequently employed by nursing investigators is that of Porter and Lawler (1968) who viewed job satisfaction as a function of existing work rewards mediated by the

employees' perception of equity. Researchers have employed this framework for a variety of purposes including instrument development (Munson & Heda, 1974), comparison of the effects of nursing service delivery systems (Carlsen & Malley, 1981), determination of head nurses' influence on satisfaction (Rozell, 1977), and the correlation of satisfaction with personal and organizational variables (Benton & White, 1972; Munson & Heda, Sheridan, Slocum & Susman, 1972).

While the measurement of job satisfaction within a theoretical context has been a notable advance, a major deficiency persists in the failure of researchers to address the issue of reliability and validity. Whether using self-developed instruments, or tools designed for use with other occupational groups, the fundamental question of instrument validity has largely been ignored (Imperato, 1972; Nichols, 1974; Longest, 1974; Walker & Madsen, 1981). The definitive approach to construct validation, that is, the measurement of more than one trait using more than one method to demonstruate convergence and discriminability has not been employed by nursing researchers. Application of this model is essential if the best method of validly measuring the job satisfaction construct is to be determined. Without valid instrumentation, substantive conclusions cannot be reached concerning the organizational attitudes and behaviour of nurses. The prerequisite for improved understanding of any attitude is the reliable and valid measurement of the construct under study (Schwab, 1980).

Failure to cross-validate measures of nurses' job satisfaction has hindered the comparison of findings. Despite the conceptual and methodological variation however, a commonality is apparent

in the data. Determinants of job dissatisfaction consistently reported by all categories of nurses are those factors thought to interfere with fulfillment of the professional nursing role (McCloskey, 1974; Wandelt et al., 1981). Wandelt (1980) and her colleagues concluded from their extensive survey that "nurses are dissatisfied in situations and agencies where structure and process elements are poorly defined and integrated" (p. 5), and in which the nurses perceive the outcome to be care of poor quality. Process refers to the elements that define the role of the nurse as a professional, whereas structure pertains to the organizational context within which nursing care is administered. Structural variation is extensive within hospitals and appears to influence both the level of work-related stress and the satisfaction experienced by employees (Leatt & Schneck, 1980; Leatt & Schneck, 1982; Wandelt et al., 1981). Job dissatisfaction arises when nurses perceive the work environment to be incompatible with professional nursing practice.

Unfortunately, the discrepancy between hospitals' expectations and nurses' views of their professional role has persisted for several decades (Georgopolous, 1972). Factors repeatedly associated with dissatisfaction include, lack of administrative support, inadequate staffing, and lack of opportunity for advancement. Conversely, factors viewed as professional perogatives such as autonomy, participation in decision-making, and educational opportunities were those found to consistently promote work satisfaction (Godfrey, 1978; McCloskey, 1974; Wandelt et al., 1981).

The adverse consequences of nurses' job dissatisfaction in both economic and job performance terms points to the importance of

further research. However, progress in this area will be contingent upon the ability of investigators to validly measure the job satisfaction construct.

SELECTED CORRELATES OF JOB SATISFACTION

The preponderance of job satisfaction research has been correlational in nature (Locke, 1976). Both individual and organizational characteristics have been examined. Three variables which have repeatedly demonstrated an inverse relationship to job satisfaction are role ambiguity, turnover, and absenteeism.

Role Ambiguity

Role theory has been used extensively as a conceptual framework for the examination of individual behaviour within organizations (Schuler, Aldag, & Brief, 1977; Van Sell, Brief, & Schuler, 1981). As proposed by Kahn (1964) and his associates, the theory postulates that employee stress results from conflicting, incompatible, or unclear expectations derived from the work environment.

The role concept defined within an organizational context refers to "the expectations applied to the incumbent of a particular position, by the incumbent, and by the role senders within and beyond the organization's boundaries" (Van Sell et al., 1981, p. 43).

Roles may be considered functional or dysfunctional for both the organization and the employee. One dysfunctional dimension experienced by many employees has been identified by Kahn et al. (1964) as role ambiguity. This form of role stress occurs "when individuals confront single or multiple roles that are not clearly articulated in terms of behaviours or performance level expected" (Van Sell et al.,

1981, p. 44). In essence role ambiguity exists when pertinent role information is unavailable to the role occupant.

The salience of examining the role ambiguity construct lies in its relationship with organizational attitudes and behaviour. Accordingly, numerous studies have been designed which explore possible antecedents and consequences of this phenomenon. The latter approach has included the assessment of both affective and objective correlates including turnover, absenteeism, job performance, and job satisfaction (Johnson & Stinson, 1975; Keller, 1975; Miles, 1976; Miles & Petty, 1975; Schuler, 1975). The findings have revealed that a more consistent relationship exists between role ambiguity and attitudinal variables than exists between role ambiguity and behavioural work outcomes (Van Sell et al., 1981).

The theoretical propositions originally specified by Kahn (1964) and his colleagues concerning role ambiguity have been supported by an expanding body of empirical research (Szilagyi, Sims, & Keller, 1976). In particular, the accumulated data uphold the initial hypothesis of an inverse correlation between role ambiguity and the attitudinal variable of job satisfaction. This finding has been consistent across diverse occupational samples and suggests that employees' work attitudes are negatively influenced by the existence of uncertainty regarding role behaviour.

Three organizational characteristics have been identified which contribute to this situation: organizational complexity, rapid organizational change, and inadequate communication patterns (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). Since these conditions are not uncommon in hospitals a number of investigators have chosen to

examine the role ambiguity phenomenon in this setting (Brief et al., 1979; Lyon & Ivancevich, 1978; Mossholder, Bedeian & Armenakis, 1981; Randolph & Posner, 1981; Szilagyi et al., 1976).

Organizational theorists have displayed a particular interest in hospitals due to the unique character of their structure and the consequent creation of atypical role relations among employees (Szilagyi et al., 1976). Hospitals are viewed as complex organizations characterized by frequent changes in technology and personnel which alter social structures and disrupt communication patterns (Georgopolous, 1972; Lyons, 1971; Posner & Randolph, 1979). Furthermore, it has been noted that hospitals have traditionally shown less interest in employees' psychological well-being than in the technological aspects of the work environment (Georgopolous, 1972). Given these organizational characteristics, the perception of role ambiguity among hospital employees is not unexpected and has been documented in several studies (Bedeian & Armenakis, 1981; Brief et al., 1976; Lyons, 1971).

The occupational group most frequently studied within the hospital setting is the registered nursing staff. A growing body of research has focussed not only on the extent of role ambiguity among nurses but also on its relationship to job satisfaction. Successive studies have demonstrated an inverse correlation between these two constructs when measured in hospital-employed nurses (Mossholder et al., 1981; Posner & Randolph, 1980; Redfern, 1980; Seybolt, 1980). The findings suggest that when role-related information is not available or clearly communicated, role ambiguity and job dissatisfaction are experienced.

Turnover

Employee turnover is a topic of both practical concern and theoretical interest to industrial psychologists. Increased recruitment and training costs, decreased productivity, and disruption in the social dynamics of an organization constitute some of the negative consequences attributed to this phenomenon (Muchinsky, 1978). Accordingly, researchers have investigated a number of variables believed to be antecedents to withdrawal behaviour. Comprehensive reviews of this body of literature indicate that a consistent and inverse relationship between job satisfaction and employee turnover has been reported (Brayfield & Crockett, 1955; Herzberg, Mausner, Peterson, & Capwell, 1957; Mobley, Griffeth, Hand, & Meglino, 1979; Porter & Steers, 1973; Vroom, 1964). However, it has been noted that while the correlations have been consistent and statistically significant they have typically accounted for less than 16 percent of the variance (Locke, 1976).

Recently the study of satisfaction-turnover relationships has assumed new dimensions. To increase understanding of the employee withdrawal process and therefore improve the prediction of turnover, several investigators have developed multivariate models (Kraut, 1975; Mobley, Horner & Hollingsworth, 1978; Newman, 1974; Parasuraman, 1982). The essence of these models is the supposition that cognitive phenomena intervene between the emotional state of job dissatisfaction and the subsequent behaviour of withdrawal. This hypothesis is rooted in Fishbein's (1967) model of attitudes, intentions, and behaviour, and Locke's (1968) task motivation model which theorize that intention is the immediate precursor of behaviour. The use of behavioural intention as an output measure in preference to actual behaviour has been

commended by some investigators as "a means of shedding surplus variance arising from extraneous and uncontrolled influences while highlighting the volitional components of behaviour" (Nicholson, Wall & Lischeron, 1977, p. 501). Nicholson et al. (1977) have also cited a methodological advantage for the use of a measure of intent to leave, as opposed to a measure of actual termination. Namely, the frequency of termination for most employees is relatively limited and therefore requires longitudinal measurement. However, employees' evaluations concerning the likelihood of their withdrawal are frequent occurrences. This construct can therefore be examined on an individual basis and the intention - job attitude relationship explored in cross-sectional studies. Nicholson et al. (1977) have concluded that intent to leave measures could be used "not only as a more appropriate aspect of labour turnover to consider in relation to job attitudes, but also as more amenable to analysis on an individual basis" (p. 501).

The theoretical relationship of intent to leave and job satisfaction has been verified empirically in a number of studies (Kraut, 1975; Martin & Hunt, 1980; Mobley et al., 1978; Waters & Roach, 1979). Moreover, in those studies measuring both employees' propensity to leave as well as subsequent turnover, job satisfaction has been found to correlate more strongly with the intention to leave than with actual termination (Mobley et al., 1978; Waters & Roach, 1979).

It may be concluded from the research to date that measures of employees' intention to leave are more consistently related to employees' work attitudes than are measures of actual turnover. Furthermore, the literature indicates that the job satisfaction-intent to leave relationship is demonstrated for male and female employees

in both blue-collar and professional occupations (Kraut, 1975; Parasuraman, 1982; Schuler et al., 1977). The relationship has also been documented in studies of the nursing population (Mobley et al., 1978; Neuman, 1974; Redfern, 1980). However, there has been no direct comparison of married and single nursing employees. The likelihood that married female employees are less mobile and therefore have less propensity to leave employment has not been examined in the nursing population.

The relationship between work attitudes and various indicators of turnover has been confirmed in predictive, concurrent, and ex-post facto studies, across diverse occupational groups, with multiple attitudinal and behavioural measures (Muchinsky & Tuttle, 1979). Both overall and facet satisfaction measures support the inverse correlation between job satisfaction and turnover (Muchinsky & Tuttle, 1979; Porter & Steers, 1973).

Turnover indices used most frequently fall into four categories: length of service, crude turnover rates, stability-instability rates, and survival and wastage rates (Price, 1977). Length of service or tenure of employment although less sophisticated than other measures has been cited as one of the best predictors of actual termination and has been shown consistently to have a significant negative relationship with job satisfaction (Muchinsky & Tuttle, 1979; Price, 1977; Locke, 1976).

The impact of turnover and its relationship with job attitudes has not only been examined in the industrial and business sectors but also within the nursing population. The recent escalation of turnover rates among hospital nursing personnel has resulted in the

intensive analysis and evaluation of possible causal factors (Moores, Singh & Tun, 1983; Munro, 1983; Shoemaker & El-Ahraf, 1983; Ullrich, 1978; Wandelt et al., 1981; Weisman, 1982). In fact, the impetus for a substantial amount of the current research into nurses' job satisfaction stems from the attempts of hospital administrators to reduce nursing attrition.

As an occupational group, professional nurses have repeatedly been found to exhibit high turnover rates with some investigators reporting 64 to 75 percent voluntary turnover among those surveyed (Fournet, Distefano & Pryer, 1966; Seybolt, Pavett, & Walker, 1978). Early reviews of the nursing literature indicate that negative job attitudes were strongly related to nurses' resignations (Diamond & Fox, 1958). These findings are confirmed by contemporary studies in which a strong negative relationship between job satisfaction and turnover is documented (Price & Mueller, 1981; Seybolt et al., 1978; Seybolt & Walker, 1980; Redfern, 1980). This body of research has shown increasing sophistication and methodological rigor. The use of conceptual models and longitudinal designs has clarified understanding of the withdrawal process among nurses and provided strong empirical evidence for the satisfaction - turnover relationships reported in other occupational groups. The correlation is confirmed by both the intent to leave and duration of employment measures.

In summary, the prediction of withdrawal behaviour from an individual's work attitude has attracted widespread attention in the field of industrial psychology. Further understanding of the relationship between organizational attitudes and behaviour is dependent upon the acknowledgement by researchers of the conceptual complexity

of both constructs and the empirical complexity of their interrelations. Overall, the literature would seem to indicate the importance of job satisfaction as a central factor in employees' planned and actual withdrawal behaviour.

Absenteeism

The research literature pertaining to the withdrawal behaviour of employees has emphasized turnover and treated absenteeism with subsidiary interest (Steers & Porter, 1979). However, recent suggestions that the economic impact of absenteeism may be far more detrimental to an organization have given rise to renewed efforts to discover the antecedents of this phenomenon (Steers & Porter, 1979).

Bivariate correlations of absenteeism with organizational and/or attitudinal variables have characterized the bulk of absenteeism research (Breaugh, 1981; Muchinsky, 1977; Steers & Porter, 1979). Of the attitudinal constructs frequently measured, job satisfaction has consistently and repeatedly been found to have an inverse relationship with absenteeism (Porter & Steers, 1973). Indeed, the satisfaction-absence relationship has been one of the more widely researched topics in industrial psychology (Cheloha & Farr, 1980). No less than four major reviews of the literature conducted over the past forty years have confirmed this finding (Brayfield & Crockett, 1955; Herzberg et al., 1957; Muchinsky, 1977; Porter & Steers, 1973). Although exceptions were noted, the reviewers concluded that the data as a whole supported the underlying hypothesis that employees who were satisfied with their work environment and job characteristics had a strong desire to attend work.

Within the nursing population, turnover has been studied extensively but few investigators have studied the conceptually related phenomenon of absenteeism. This fact is somewhat surprising given the probable influence of absenteeism on cost containment and the quality of nursing care (Myrtle & Robertson, 1979). Moreover, the finding that absenteeism is predictive of turnover (Lyons, 1972; Waters & Roach, 1979) has profound implications for increasing staff retention if these findings can be replicated within the nursing population.

Myrtle and Robertson (1979) contend that a high absenteeism rate within a nursing unit is symptomatic of deficiencies in either the organizational climate, the work team, or the work content. Evidence available from studies of both blue-collar and white-collar workers in the industrial sector supports this contention and verifies the expected linkage between employee job satisfaction and work attendance (Garrison & Muchinsky, 1977; Hrebiniak & Roteman, 1973; Porter & Steers, 1973). Although studies of nurses' absenteeism are limited, the empirical data which are available support the negative correlation of absence behaviour with work attitudes (Jamal, 1981; Neumann, 1972).

In spite of variation in construct definition, the phenomenon of absenteeism has most often been operationalized as the frequency of withdrawal behaviour and measured accordingly (Hammer & Landau, 1981; Muchinsky, 1977). Support for this approach has been demonstrated in the work of Beaugh (1980) who evaluated multiple absence measures and found the frequency measure most reliable. It was considered more stable over time than a measure of total days absent, since it was less sensitive to a single extended period of withdrawal and more reflective of voluntary absenteeism.

Although the superiority of frequency measures has been affirmed, multiple definitions and measures of absenteeism are prevalent in the literature (Dalton & Perry, 1981; Fitzgibbons & Moch, 1980; Porter & Steers, 1973). Considerable variation is also evident in the time interval over which the data are obtained. Periods as brief as four months have been used by some researchers (Jamal, 1981), whereas others (Ilgen & Hollenbach, 1977) have extended their assessment over an interval of a year and a half. Hammer and Landau (1981) assert that three criteria: the organizational context, the behaviour pattern of the research sample, and the index of measurement should serve as guidelines for the selection of the appropriate interval.

A review of the satisfaction-absence literature reveals variation not only in absence measures but in satisfaction instruments as well. Some investigators (Metzner & Mann, 1953; Van Ze t & Kerr, 1953) utilized an overall measure of job satisfaction while others (Cheloha & Farr, 1980; Fitzgibbons & Moch, 1980) measured facet satisfaction. Both approaches demonstrated significant negative correlations. However, Waters and Roach (1971, 1973) and Newman (1974) found absenteeism to be differentially related to separate dimensions of job satisfaction. Their studies revealed significant negative correlations with the intrinsic facet but failed to establish a similar relationship between the extrinsic facet of job satisfaction and the absence haviour of employees.

As previously noted the absence research has been bivariate in nature and the development of empirically derived multivariate models specifying absence determinants has been limited (Fitzgibbons & Moch, 1980). Given this orientation of the research, little has been

discovered about the effect of intervening variables in explaining the consistent, but rather low, correlations between absenteeism and job satisfaction found throughout the literature (Hammer & Landau, 1981; Steers & Rhodes, 1978). Those models that have been formulated postulate that attendance motivation is determined by an employees' job satisfaction as well as various internal and external pressures to attend (Nicholson et al., 1976; Fitzgibbons & Moch, 1980; Steers & Rhodes, 1978). According to these models attendance is also influenced by the presence of competing demands outside the work setting. The possibility that the satisfaction-absence relationship is moderated in populations comprised of married female employees occupying multiple roles has not been extensively examined.

To date, the literature has largely assumed that job dissatisfaction is the primary cause of absenteeism. However, some investigators have failed to verify the satisfaction-absence relationship and have attributed their findings to conceptual and methodological uncertainties surrounding the absenteeism construct (Ilgen & Hollenbach, 1977; Nicholson, Brown & Chadwick-Jones, 1976). It would appear that further clarification of the relationship between organizational attitudes and behaviour is dependent upon the improved conceptualization of both phenomena, and an evaluation of the role of moderating variables.

MEASUREMENT THEORY

Reliability

Reliability is defined as "the accuracy (consistency and stability) of measurement by a test" (American Psychological Associa-

tion, 1966, p. 25). Accuracy in this sense is the ratio of true score to observed score variance (Kerlinger, 1973), and thus represents that proportion of test variance which is systematic rather than random.

An estimate of random or measurement error variance may be derived from a number of statistical techniques. The majority of reliability analyses center on the sampling of items, time, or observers as the sources of error (Schwab, 1980). The reliability coefficient obtained thus reflects the equivalence, homogeneity, or stability of an instrument. Selection of the appropriate technique is guided by the nature of the data and the researcher's interest in knowing the stability of various sources of variation.

A statistical model which is pertinent to the construct examined in this study is Cronbach's (1951) alpha. The alpha coefficient is the degree of internal consistency or homogeneity of a test and reflects the degree to which a single construct has been measured (Ferguson, 1976).

Even though the reliability estimate is considered an indicator of consistency, it is only a measure of stable variance and may include systematic, stable contamination. Consequently, reliability is considered a necessary but not sufficient condition to ensure the validity of an instrument.

Validity

Validity is the essential concept in measurement theory and has been defined by Thorndike and Hagen (1961) as "the extent to which a test measures what we actually wish to measure" (P. 160). Methodologically, reliability reflects agreement between one or more measures

of the same attribut obtained by maximally similar methods, whereas validity pertains to the agreement of independent methods of measurement designed to measure the same attribute (Campbell & Fiske, 1959).

"Fundamentally, all procedures for determining test validity are concerned with the relationships between performance on the test and other independently observable facts about the behaviour characteristics under consideration" (Anastasi, 1968, p. 99). The specific procedures employed pertain to the assessment of four types of validity: face, content, criterion, and construct. In the following discussion each of these forms of validity will be discussed.

Face Validity

"Face validity refers, not to what a test necessarily measures, but to what it appears to measure" (Anastasi, 1954, p. 127).

In a critical review of the concepts of face validity Mosier (1967) concluded that three meanings were commonly attributed to the term: validity by assumption, validity by appearance, and validity by definition. Although superficially similar, Mosier (1967) cautioned that the implications of these meanings were widely diverse.

While expressing a number of reservations concerning usage of the term face validity, Mosier (1967) did acknowledge that validity by appearance was important. "It is highly desirable that a test possess not only statistical validity, but also, as an added attribute, the appearance of practicality" (Mosier, 1967, p. 218). Thus, the acceptability of a test by subjects as well as investigators is influenced by the extent to which it appears both practical and relevant for the purpose intended, and as such is worthwhile to establish.

Content Validity

"Content validity is the representativeness of sampling adequacy of the content - the substance, the matter, the topics - of a measuring instrument" (Kerlinger, 1973, p. 458).

A common methodological approach for obtaining content validity is the subjective judgements of individuals believed to be experts in the content area. These experts evaluate test items in terms of their representativeness of the sampling of the universe, and their relevance to the construct being measured (Kerlinger, 1973). The experts are guided in their judgement by a definition of the universe of content, and an explication of the rationale underlying the instrument (Kerlinger, 1973; Selltiz, Wrightsman, & Cook, 1976). A minimally acceptable level of agreement among a panel of independent judges for determining the retention of any one item must be established a priori (Hazlett, 1975).

The importance of content validity as a foundation of other forms of validity has been emphasized by Ebel (1979). Criterion (concurrent and predictive) and construct validation are viewed as a logical extension rather than an alternative to the subjective evaluation of an instrument's content.

Criterion-Related Validity

Criterion-related validity refers to the degree of consistency between a test score and an external variable or criterion (Kerlinger, 1973). The criterion provides "a direct and independent measure of that which the test is designed to predict" (Anastasi, 1968, p. 105). The relationship between test and criterion scores is com-

monly expressed as a correlation coefficient and provides an empirical estimate of the instrument's validity or the degree to which a predicted relationship is demonstrated in the study findings. The essence of this approach to validation lies in the utility of the instrument as a predictor rather than its ability to measure a specific theoretical trait. Campbell and Fiske (1959), however, have clearly shown that simple convergence (as indicated by a predictive relationship) is indeed insufficient unless appropriate discimination (divergence) can also be clearly established for those attributes which should not, theoretically, have any relationship.

Two forms of criterion-related validity have been identified: concurrent and predictive. The former refers to the relationship between test and criterion scores when both measures are administered simultaneously; the latter pertains to the correlation of scores when the criterion is measured at a later date (Mehrens & Lehmann, 1973). Although this distinction has been made on the basis of time relations between criterion and test measurement, Anastasi (1968) has emphasized that the term prediction may be "used in the broader sense to refer to prediction from the test to any criterion situation, or in the more limited sense of prediction over a time interval" (p. 105).

The essential but problematic aspect of concurrent and predictive validation is the identification of a valid criterion measure. Mehrens and Lehmann (1973) have described three characteristics considered desirable in these measures. First, the criterion should be relevant. Although this quality rests on a value judgement it is important to ascertain the degree to which the criterion reflects the ultimate criterion. Second, the criterion must

be reliable since validity is attenuated by the reliability of either the criterion or predictor measures. Lastly, the measure should be free from bias or contamination which occurs when the criterion score is unfluenced by knowledge of the predictor score; (in fact, Campbell and Fiske (1959) had earlier established this point by emphasizing the need for two or more independent methods of assessment before any validity estimate can be established).

Construct Validity

In their seminal work on construct validity Cronbach and Meehl (1955) defined a construct as "some postulated attribute of people assumed to be reflected in test performance" (p. 247). A construct is also implicitly defined by the network of propositions (nomological network) in which it occurs (Cronbach & Meehl, 1955). As such, a construct is necessarily a non-operationalized phenomenon, but one which has the most utility because of the inherent generalizability provided by the nomological network.

The purpose of construct validation is to determine the degree to which the construct, as defined in the nomological network accounts for the variance in test performance. This form of validity, because of its theoretical basis, is not "proven" or "verified" but rather supported or not supported by the test results (Polit & Hungler, 1978). In those instances where construct validity is lacking, the test and/or the underlying theory has to be questioned in the interpretation of results.

Several statistical techniques to estimate construct validity have been described (Cronbach & Meehl, 1955). Among these

techniques, factor analytic methodology is prominent in studies designed to assess organizational behaviour. Factor analysis is a descriptive procedure which identifies clusters of related variables. A series of measures are correlated and then factored by their common variance to determine the number of dimensions the test space occupies. When these common variances (dimensions) are interpretable given the construct of interest, a necessary but insufficient basis exists for supporting validation. The underlying dimensions or traits are referred to as factors and are linear combinations of the variables in the data matrix (Polit & Hungler, 1978). Factor analysis therefore, provides an empirical method for assessing the dimensionality of a measure, not unlike the use of alpha for establishing reliability. However, as indicated above, the model provides only necessary evidence, not sufficient evidence, for the establishment of construct validity.

Construct validity may also be assessed by comparing the test scores of contrasted groups (Anastasi, 1968; Cronbach & Meehl, 1967). Support for test validity is obtained when the results verify the researcher's expectation that the groups will differ. These expectations, of course, are based again on the theoretical underpinnings related to the construct and its associated effects.

SUMMARY OF CHAPTER

In this chapter, selected literature pertaining to the objectives of this investigation was reviewed. Following a description of the historical trends in research, a discussion of the current theoretical and methodological issues underlying the measurement of job satisfaction was presented. It was noted that a single preferred conceptual model or operational strategy for the measurement of the

construct is not evident in the literature. Furthermore, criticism has been directed toward the failure of researchers to assess the psychometric properties of instruments and it has been strongly recommended that the measurement of job satisfaction be more thoroughly explored. Future studies must be directed toward the validation of instruments using the multitrait multimethod strategy described by mpbell and Fiske (1959) if a definitive answer to the measurement question is to be found.

The assessment of job satisfaction as it pertains to nursing personnel was also reviewed and it was noted that the validity of instrumentation was infrequently evaluated. In those studies where researchers did estimate an instrument's validity, the procedure was limited to a monotrait monomethod approach.

The chapter concluded with a review of selected correlates of job satisfaction and a discussion of the principles of measurement theory.

The intent in this investigation was to validate a scale designed to measure the job satisfaction of nursing personnel. The following chapter contains a description of the instrument and the models employed to assess the validity of the measure.

CHAPTER III

METHODOLOGY

INTRODUCTION

The purpose of this study was to evaluate the validity of an instrument designed to measure the job satisfaction of nursing personnel. The data obtained from a pilot study were used to develop an instrument designed to reflect the intrinsic and extrinsic dimensions of the job satisfaction construct. Content, construct, and criterion-related validity of the instrument were assessed in order to estimate the apparent worth of the scale as a measure of these two facets and/or factors of job satisfaction. In this chapter the methodology employed to establish these three validity estimates is presented.

SUBJECTS OF THE STUDY

This study was restricted to the population of registered nurses employed by the Cross Cancer Institute, Edmonton, Alberta. The Institute is an active treatment hospital designed for the care of patients with malignant disease.

The study subjects included both staff and supervisory nursing personnel employed in various areas throughout the hospital. Both full-time and part-time nursing personnel were regarded as eligible for participation in the study. Part-time employees were defined as those who worked less than 37.5 hours per week (the normal work week for full-time employees).

Nurses employed at the Institute less than three months were excluded from the study on the assumption that valid evaluations of

job satisfaction and role ambiguity would not be obtained from this group.

INSTRUMENTATION

The questionnaire utilized in this investigation was designed to measure nurses' job satisfaction. Selected demographic variables as well as measures of role ambiguity, duration of employment, absenteeism, and intent to leave the organization were also incorporated so that the criterion and construct validity models suggested by Cronbach and Meehl (1955) could be used to determine the apparent validity of the job satisfaction measures.

As indicated in the literature review, no validity estimate can be established without the use of independent criteria. In this regard, this particular study is sound. However, it has also been noted (Campbell & Fiske, 1959) that independent methods, numbering at least two, must also be employed along with the use of more than one construct so that not only convergence but appropriate divergence can be established. In that this study has incorporated only one method (a pencil and paper survey instrument) this study is not sound. However, in that Cronbach's and Meehl's (1955) models f establishing necessary conditions for validity were done, this study design is justified. A priori, if the scale failed to meet at least the theoretical conditions laid out by these latter authors, there would be no need to pursue the sophisticated and costly measures required by the sufficient design described by Campbell and Fiske (1959). Of course if fruitful results were obtained, the need for this additional research would be apparent.

Job Satisfaction

The construct of job satisfaction has been studied within the context of various theoretical models (Korman, 1971; Locke, 1976). A trend toward increasingly complex models or the combination of models has become evident in the past two decades as investigators have recognized the complex nature of job satisfaction. To date, individual models have not been found to explain a substantial amount of the observed variation in job satisfaction (Smith et al., 1969). For this reason the model developed by Porter and Lawler (1968) which evolved from both need and expectancy theories was selected for use in this study.

The instrument employed to measure job satisfaction was based on the measure designed by Porter and Lawler (1968) and later modified by Munson and Heda (1974) for use in the hospital setting. A copy of the instrument is provided in Appendix I.

The modified instrument of Munson and Heda (1974) was comprised of four theoretical facets of satisfaction. The intrinsic category consisted of items which were conceptualized as satisfiers of self-actualizing needs. The second category, defined as extrinsic, contained those items related to the context of a job such as working hours and salary. Items pertaining to the satisfaction of ego needs were classified in the third category of involvement. The final category, defined as interpersonal, consisted of items reflecting satisfaction of the need to belong.

The format of the questionnaire was identical to the original Porter and Lawler (1968) measure. Twelve job attributes were listed and for each item or attribute a series of three questions were posed;

(a) How much is there now?; (b) How much should there be?; and (c) How important is this to you? Subjects were asked to respond to each question using a seven point rating scale. The ratings were then utilized to derive three separate scores. The response to question (a) was considered an evaluation of the goodness of job conditions. The (b) response minus the (a) response was defined as the measure of deficiency in job conditions, and this measure weighted by the (c) response was interpreted as the dissatisfaction score. Limited evidence to support the reliability and construct validity of the instrument has been presented by Munson and Heda (1974). Sufficient evidence, however, has not been demonstrated in that the convergent and discriminant validity of the scale was not assessed.

Pilot Work

In order to ensure the applicability of the instrument to the oncology setting as well as ensure the nurses' co-operation in completing the questionnaire some modifications of the scale and pilot testing of the same was undertaken. Whereas, the Munson and Heda questionnaire was composed of two parts - the first containing questions (a) and (b), the second containing question (c) - for the pilot study, part two was eliminated and all three questions were posed together. This change was intended to improve subject co-operation by reducing the apparent length and time required for completion of the questionnaire by the respondents. In addition, the range of the rating scales was reduced from seven to five in order to minimize the tendency toward a response-set (Guilford, 1954). For questions (a) and (b) the verbal descriptions of "none at all" and "maximum" were retained to anchor the extremes of the scale. For question (c) the

phrases "not important" and "most important" anchored the scale and replaced the individual descriptors (among the less important, of some importance, middle range of importance, among the more important, among the most important) used by Munson and Heda (1974).

A major investigation undertaken in the pilot study was the examination of Munson and Heda's scoring method. As previously discussed the use of difference scores may be considered highly questionable on the basis of diminished reliability. It is assumed that the responses to questions (a) and (b) would be correlated and therefore the difference measure would be unreliable. Consequently, the responses to questions (a) and (b) were instead used in a regression analysis to determine a residual score defined as the deviation of an observed Y from an estimated Y value. The discrepancy score was thus redefined as a residual score obtained by using the responses to questions (a) and (b) and the predicted response to question (b) to yield the residual score. That part of the (b) score which cannot be predicted using the (a) score is the residual.

All of the instrument modifications were precipitated by the nature of the research questions, and the desire to reliably measure job satisfaction in a nursing specialty not previously investigated.

On completion of the pilot study the construct validity of the instrument was assessed by means of factor analysis. The a priori assumption that the instrument measured four separate facets of job satisfaction was not supported. Instead, two factors emerged which were identified as intrinsic and extrinsic and appeared to relate to job content and job context factors respectively.

The finding that the factor solution did not replicate the

hypothesized facets of the instrument suggested that the facets converged or were inconsequential as key dimensions of the universe called job satisfaction. It was concluded that the broad categories of job content and job context may be relatively easier to measure than the more refined facets of interpersonal and involvement characteristics.

Since factor analysis of the pilot study data did not support an a priori postulate that four satisfaction dimensions (correlated or uncorrelated) existed, the questionnaire was accordingly reduced to focus in on two dimensions. To improve construct validity the instrument was reconstructed using factor loadings of each item on either of two dimensions found in the pilot study. Items with factors loadings less than 0.4 were replaced. Newly developed items were those most frequently documented in the literature as determinants of nurses' job satisfaction/dissatisfaction and were consistent with the hypothesized dimensions.

The revised instrument was designed therefore to measure two dimensions of satisfaction namely, intrinsic and extrinsic, and accordingly contained only items relevant to the job content and job context of nurses employed in a hospital setting. The format remained identical to that previously noted. For each job attribute, the series of three questions was posed and subjects were asked to respond on a five point rating scale.

Conceptually distinct measures of satisfaction/dissatisfaction were derived. First, satisfaction was operationalized as need fulfillment or the sum of responses to question (a) how much is there now? These scores are identified as A scores throughout the study. Secondly, dissatisfaction was measured as a residual score using the response to

question (a) to predict the response to question (b) as previously described. These scores are hereafter referred to as the B residual scores. The third scoring technique utilized in the study is the A scores weighted by the importance scores. The importance weighting was determined by the response to question (c) "how important is this to you?" These scores are referred to as the Weighted A scores. The final measure of satisfaction was a residual score obtained by predicting the response to question (a) using the response to question (c). These scores are referred to as the A Residual scores. The rationale for obtaining the A Residual score is the failure of organizational theorists to resolve the issue of importance weightings as previously discussed. The calculation of this score addresses the question by deriving a measure of need fulfillment not predicted by importance. That is, if importance weightings are redundant by virtue of the implicit weighting ascribed by the respondent, then the A Residual score will be free of that part of the A score influenced by importance.

Role Ambiguity

An instrument developed by Rizzo et al., (1970) was used to measure nurses' perceptions of role ambiguity. The scale developed by these investigators evolved from the earlier work of Kahn (1964) and his associates who proposed the existence of two separate dimensions of the role stress construct which they identified as role ambiguity and role conflict. Role ambiguity was operationally defined in terms of deficiencies in "(a) the existence or clarity of behavioural requirements serving to define role behaviour, and (b) the predictability of the outcome of one's behaviour" (House & Rizzo, 1972, p. 479).

The items comprising the instrument were designed to assess the subject's certainty about work duties, level of authority, allocation of time, relationships with others, as well as the clarity of organizational policies and the respondent's ability to predict behavioural outcomes (Rizzo et al., 1970).

The instrument consists of six items to which subjects respond on a seven point scale ranging from very false to very true. The arithmetic sum of responses (reverse scored) yields the total role ambiguity score.

The reliability and validity of the role ambiguity scale has been assessed and reported by several investigators (Breaugh, 1980; House & Rizzo, 1972; Schuler et al., 1977; Szilagyi et al., 1976; Keller. 1976). The most comprehensive examination of the scale's psychometric properties has been conducted by Schuler et al., (1977). These investigators evaluated the factor structure, test-retest and internal reliabilities, coefficients of congruency, and correlations with attitudinal and behavioural variables using diverse employee samples from four separate organizations. Internal consistency reliabilities exceeded 0.7 in all but one sample, which reflected the findings of numerous other studies (Bedeian & Armenakis, 1981; Posner & Randolph, 1980; Schuler, 1975). Moreover, coefficients of concordance for role ambiguity, the five facets of satisfaction, employee expectancies, and task characteristics lent support to the scale's construct validity as did the correlations between role ambiguity and the task characteristics and expectancy measures.

A modification of the instrument - the deletion of the sixth item - was undertaken in an attempt to improve the clarity of the scale.

Thus, possible scores for the modified five item measure ranged from five to thirty-five.

Intent to Leave

Recognition of the consistent relationship between job dissatisfaction and an employee's intention to withdraw from the organization has resulted in the widespread use of this variable in industrial research (Kraut, 1975; Martin & Hunt, 1980; Waters & Roach, 1979). While some variation in the measurement of this construct has been evident, most frequently respondents are asked to indicate, (via Likert scale) the probability of future voluntary termination from employment. References to future termination have ranged from two to five years, but regardless of the time period specified, consistent correlations with job dissatisfaction have been documented (Nicholson, Wall & Lischeron, 1977).

For the purpose of this study nurses' termination intentions were elicited by asking the subjects to indicate on a five point rating scale the likelihood of voluntary termination of their employment in the next three years. The time interval of three years was a modification of Kraut's (1975) original measure which specified a five year interval. However, the relatively high turnover rate within the nursing population as opposed to other occupational groups suggested the necessity of this change (Donovan, 1980).

Absenteeism

As suggested in the literature multiple measures of absenteeism were employed in this study (Breaugh, 1980; Cheloha & Farr, 1980; Muchinsky, 1977). Three measures - casual absence, general

absence, and the frequency of absence - were selected on the basis of their prevalence throughout the research literature and their demonstrated relationship to job satisfaction (Fitzgibbons & Moch, 1980; Jamal, 1981; Muchinsky, 1977).

Absence frequency was defined as the total number of absence periods over a one year interval. Casual absence was defined as the total number of hours absent, over a one year period, when the duration of each absence was three days or less. General absence was defined as the total number of hours absent over a one year period, when the duration of each absence was greater than three days.

The distinction between casual and general absence was based on the studied Institute's sick leave policy which stated that nurses who were absent periods of three days or less were not required to present a medical certificate. Casual and general absence may have reflected therefore the distinct entities of voluntary and involuntary withdrawal respectively.

The absenteeism measures were calculated following a review of each subject's work attendance record for the year preceding the study. For those nurses employed less than a year the absenteeism measures were prorated.

DATA COLLECTION

Permission was obtained from the Director of Nursing, Cross Cancer Institute to conduct the study.

The names and work locations of the study population were obtained from the Director of Nursing prior to the distribution of questionnaires. In order to correlate the individual satisfaction and

absenteeism data the questionnaires were coded numerically for identification purposes. Personalized questionnaires for each subject were distributed to the appropriate work setting. Included with the questionnaire was a covering lettter (Appendix II) which explained the purpose of the study and the importance of response, and also provided an assurance of confidentiality.

Participants in the study were selected on the basis of two criteria: tenure and nature of employment. Subjects were restricted to the registered nursing staff employed in supervisory and non-supervisory positions who had been employed in the study setting for greater than three months. All 102 subjects who met these criteria received questionnaires.

ESTABLISHMENT OF RELIABILITY

Cronbach's (1951) alpha coefficient, a measure of internal consistency, was used to determine the reliability of the job satisfaction instrument. Assuming that the questionnaire measured the multidimensional nature of the satisfaction construct one would expect the value of the alpha coefficient to be relatively low since the internal consistency may be interpreted as the degree to which an instrument measures a single trait (Ferguson, 1976). As such the alpha coefficient of each set of items intended to measure extrinsic and intrinsic factors of satisfaction was also calculated and adjusted for test length (via Spearman-Brown Prophecy Formula) so that comparisons could be made.

The reliability of the criterion measure, role ambiguity, was also assessed using Cronbach's (1951) alpha coefficient.

ESTABLISHMENT OF VALIDITY

Content Validity

Content validity was assessed by submitting the instrument to a panel of three experts for examination of the items with respect to clarity, ambiguity, ease of understanding, and relevance of the content. In addition, the panel was asked to comment on the representativeness of the items as they pertained to the hypothesized facets comprising the instrument. To facilitate this request the letter accompanying the questionnaire described the theoretical model underlying the instrument's format and categorized the items ascribed to each facet.

The panel was selected for their expertise in nursing and organizational behaviour, as well as their familiarity with the study setting. Each member was a registered nurse who possessed research experience. Two members held senior administration positions at the hospital studied, and the third member held an academic position in the Department of Health Services Administration, University of Alberta.

Two-thirds agreement as to the item's worth was requested as the a priori criterion for inclusion of questionnaire items.

Construct Validity

The statistical procedure of factor analysis was one technique used to estimate the construct validity of the job satisfaction questionnaire. The intent of this approach was to determine the extent to which the a priori conceptualization of job satisfaction corresponded to empirically derived factors. Both orthogonal and oblique techniques were employed in an effort to find the most interpretable solution. If the questionnaire measured the multidimensional job satisfaction construct as operationalized in this study a two factor

solution would be expected.

To further assess the degree of construct validity a one-way analysis of variance was employed to examine the mean differences between groups. Nurses employed in a supervisory capacity were expected to report a higher level of job satisfaction than staff nurses working on in-patient units.

Criterion-Related Validity

The degree of concurrent or predictive validity attributed to an instrument is derived from the correlation of that instrument's scores with a criterion. The essential, but problematic, aspect of this approach is the identification of reasonably reliable and valid criterion measures (Schwab, 1980). In this study, four measures were judged to be suitable: absenteeism, role ambiguity, intent to leave, and tenure or duration of current employment. These variables were selected on the basis of 1) their primarily objective nature, 2) their widespread use in empirical research, and 3) their documented psychometric properties.

To establish the degree of predictive validity of the job satisfaction questionnaire multiple regression analysis was employed. Each of the criterion measures was subjected to analysis with all of the job satisfaction scores. Factor scores were also subjected to a regression analysis to determine if these scores were more predictive of the criterion measures than the raw satisfaction scores.

SUMMARY OF CHAPTER

A questionnaire intended to measure job satisfaction, role ambiguity, intent to leave, employee tenure, and selected demographic

variables was distributed to supervisory and non-supervisory nursing staff at the Cross Cancer Institute.

A modified form of the job satisfaction instrument developed by Munson and Heda (1974) specifically for nursing personnel was utilized. Modifications were undertaken with a view to the study population, and on the basis of data derived from a pilot study. The content validity of the instrument was assessed by a panel of nursing personnel, and the criterion-related and construct validity were evaluated through the statistical techniques of multiple regression, analysis of variance, and factor analysis.

The results and interpretation of these analyses are contained in the following chapter.

CHAPTER IV

PRESENTATION AND DISCUSSION OF RESEARCH FINDINGS

INTRODUCTION

The purpose of this study was to estimate the degree of validity of a scale designed to measure the job satisfaction of registered nurses. The scoring format of the instrument provided three separate measures of job satisfaction, and one measure of job dissatisfaction each of which was examined in terms of its validity. Additionally, two subscores for each of the four scoring methods were also calculated, in order to examine the a priori postulate that the instrument yielded a two dimensional solution - i.e., extrinsic and intrinsic facet measures of job satisfaction.

The research findings and interpretation of data analyses related to these various investigations are presented in this chapter.

Characteristics of Respondents

Potential respondents had been identified as full-time or part-time staff in supervisory (excluding the Director of Nursing) or non-supervisory positions, and who had been employed in the study setting for greater than three months. These criteria were met by 102 subjects, each of whom received a questionnaire with a personalized covering letter sent to her at the work setting (cf. Appendix II).

Of the 102 potential respondents, 62 returned usable questionnaires, yielding a response rate of 61 percent (see Table 1). Twenty-one of the subjects were responsible for out-patient care and 29 were employed on in-patient units; the remaining 12 nurses in the sample held supervisory positions.

The largest proportion of respondents (41.9%) had five to ten years of full-time nursing experience. The length of nursing experience at the Institute ranged from six months to 14 years. Approximately 6 percent of the respondents had been employed two years or less, 27 percent had three to five years experience at the Institute, and 16 percent reported six to 14 years of employment.

Nine respondents held baccalaureate degrees, 48 were educated at the diploma level, and the remaining five had obtained other types of post-diploma education. Nurses employed part-time represented 45.2 percent of the respondents.

In response to the question concerning intent to terminate employment within the next three years, 1.6 percent of the respondents indicated that termination was a certainty, 19 percent thought it was probable, 22.6 percent were not sure, 40.3 percent indicated that they probably would not leave their present employment, and 16.1 percent were certain they would not terminate employment.

Further descriptions of the respondents' characteristics are outlined in Table 1.

Results of Statistical Analyses

Establishment of Content Validity

As noted in the preceding chapter, data obtained in the pilot study had been used to revise the questionnaire for use in this investigation. An interpretation of the factor analytic solution done on the pilot study data suggested that four satisfaction dimensions did not exist, but rather that the items appeared to relate to two dimensions identified as intrinsic sources and extrinsic sources of

TABLE 1
CHARACTERISTICS OF SUBJECTS

n = 62

CHARACTERISTIC		ABSOLUTE FREQUENCY	RELATIVE FREQUENCY PERCENT
AGE	20-29 years	30	48.4
	30-39 years	24	38.7
	40-49 years	7	11.3
	50 years and over	1	1.6
EDUCATION	RN	48	77.4
	BScN	9	14.5
	Other	5	8.1
EMPLOYMENT STATUS	Full Time	34	54.8
	Part Time	28	45.2
JOB SETTING	In-Patient	29	46.8
	Administration	12	19.3
	Other	21	33.9
DURATION OF CURRENT EMPLOYMENT	0-2 years	35	56.4
	3-5 years	17	27.4
	6-14 years	10	16.2
YEARS NURSING EXPERIENCE	0-4 years	24	38.7
	5-10 years	26	41.9
	11-26 years	12	19.3
INTENT TO REMAIN	Certainly	10	16.1
	Probably	25	40.3
	Not Sure	14	22.6
	Probably Not	12	19.3
	Certainly Not	1	1.6

job satisfaction. The questionnaire had been reconstructed therefore and items with factor loadings less than 0.4, dropped and replaced. Newly developed items (numbers 3, 5, 6, 7, 15, 16) were believed to be consistent with the two hypothesized dimensions and equalized the number of items ascribed to each factor of intrinsic and extrinsic satisfaction. Thus the revised instrument was comprised of 16 items which were categorized as follows:

Items reflecting intrinsic job satisfaction:

1, 2, 4, 7, 8, 13, 14, 16

Items reflecting extrinsic job satisfaction:

3, 5, 6, 9, 10, 11, 12, 15

This revised instrument was submitted to a panel of three judges for evaluation concerning clarity, redundancy, and relevance. There was complete agreement among the panel concerning the relevance of each item. All 16 items were regarded as focussing in on critical determinants of job satisfaction and/or dissatisfaction. The panel was also in complete agreement concerning the allocation of items to the intrinsic and extrinsic categories defined by the investigator.

The judges also agreed that the content of the items were representative of the universe of job satisfactic or nurses. One judge suggested an additional item for consideration but recognized that it might be specific to the study setting of this study. For this reason the item was rejected by the investigator.

Thus comments obtained from the three content experts who evaluated the pilot study instrument as well as the actual questionnaire utilized in this study suggested a reasonable degree of content validity was achieved.

Establishment of Reliability

The reliability coefficients for the job satisfaction instrument were estimated using Cronbach's alpha. For each of the scoring techniques employed, the following results were obtained:

A Scores (the sum of responses to the category of questions labelled (a) "how much of the characteristic is there now connected with your job?": 0.83191;

Weighted A Scores (the sum of the A scores after each was weighted by the response to question (c) "how important is this characteristic to you?": 0.82862;

A Residual Scores (that part of the question (a) response which could not be predicted using the response to question (c)): 0.82735;

B Residual Scores (that part of the question (b) response "how much of the characteristic should be connected with your job?" which could not be predicted using the response to question (a)): 0.78516.

Cronbach's alpha is a measure of unifactoredness or internal consistency, and the high coefficients obtained were suggestive that the satisfaction instrument was greatly influenced by a measure of one factor. Despite this however, the presence of weaker factors, and additional factors in the satisfaction scale, could not be rejected at this stage of analysis.

Given the a priori postulate that the questionnaire measured an intrinsic and extrinsic dimension of job satisfaction, the reliability of each set of these items was also calculated. The alpha coefficients of the assumed intrinsic and extrinsic items were obtained

for each of the four scoring techniques. Since reliability is a function of length, the Spearman-Brown Prophecy Formula was employed to adjust the calculated alpha coefficients to the total scale length (i.e., number of items was eight for each subscore but the adjustment assumed 16 items).

Intrinsic A Scores:	.8721592
Extrinsic A Scores:	.8023815
Intrinsic Weighted A Scores:	.8684902
Extrinsic Weighted A Scores:	.8217967
Intrinsic A Residual Scores:	.8379929
Extrinsic A Residual Scores:	.7523004
Intrinsic B Residual Scores:	.8719302
Extrinsic B Residual Scores:	.8192718

As described in Chapter III the questionnaire also contained a scale to measure the criterion variable, role ambiguity (See Appendix I, p. 145, section 2). Using Cronbach's alpha the reliability of the role ambiguity scale was estimated at 0.80459 which suggested a reasonably high degree of internal consistency.

Establishment of Construct Validity: Factor Analysis

To help estimate the construct validity of the questionnaire factor analysis was undertaken. This technique was employed to determine which, if any, of the four total scores could be considered a potentially valid measure of the satisfaction construct, first by determining if the derived factor solutions were interpretable, (were consistent with theory and other research) and second, by determining

if the strength of the derived factor(s) accounted for a reasonable proportion of variance.

The four total satisfaction scores (A, Weighted A, A Residual, and B Residual) were analyzed using orthogonal and oblique principal axis factor solutions. Initial analysis of the A and Weighted A scores produced five factors with eigenvalues (γ's) greater than one and which accounted for 65.3 and 63.7 percent of the variance respectively. However, in both cases only one factor had an eigenvalue greater than two indicating that possibly only one factor was really strongly present. On initial analysis of the A Residual and B Residual scores three factors with eigenvalues greater than one (accounting for 90.6 and 81 percent of the variance respectively) were produced but the size of the eigenvalues indicated that probably fewer factors were present. Thus for all these solutions factor analysis was repeated and solutions sought in which the number of factors were less.

The most interpretable solution for the A scores, Weighted A scores, and A Residual scores was found with a one factor solution. For the B Residual scores the most interpretable solution was a two factor orthogonal varimax rotation. Tables 2, 3, 4, and 5 contain these factor solutions for the A, Weighted A, A Residual, and B Residual scores respectively. Each factor solution for each of these scores is discussed separately.

A Scores

The one factor solution had an eigenvalue of 4.7280 and accounted for 29.6 percent of the variance in question (a) responses (see Table 2). Twelve of the 16 items had loadings greater than 0.4

TABLE 2

ORTHOGONAL ROTATED FACTOR MATRIX
A SCORES

ITEM NUMBER	VARIABLE DESCRIPTION	FACTOR I	COMMUNALITIES
1.	Professional Growth	0.602	0.363
2.	Share in Goal Setting	0.465	0.216
3.	Working Hours	0.352	0.124
4.	Utilize Skills and Abilities	0.564	0.318
5.	Supervision	0.321	0.103
6.	Co-operation of Co-Workers	0.241	0.058
7.	Authority	0.397	0.158
8.	Personal Accomplishment	0.549	0.302
9.	Educational Programs	0.511	0.261
10.	Physician-Nurse Relationship	0.520	0.270
11.	Nurse-Patient Ratio	0.474	0.224
12.	Recognition From Supervisor	0.500	0.250
13.	Determination of Procedures	0.485	0.235
14.	Accountability	0.557	0.310
15.	Advancement Opportunity	0.646	0.418
16.	Independent Judgement	0.639	0.408
	Eigenvalue (λ)		4.7280
	Per Cent of Total Variance		29.6

TABLE 3

ORTHOGONAL ROTATED FACTOR MATRIX
WEIGHTED A SCORES

ITEM NUMBER	VARIABLE DESCRIPTION	FACTOR I	COMMUNALITIES
1.	Professional Growth	0.522	0.272
2.	Share in Goal Setting	0.515	0.265
3.	Working Hours	0.429	0.184
4.	Utilize Skills and Abilities	0.498	0.248
5.	Supervision	0.262	0.069
6.	Co-operation of Co-Workers	0.236	0.056
7.	Authority	0.451	0.203
8.	Personal Accomplishment	0.499	0.249
9.	Educational Programs	0.443	0.196
10.	Physician-Nurse Relationship	0.508	0.258
11.	Nurse-Patient Ratio	0.572	0.327
12.	Recognition From Supervisor	0.511	0.261
13.	Determination of Procedures	0.605	0.366
14.	Accountability	0.536	0.287
15.	Advancement Opportunity	0.550	0.302
16.	Independent Judgement	0.605	0.367
	Eigenvalue (λ)		4.63757
	Per Cent of Total Variance		29.0

TABLE 4

ORTHOGONAL ROTATED FACTOR MATRIX
A RESIDUAL SCORES

ITEM NUMBER	VARIABLE DESCRIPTION	FACTOR I	COMMUNALITIES
1.	Professional Growth	0.606	0.367
2.	Share in Goal Setting	0.459	0.210
3.	Working Hours	0.303	0.092
4.	Utilize Skills and Abilities	0.581	0.337
5.	Supervision	0.361	0.130
6.	Co-operation of Co-Workers	0.247	0.061
7.	Authority	0.426	0.181
8.	Personal Accomplishment	0.552	0.305
9.	Educational Programs	0.474	0.225
10.	Physician-Nurse Relationship	0.517	0.267
11.	Nurse-Patient Ratio	0.390	0.152
12.	Recognition From Supervisor	0.501	0.251
13.	Determination of Procedures	0.444	0.197
14.	Accountability	0.467	0.218
15.	Advancement Opportunity	0.686	0.471
16.	Independent Judgement	0.669	0.448
	Eigenvalue (λ)		4.61839
	Per Cent of Total Variance		28.9

TABLE 5

ORTHOGONAL ROTATED FACTOR MATRIX
B RESIDUAL SCORES

ITEM NUMBER		FACTORS I	II	COMMUNALITIES
1.	Professional Growth	0.104	0.631	0.409
2.	Share in Goal Setting	0.595	0.157	0.379
3.	Working Hours	0.385	-0.033	0.149
4.	Utilize Skills and Abilities	-0.085	0.893	0.805
5.	Supervision	0.224	-0.023	0.051
6.	Co-operation of Co-Workers	0.334	0.179	0.143
7.	Authority	0.584	0.035	0.342
8.	Personal Accomplishment	0.348	0.398	0.380
9.	Educational Programs	0.034	0.469	0.221
10.	Physician-Nurse Relationship	0.479	0.276	0.305
11.	Nurse-Patient Ratio	0.428	0.2	0.247
12.	Recognition From Supervisor	0.546	0.084	0.305
13.	Determination of Procedures	0.517	0.253	0.331
14.	Accountability	0.291	0.056	0.088
15.	Advancement Opportunity	0.158	0.357	0.152
16.	Independent Judgement	0.507	0.374	0.397
	Eigenvalue (λ)	3.96514	1.85353	
	Per Cent of Total Variance	24.8	11.6	

and the grouping of these loadings was suggestive of a general factor which was defined as satisfaction with work. Items with loadings less than 0.4 (items 3, 5, 6, & 11) all pertained to extrinsic characteristics of the job or those components related to the work environment, as opposed to those aspects which define the general nature of a job. Although these items contributed less to the nature of Factor I than items with higher loadings, all 16 items did correlate positively. It was concluded that this one factor solution was the most readily interpretable and meaningful since multiple factor solutions were not interpretable beyond the first factor.

Weighted A Scores

Not unlike the factor solution for the unweighted A scores the most interpretable solution for the Weighted A scores was obtained from a one factor solution. The one factor solution had an eigenvalue of 4.63757 and accounted for 29 percent of the variance. Fourteen of the 16 items had loadings greater than 0.4. The pattern of loadings was comparable to the one factor solution obtained on analysis of the A scores and this factor also appeared to relate to a general factor which was termed satisfaction with work.

It was again noted that items with loadings less than 0.4 (item 5 - supervision, item 6 - co-operation of co-workers) pertained to the job context or work environment. It appears that contextual features of a job or those peripheral to the actual content of the job are perhaps less central to the determination of satisfaction with work than the job content. However, it must be noted that while the grouping of item loadings may suggest topical areas within the general factor, there is an internal consistency among most items.

A Residual Scores

Again the most interpretable factor solution for the A Residual scores was one factor. The factor had an eigenvalue of 4.61839 and accounted for 29.8 percent of the variance. Twelve of the 16 items had loadings greater than 0.4 and the pattern of loadings was again comparable to the one factor solution obtained in the A and Weighted A score analyses. Similar to the grouping of item loadings in the A and Weighted A analyses it was noted that items with loadings less than 0.4 (item 3 - working hours, item 5 - supervision, item 6 - co-operation of co-workers, item 11 - nurse-patient ratio) pertained to extrinsic features of the job.

The grouping of items in the A, Weighted A, and A Residual analyses were suggestive that distinct facets or contributors to the nonoperationalized construct of job satisfaction exist and vary in their centrality and influence on the dimension. However, given these above solutions, the existence of multiple facets or contributors to the construct did not indicate that job satisfaction had multiple dimensions. Rather these analyses supported a unidimensional conception of work satisfaction.

B Residual Score

Uniquely, a two factor orthogonal rotation was found to be the most interpretable solution for the B Residual scores. It must be remembered however, that these scores, unlike the A, Weighted A, and A Residual scores, were believed to be a measure of unmet needs or job dissatisfaction. The conceptual difference might explain in part this variation in the factor analysis results.

Factor I had an eigenvalue of 3.96514 and accounted for 24.8

percent of the variance. The pattern of item loadings, as in the previous factor analysis, again revealed a general factor which in this case was defined as job dissatisfaction. Factor II had an eigenvalue of 1.85353 and accounted for 11.6 percent of the variance. Items with the highest loadings on this factor (item 1 - professional growth, item 4 - utilize skills and abilities, item 9 - educational program) related to nurses' professional growth, and the factor was therefore defined as professional growth and development. It was noted that these items had frequently been reported in the literature as being of particular importance in the determination of nurses' job satisfaction/dissatisfaction. It was also noted in the literature that nurses' expectations concerning their jobs have changed significantly over the past decade and they now view these components as essential to their role as professionals.

In summary, three of four of the factor solutions were best approximated by a unidimensional factor solution. This result was not obtained in the analysis of the B Residual scores. For these latter scores, the first factor paralleled that of the single factor solutions in the A, Weighted A, and A Residual scores: the nature of Factor II was not consistent with the a priori postulate of intrinsic/extrinsic dimensions, nor with any of the four dimensions postulated by Munson and Heda (1974) who adapted the scale for the nursing population. Accordingly, this author has concluded that separate extrinsic and intrinsic dimensions are not measured by this present instrument, if in fact they exist at all as the two dimensional space called job satisfaction.

It is worthwhile to remind the reader that the one factor

solutions for the A, Weighted A, and A Residual scores were consistent with the corresponding calculated alpha coefficients, the interpretation of which suggested the scores were unidimensional.

Establishment of Construct Validity: Analysis of Variance

The apparent unidimensional nature of the construct measured by three of the four scoring techniques did not support the a priori postulate that the questionnaire measured a two dimensional satisfaction construct; but some evidence did exist that a strong general factor, thought to be satisfaction with work was present. As indicated by Cron[redacted]eh (1954), however, factor solutions are only partial [redacted]e (necessary but not sufficient) of construct validity. In that this study did not utilize the sufficient methodology of Campbell and Fiske (1959) to establish construct validity, some additional evidence was sought. To do this a one-way analysis of variance model was employed to investigate the presence of hypothesized differences given the assumption that the questionnaire was valid. Specifically these analyses were conducted to determine if mean differences in job satisfaction existed between nurses employed in a supervisory capacity and staff level nurses employed on in-patient units. The analysis of variance model was selected due to the dichotomous versus continuous nature of the variable (supervisor-staff) examined.

If the preceding solution and interpretation of the factor analysis solutions were correct (i.e., the satisfaction construct had been measured and was unidimensional) it had been hypothesized that supervisory nurses would have significantly greater satisfaction than nonsupervisory nurses on the total A, Weighted A, and A Residual scores. This difference is purported in literature and by theory (Porter &

Lawler, 1968; Stember et al., 1978). Since both assumed intrinsic and extrinsic items had converged on one factor, it would also be expected that mean differences on the intrinsic and extrinsic subscores would maintain the same directional differences between the supervisory and nonsupervisory groups. Therefore, to confirm the factor analysis results a one-way analysis of variance was performed on intrinsic and extrinsic subscores as well as total scores. The results of these analyses are outlined in Tables 6 and 7.

Statistically significant differences in the predicted direction were found between the two groups (supervisory and nonsupervisory - in-patient) for the total A scores and total Weighted A scores (Table 6). These findings suggest additional evidence that the factor analytic solution for total A and Weighted A scoring techniques was indeed a unidimensional construct of job satisfaction. That is, the finding that the supervisory nurses exhibited more satisfaction with their jobs than did nurses employed in nonsupervisory (in-patient) positions is consistent with the studies reported in the nursing literature. Moreover, comparable studies of the general work population have also shown that managerial-level staff express more favourable work attitudes than those at lower levels. As such, therefore, this study had some necessary evidence that the A scores and Weighted A scores might well have been measures of job satisfaction.

Importantly, directional differences were still found between groups for the Intrinsic and Extrinsic A subscores (unweighted and weighted). As discussed before, this same directional difference should have been present in the intrinsic and extrinsic items since both groups of items converged on the one factor (interpreted to be job satis-

TABLE 6

ONE-WAY ANALYSIS OF VARIANCE RESULTS
VARIABLE - JOB SETTING

SATISFACTION SCORES	SOURCE	SUM OF SQUARES	MEAN SQUARES	DF	F	PROBABILITY
TOTAL A SCORES	Between Groups Within Groups	778.383 3,576.514	389.191 60.619	2 59	6.420	0.0030*
TOTAL WEIGHTED A SCORES	Between Groups Within Groups	29,671.252 101,848.496	14,835.625 1,726.246	2 59	8.594	0.0005*
TOTAL A RESIDUAL SCORES	Between Groups Within Groups	1.963 59.028	0.982 1.001	2 59	0.981	0.3809
TOTAL B RESIDUAL SCORES	Between Groups Within Groups	0.889 59.099	0.444 1.002	2 59	0.444	0.6438

TABLE 6 (Continued)
MULTIPLE COMPARISONS*

SATISFACTION SCORES	GROUPS	MEAN SCORES	SIGNIFICANT DIFFERENCES AMONG GROUPS
TOTAL A SCORES	In-Patient (1)	49.276	1-2: Significant**
	Supervisory (2)	58.583	1-3: Not Significant
	Out-Patient (3)	53.762	2-3: Not Significant
TOTAL WEIGHTED A SCORES	In-Patient (1)	204.138	1-2: Significant**
	Supervisory (2)	259.000	1-3: Significant**
	Out-Patient (3)	237.429	2-3: Not Significant

* Multiple Comparisons Are Done for This Statistically Significant Result
**Scheffe Procedure - 0.05 Level of Significance

TABLE 7
ONE-WAY ANALYSIS OF VARIANCE RESULTS
VARIABLE - JOB SETTING

SATISFACTION SCORES	SOURCE	SUM OF SQUARES	MEAN SQUARES	DF	F	PROBABILITY
INTRINSIC A SCORES	Between Groups Within Groups	292.559 1146.026	146.279 19.424	2 59	7.531	0.0012
EXTRINSIC A SCORES	Between Groups Within Groups	145.833 1155.640	72.916 19.587	2 59	3.723	0.0300
INTRINSIC WEIGHTED A SCORES	Between Groups Within Groups	12769.526 34221.871	6384.762 580.032	2 59	11.008	0.0001
EXTRINSIC WEIGHTED A SCORES	Between Groups Within Groups	4821.758 31233.617	2410.879 529.383	2 59	4.554	0.0145
INTRINSIC A RESIDUAL SCORES	Between Groups Within Groups	5.216 55.594	2.608 0.942	2 59	2.768	0.0710
EXTRINSIC A RESIDUAL SCORES	Between Groups Within Groups	3.793 56.456	1.896 0.956	2 59	1.982	0.1469
INTRINSIC B RESIDUAL SCORES	Between Groups Within Groups	4.042 56.365	2.021 0.955	2 59	2.116	0.1296
EXTRINSIC B RESIDUAL SCORES	Between Groups Within Groups	1.250 58.674	0.625 0.995	2 59	0.620	0.5369

TABLE 7 (Continued)

MULTIPLE COMPARISONS*

SATISFACTION SCORES	GROUPS	MEAN SCORES	SIGNIFICANT DIFFERENCES AMONG GROUPS
INTRINSIC A SCORES	In-Patient (1) Supervisory (2) Out-Patient (3)	25.379 31.250 27.048	1-2: Significant** 1-3: Not Significant 2-3: Significant**
INTRINSIC WEIGHTED A SCORES	In-Patient (1) Supervisory (2) Out-Patient (3)	104.000 142.500 118.952	1-2: Significant** 1-3: Not Significant 2-3: Significant**

* Multiple Comparisons Are Done for This Statistically Significant Result
**Scheffe Procedure - 0.05 Level of Significance

faction), and because the total scores of A or Weighted A were found to have the directional differences hypothesized from theory and previous research. It therefore may be postulated that the intrinsic and extrinsic subscores are not measures of separate satisfaction dimensions but rather reflect different contributors or primary determinants of the unidimensional job satisfaction construct. It is important to note, however, that this additional supporting evidence via the analysis of variance models only holds true for Total A scores (weighted and unweighted) and the Extrinsic and Intrinsic (weighted or unweighted) A scores. In no instance did the A or B Residual scores (or any variation of these A or B Residual scores) provide predicted directional differences.

It is important to note that the hypothesized directional differences involving A scores were found, despite the statistical power of the study being highly limited (due to the small sample size utilized). Further confirmation is provided therefore that the instrument, in terms of total A scores or total Weighted A scores, seems to have had some construct validity for the measurement of job satisfaction in the nursing work place. Again, however, the reader is reminded that without a sufficient methodology (i.e., the employment of the Campbell and Fiske (1959) model), this is only necessary evidence. Given this limitation, further investigations were pursued to build upon a developing picture that the instrument might have some validity. Drawing from theory, it was hypothesized that if job satisfaction had been measured, then such a measure would predict various criteria that theory indicated were a function of, or influenced by, job satisfaction. This extension will now be discussed under the heading of criterion-

related validity.

Establishment of Criterion-Related Validity

To examine the criterion-related validity of the instrument, correlation coefficients were calculated between the various measures of job satisfaction (total scores as well as subscores) and various criterion variables. The correlational model rather than the analysis of variance model was employed due to the continuous nature of the variables examined.

From theory (cf. Chapter II, pp. 31-41) it was postulated a priori that high job satisfaction scores (A, Weighted A, and A Residual), would be positively correlated with tenure at the institute and negatively correlated with high levels of role ambiguity, intent to leave, and absenteeism. In light of the derivation of the B Residual scores, and the assumption these measures were indicators of dissatisfaction, the direction of these correlations would be reversed. The maintenance of these correlational patterns as well as the strength of each relationship were used as further evidence for estimating which of the total scores or subscores were probably valid. Tables 8 and 9 contain the correlations of the criterion measures with the total scores and subscores respectively.

An examination of the correlations obtained between the total scores and criterion measures indicated that the highest correlations for the A and Weighted A scores were obtained with the dependent variable of role ambiguity. For the Total B Residual and Total A Residual scores the highest correlations were obtained with the variable of casual absence. However, in the latter case the directional correlation

TABLE 8

CORRELATION MATRIX:
TOTAL SATISFACTION SCORES WITH CRITERION VARIABLES

	ROLE AMBIGUITY	INTENT TO LEAVE	TENURE	ABSENCE-FREQUENCY	ABSENCE-CASUAL	ABSENCE-GENERAL
TOTAL A SCORES	-0.365 p=0.001*	-0.273 p=0.016*	0.119 p=0.181	-0.037 p=0.388	-0.061 p=0.318	-0.001 p=0.496
TOTAL WEIGHTED A SCORES	-0.321 p=0.005*	-0.226 p=0.037*	0.083 p=0.259	0.026 p=1	0.016 p=1	-0.026 p=0.419
TOTAL A RESIDUAL SCORES	0.059 p=1	0.132 p=1	-0.126 p=1	0.183 p=1	0.207 p=1	-0.067 p=0.301
TOTAL B RESIDUAL SCORES	0.006 p=0.480	0.187 p=0.070	-0.121 p=0.172	0.145 p=0.130	0.200 p=0.059	-0.161 p=1

* Statistically Significant when $\alpha_1 = 0.05$

TABLE 9

CORRELATION MATRIX:
JOB SATISFACTION SUBSCORES WITH CRITERION VARIABLES

	ROLE AMBIGUITY	INTENT TO LEAVE	TENURE	ABSENCE-FREQUENCY	ABSENCE-CASUAL	ABSENCE-GENERAL
INTRINSIC A SCORES	-0.329 p=0.004*	-0.198 p=0.060	0.126 p=0.163	-0.157 p=0.111	-0.143 p=0.133	-0.075 p=0.282
EXTRINSIC A SCORES	-0.322 p=0.005*	-0.276 p=0.014*	0.083 p=0.260	0.093 p=1	0.035 p=1	0.074 p=1
INTRINSIC WEIGHTED A SCORES	-0.352 p=0.002*	-0.217 p=0.044*	0.162 p=0.102	-0.105 p=0.209	-0.082 p=0.263	-0.106 p=0.207
EXTRINSIC WEIGHTED A SCORES	-0.217 p=0.043*	-0.187 p=0.071	-0.022 p=1	0.164 p=1	0.119 p=1	0.066 p=1
INTRINSIC A RESIDUAL SCORES	-0.040 p=0.378	-0.005 p=0.485	0.095 p=0.230	0.123 p=1	0.133 p=1	-0.069 p=0.296
EXTRINSIC A RESIDUAL SCORES	0.207 p=1	0.277 p=1	-0.361 p=1	0.266 p=1	0.244 p=1	0.009 p=1
INTRINSIC B RESIDUAL SCORES	0.058 p=1	0.125 p=0.164	0.068 p=1	0.104 p=0.211	0.136 p=0.146	-0.163 p=1
EXTRINSIC B RESIDUAL SCORES	-0.075 p=0.279	0.206 p=0.052	-0.322 p=0.005*	0.166 p=0.098	0.229 p=0.037*	-0.112 p=1

* Statistically Significant when $\alpha_1 = 0.05$

was not as predicted: the relationship between casual absence and Total A Residual scores was not meaningful. Furthermore the directional correlations for all of the criterion measures (except general absence) with the Total A Residual scores were not as predicted and therefore not meaningful.

Of all the correlations obtained between total scores and criterion variables only the correlations of the Total A scores and Total Weighted A scores, with role ambiguity and intent to leave were found to be statistically significant at alpha = 0.05 (one-tailed). Given that the small sample size limited the power of this study, the size of these correlations was also examined descriptively. It was evident that the magnitude as well as the direction of the correlations supported the previous findings that the A and Weighted A scores were probably the most valid measures.

The correlations obtained between the various subscores and the criterion variables were also examined to determine if the extrinsic and intrinsic subscores maintained this conclusion. The reader will recall that if extrinsic and intrinsic sources of job satisfaction actually have one commonality of job satisfaction, then both subscores should yield results similar to those found for the total scores.

On examination of Table 9 one will see that for the subscores of A and Weighted A the pattern holds when the criterion of role ambiguity is used. In two of four cases it holds true also for the criterion variable of intent to leave, and while Intrinsic A and Extrinsic Weighted A are not statistically significantly correlated with intent to leave, the probabilities of the correlations are close to the significance level of 0.05 (0.06 and 0.07 respectively). Once

again there appears to be supporting evidence that the intrinsic and extrinsic scores are only contributors to the general one dimensional construct of job satisfaction.

To this point all analyses have been restricted - bivariate. One might hypothesize that any of the criteria might be more related to a linear combination of the various total and/or subscores. To check this hypothesis the regression model was employed to examine the multiple correlations of various total scores and subscores of job satisfaction with each criterion measure. The Extrinsic A Residual and Total A Residual scores were not included in the analyses since the signs of the simple correlations of these scores with the criterion variables were meaningless.

Inspection of the stepwise multiple regression analysis (see Tables 10 to 15) of the criterion measures with the total scores and subscores revealed the following results. For all three measures of absenteeism - absence frequency, casual absence, general absence - not one of the various job satisfaction scores emerged as a significant predictor (cf. Tables 13 to 15). For the criterion variable - role ambiguity - the Total A scores, Intrinsic Weighted A scores, Intrinsic A scores, and Intrinsic A Residual scores emerged as significant at 0.05 level of significance and together accounted for 26.2 percent of the variance in the measure of role ambiguity (cf. Table 10).

For the dependent variable of intent to leave (cf. Table 11) the Extrinsic A scores as well as the Extrinsic B Residual scores emerged as significant predictors. The inclusion of these two variables in the regression equation accounted for 13.72 percent of the variance in the measure of intent to leave.

TABLE 10

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - ROLE AMBIGUITY

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	STATISTICALLY SIGNIFICANT AT $\alpha = 0.05$	
1	TOTAL A SCORES	-0.365	0.133	0.133	1,60	9.197	Yes	
2	INTRINSIC WEIGHTED A SCORES	-0.379	0.143	0.011	2,59	0.728	Yes	
3	INTRINSIC A SCORES	0.397	0.157	0.014	3,58	0.975	Yes	
4	INTRINSIC A RESIDUAL SCORES	0.517	0.262	0.104	4,57	8.045	Yes	
5	TOTAL WEIGHTED A SCORES	0.553	0.306	0.044	5,56	3,591	No	
6	EXTRINSIC B RESIDUAL SCORES	-0.582	0.338	0.032	6,55	2.668	No	
7	INTRINSIC B RESIDUAL SCORES	0.583	0.339	0.001	7,54	0.075	No	
	EXTRINSIC A SCORES							*
	EXTRINSIC WEIGHTED A SCORES							*
	TOTAL B RESIDUAL SCORES							*

* These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors

TABLE 11
STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - INTENT TO LEAVE

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	STATISTICALLY SIGNIFICANT AT $\alpha = 0.05$
1	EXTRINSIC A SCORES	-0.276	0.076	0.076	1,60	4.947	Yes
2	EXTRINSIC B RESIDUAL SCORES	0.371	0.137	0.061	2,59	4.180	Yes
3	EXTRINSIC WEIGHTED A SCORES	0.388	0.150	0.013	3,58	0.884	No
4	TOTAL WEIGHTED A SCORES	-0.398	0.158	0.008	4,57	0.542	No
5	TOTAL A SCORES	0.412	0.170	0.012	5,56	0.802	No
6	INTRINSIC B RESIDUAL SCORES	0.449	0.201	0.031	6,55	2.160	No
7	INTRINSIC A RESIDUAL SCORES	0.461	0.213	0.011	7,54	0.761	No
	INTRINSIC A SCORES						*
	INTRINSIC WEIGHTED A SCORES						*
	TOTAL B RESIDUAL SCORES						*

* These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors

TABLE 12

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - TENURE

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	STATISTICALLY SIGNIFICANT AT $\alpha = 0.05$
1	EXTRINSIC B RESIDUAL SCORES	-0.322	0.103	0.103	1,60	6.925	Yes
2	TOTAL B RESIDUAL SCORES	0.437	0.191	0.087	2,59	6.353	Yes
3	INTRINSIC A SCORES	0.446	0.199	0.009	3,58	0.638	No
4	INTRINSIC WEIGHTED A SCORES	-0.454	0.206	0.007	4,57	0.476	No
5	EXTRINSIC WEIGHTED A SCORES	-0.456	0.208	0.002	5,56	0.131	No
6	TOTAL A SCORES	0.479	0.229	0.022	6,55	1.538	No
7	INTRINSIC A RESIDUAL SCORES	0.479	0.230	0.000	7,54	0.012	No
	EXTRINSIC A SCORES						*
	TOTAL WEIGHTED A SCORES						*
	INTRINSIC B RESIDUAL SCORES						*

* These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors

TABLE 13

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - ABSENCE-FREQUENCY

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	STATISTICALLY SIGNIFICANT AT $\alpha = 0.05$
1	EXTRINSIC B RESIDUAL SCORES	0.166	0.028	0.028	1,60	1.704	No
2	INTRINSIC A SCORES	-0.222	0.049	0.022	2,59	1.349	No
3	EXTRINSIC WEIGHTED A SCORES	0.345	0.119	0.070	3,58	4,582	NO
4	EXTRINSIC A SCORES	-0.346	0.120	0.001	4,57	0.039	No
5	TOTAL B RESIDUAL SCORES	-0.346	0.121	0.000	5,56	0.016	No
6	INTRINSIC A RESIDUAL SCORES	0.349	0.122	0.002	6,55	0.110	No
7	TOTAL WEIGHTED A SCORES	-0.350	0.123	0.001	7,54	0.060	No
	INTRINSIC WEIGHTED A SCORES						*
	TOTAL A SCORES						*
	INTRINSIC B RESIDUAL SCORES						*

* These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors

TABLE 14

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - ABSENCE-CASUAL

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	STATISTICALLY SIGNIFICANT AT $\alpha = 0.05$
1	EXTRINSIC B RESIDUAL SCORES	0.229	0.052	0.052	1,60	3.321	No
2	INTRINSIC A SCORES	- 0.263	0.069	0.017	2,59	1.067	No
3	TOTAL WEIGHTED A SCORES	0.318	0.101	0.032	3,58	2.063	No
4	INTRINSIC B RESIDUAL SCORES	- 0.325	0.106	0.004	4,57	0.283	No
5	EXTRINSIC A SCORES	- 0.326	0.106	0.001	5,56	0.039	No
6	INTRINSIC A RESIDUAL SCORES	- 0.326	0.107	0.000	6,55	0.017	No
7	EXTRINSIC WEIGHTED A SCORES	- 0.327	0.107	0.000	7,54	0.014	No
	INTRINSIC WEIGHTED A SCORES						*
	TOTAL A SCORES						*
	TOTAL B RESIDUAL SCORES						*

* These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors.

TABLE 15

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - ABSENCE-GENERAL

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	STATISTICALLY SIGNIFICANT AT $\alpha = 0.05$	
1	INTRINSIC B RESIDUAL SCORES	-0.163	0.027	0.027	1,60	1.645	No	
2	INTRINSIC A RESIDUAL SCORES	0.195	0.038	0.011	2,59	0.698	No	
3	EXTRINSIC WEIGHTED A SCORES	0.215	0.047	0.008	3,58	0.514	No	
4	TOTAL WEIGHTED A SCORES	-0.275	0.077	0.029	4,57	1.807	No	
5	INTRINSIC A SCORES	0.292	0.086	0.010	5,56	0.611	No	
6	TOTAL A RESIDUAL SCORES	-0.302	0.091	0.006	6,55	0.338	No	
7	TOTAL A SCORES	-0.307	0.094	0.003	7,54	0.183	No	
8	TOTAL EXTRINSIC B RESIDUAL SCORES	-0.308	0.095	0.001	8,53	0.043	No	
	EXTRINSIC A SCORES							*
	INTRINSIC WEIGHTED A SCORES							*
	TOTAL B RESIDUAL SCORES							*

* These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors

In similar fashion, two significant predictors were found for the criterion variable of tenure. These were the Extrinsic B Residual scores and the Total B Residual scores (cf. Table 12). Together these independent variables accounted for 19.06 percent of the variance.

Before the multiple regression model was employed it appeared that the most consistent support had been obtained for the Total A and Total Weighted A scores as the best measures of job satisfaction. However, examination of the multiple correlation results suggested that a combination of scores explained the greatest amount of variance in the criterion variables of role ambiguity, intent to leave, and tenure. Furthermore, the analyses revealed that the Total Weighted A scores were not a significant predictor of any of the criterion variables. In contrast, the Total A scores were the first variable to enter the regression equation predicting role ambiguity. It was therefore believed that the Total A scores were superior to the Total Weighted A scores and warranted further examination.

In view of the multiple correlation results of Tables 11 and 12 which indicated that Extrinsic A, Extrinsic B Residual, and Total B Residual scores (but not Total A scores) were significant predictors of two of the criterion variables (intent to leave and tenure) further analysis was undertaken.

Multiple regression analysis of the subscores and total scores with the criterion variables was repeated, but in this case the Total A scores were forced to enter the regression equation first (see Tables 16 and 17). For the criterion variable of intent to leave four scores emerged as significant predictors namely Total A, Extrinsic B Residual, Intrinsic A, and Intrinsic Weighted A. Together, these

TABLE 16

HIERARCHICAL STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - INTENT TO LEAVE

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	STATISTICALLY SIGNIFICANT AT $\alpha = 0.05$
1	TOTAL A SCORES	-0.273	0.075	0.075	1,60	4.842	Yes
2	EXTRINSIC B RESIDUAL SCORES	0.330	0.109	0.034	2,59	2.576	Yes
3	INTRINSIC A SCORES	0.348	0.121	0.012	3,58	0.814	Yes
4	INTRINSIC WEIGHTED A SCORES	-0.370	0.137	0.016	4,57	1.087	Yes
5	INTRINSIC A RESIDUAL SCORES	0.425	0.181	0.044	5,56	3.072	No
6	TOTAL WEIGHTED A SCORES	0.448	0.201	0.020	6,55	1.383	No
7	INTRINSIC B RESIDUAL SCORES	0.475	0.226	0.026	7,54	1.816	No
	EXTRINSIC A SCORES						*
	EXTRINSIC WEIGHTED A SCORES						*
	TOTAL B RESIDUAL SCORES						*

* These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors

TABLE 17

HIERARCHICAL STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - TENURE

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	STATISTICALLY SIGNIFICANT AT $\alpha = 0.05$
1	TOTAL A SCORES	0.119	0.014	0.014	1,60	0.862	No
2	EXTRINSIC B RESIDUAL SCORES	-0.312	0.097	0.084	2,59	5.550	No
3	TOTAL B RESIDUAL SCORES	0.414	0.176	0.079	3,58	5.630	No
4	EXTRINSIC WEIGHTED A SCORES	-0.430	0.184	0.009	4,57	0.623	No
5	EXTRINSIC A SCORES	0.442	0.196	0.011	5,56	0.799	No
6	TOTAL WEIGHTED A SCORES	-0.449	0.202	0.006	6,55	0.404	No
7	EXTRINSIC A RESIDUAL SCORES	0.449	0.202	0.000	7,54	0.015	No
	INTRINSIC A SCORES						*
	INTRINSIC WEIGHTED A SCORES						*
	INTRINSIC B RESIDUAL SCORES						*

* These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors

scores accounted for 13.7 percent of the variance which was identical to the variance accounted for by the two significant predictors in the stepwise multiple regression and therefore confirmed the findings of that analysis which indicated that a combination of scores provided the best prediction of the variable intent to leave.

For the criterion variable of tenure, when the Total A scores were forced to enter the regression equation first, they were not found to be a significant predictor. Thus it was again confirmed that the linear combination of Extrinsic B Residual and Total B Residual scores provided the best prediction of tenure.

The results of the multiple regression analyses indicated that a combination of scores was superior to the Total A scores alone in the prediction of various criterion variables. Therefore to obtain a comprehensive measure of job satisfaction these analyses indicate that a combination of scores should be employed. However, if a less complex measure is desired, the results of this study suggest there is some support for the validity of Total A scores as a reasonably simple assessment technique.

While most of the analyses repeatedly lent support to the validity of the Total A scores, the analyses were based on a research model that provided only necessary not sufficient information for the determination of construct validity. As previously described (cf. Chapter II) the sufficient condition for the establishment of the construct validity of a scale is the presence of convergence and discrimination.

Accordingly, a tentative but inadequate attempt to evaluate the degree of discrimination was undertaken for the A scores. To do

this the A scores along with those various demographic variables believed to be not related with each criterion were entered into a multiple regression solution. It was hypothesized that if indeed the Total A scores were a valid measure of job satisfaction then they as a predictor should (1) predict each criterion better than any selected demographic variable, and (2) should correlate with each criterion more strongly than with other selected demographic predictors. From the multiple regression analyses so undertaken (see Tables 18 to 23) the Total A scores did show this evidence of discrimination for the dependent variable of role ambiguity in that they accounted for a statistically significant amount of variance whereas the other independent variables (education, full-time experience, part-time experience) did not. Further, the relationships between Total A scores and these demographic variables remained smaller than did the A scores with the criterion (see Table 24). For the criterion variable of intent to leave the Total A scores were also found to be a significant predictor and to predict the criterion better than any of the selected demographic variables of age, education, employment status, full-time and part-time experience (see Table 24). Again, the relationships between the Total A scores and the demographic variables remained smaller than did the Total A scores with the criterion.

For the criterion measures of absenteeism and tenure the Total A scores were not found to be significant predictors.

Before a final conclusion and recommendation can be made in the use of the A scores as a probable useful measure of job satisfaction for nurses, one major hypothesis remains unanswered. To this point no evidence existed to use the raw scores of A as opposed to the factor

TABLE 18

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - ROLE AMBIGUITY

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	PROBABILITY*
1	TOTAL A SCORES	-0.365	0.133	0.133	1,60	9.197	<0.05
2	EDUCATION	-0.400	0.160	.027	2,59	1.930	>0.05
3	FULL-TIME EXPERIENCE	0.435	0.189	.029	3,58	2.082	>0.05
4	PART-TIME EXPERIENCE	0.436	0.190	.001	4,57	0.049	>0.05
	AGE						**

* For the Variable Entered

** These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors

TABLE 19

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - INTENT TO LEAVE

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	PROBABILITY*
1	TOTAL A SCORES	-0.273	0.075	0.075	1,60	4.842	<0.05
2	EDUCATION	0.391	0.153	0.078	2,59	5.424	<0.05
3	PART-TIME EXPERIENCE	-0.405	0.164	0.012	3,58	0.801	>0.05
4	FULL-TIME EXPERIENCE	-0.409	0.167	0.003	4,57	0.227	>0.05
5	AGE	0.415	0.172	0.005	5,56	0.332	>0.05
6	EMPLOYMENT STATUS	-0.419	0.176	0.003	6,55	0.232	>0.05

* For the Variable Entered

TABLE 20

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - TENURE

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	PROBABILITY*
1	TOTAL A SCORES	0.119	0.014	0.014	1,60	0.862	>0.05
2	EDUCATION	0.121	0.015	0.001	2,59	0.034	>0.05
	EMPLOYMENT STATUS						**

* For the Variable Entered
** These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors

TABLE 21

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - ABSENCE-FREQUENCY

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	PROBABILITY*
1	PART-TIME EXPERIENCE	-0.208	0.043	0.043	1,60	2.721	>0.05
2	FULL-TIME EXPERIENCE	0.245	0.060	0.017	2,59	1.054	>0.05
3	AGE	-0.284	0.081	0.021	3,59	1.308	>0.05
4	EDUCATION	0.306	0.094	0.013	4,57	0.799	>0.05
	TOTAL A SCORES						**

* For the Variable Entered
** These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors

TABLE 22

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - ABSENCE-CASUAL

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	PROBABILITY*
1	PART-TIME EXPERIENCE	-0.130	0.017	0.017	1,60	1.029	>0.05
2	AGE	-0.167	0.028	0.011	2,59	0.671	>0.05
3	EDUCATION	-0.187	0.035	0.007	3,58	0.414	>0.05
4	FULL-TIME EXPERIENCE	0.200	0.040	0.005	4,57	0.315	>0.05
5	TOTAL A SCORES	-0.201	0.040	0.000	5,56	0.012	>0.05

* For the Variable Entered

TABLE 23

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - ABSENCE-GENERAL

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	PROBABILITY*
1	FULL-TIME EXPERIENCE	0.410	0.169	0.169	1,60	12.164	<0.05
2	EDUCATION	0.445	0.198	0.029	2,59	2.141	>0.05
3	AGE	0.451	0.204	0.006	3,58	0.433	>0.05
4	PART-TIME EXPERIENCE	0.456	0.208	0.004	4,57	0.285	>0.05
5	TOTAL A SCORES	0.456	0.208	0.000	5,56	0.024	>0.05

* For the Variable Entered

TABLE 24

CORRELATION MATRIX:
TOTAL A SCORES WITH CRITERION AND DEMOGRAPHIC VARIABLES

	TOTAL A SCORES	ROLE AMBIGUITY	INTENT TO LEAVE	TENURE	ABSENCE-FREQUENCY	ABSENCE-CASUAL	ABSENCE-GENERAL	FULL-TIME EXPERIENCE	PART-TIME EXPERIENCE	AGE	EDUCATION	EMPLOYMENT STATUS
TOTAL A SCORES	1.000	-0.363	-0.273	0.119	-0.037	-0.061	-0.001	0.159	0.069	0.219	0.266	-0.152
ROLE AMBIGUITY	-0.363	1.000	0.316	-0.194	-0.076	-0.062	0.055	-0.210	0.009	-0.184	0.063	-0.107
INTENT TO LEAVE	-0.273	0.316	1.000	-0.308	-0.029	-0.015	-0.034	-0.031	-0.134	-0.053	0.197	-0.084
TENURE	0.119	-0.194	-0.308	1.000	-0.055	-0.130	0.342	0.439	0.295	0.468	0.055	-0.021
ABSENCE-FREQUENCY	-0.037	-0.076	-0.029	-0.055	1.000	0.864	0.379	0.195	-0.208	-0.022	-0.102	-0.266
ABSENCE-CASUAL	-0.061	-0.062	0.015	-0.130	0.864	1.000	0.041	0.008	-0.130	-0.127	-0.097	-0.209
ABSENCE-GENERAL	-0.001	0.055	-0.034	0.342	0.379	0.041	1.000	0.410	-0.148	0.206	-0.115	-0.235
FULL-TIME EXPERIENCE	0.159	-0.210	-0.031	0.439	0.195	0.008	0.410	1.000	-0.355	0.219	0.131	-0.429
PART-TIME EXPERIENCE	0.069	0.009	-0.134	0.295	-0.208	-0.130	-0.148	-0.355	1.000	0.179	-0.008	0.502
AGE	0.219	-0.184	-0.053	0.468	-0.022	-0.127	0.206	0.219	0.179	1.000	0.147	-0.066
EDUCATION	0.266	0.063	0.197	0.055	-0.102	-0.097	-0.115	0.131	-0.008	0.147	1.000	-0.191
EMPLOYMENT STATUS	-0.152	-0.107	-0.084	-0.021	-0.266	-0.209	-0.235	-0.429	0.502	-0.066	-0.191	1.000

scores (based on the unidimensional solution of Table 2). Thus as a final step, multiple regression analysis was performed on the criterion measures using A factor scores and A raw scores as predictors (see Tables 25-30). While the correlations between the criterion measures and the A factor scores are respectively similar to those obtained using the raw satisfaction scores (see Table 31), the A factor scores did not emerge as significant predictors for any of the criterion measures when the stepwise regression solution was computed. For the criterion variables of role ambiguity and intent to leave the total raw A scores were significant predictors and accounted for 13.29 percent of the variance and 7.46 percent of the variance respectively. For the measure of tenure and the three measures of absenteeism neither the Total A raw scores nor the factor scores were significant predictors. Thus it would appear that the Total raw A scores were probably a more useful measure of job satisfaction for nurses than the factor A scores.

Throughout the above analyses it was evident that while the Total A scores were found as a probable valid measure of nurses' job satisfaction, the lack of statistical verification for the relationship between Total A scores and tenure or any form of absenteeism was thought to be evidence of possible invalidity. Further, when the Total A scores were found to be statistically significantly correlated, the size of the relationship appeared to be low and thus again one questioned the degree of validity of the A scores. Although only low to moderate correlations between the predictor and criterion variables were achieved in this study, the results have approached those documented in the literature. Possible explanations for the findings should, however, be examined before one arbitrarily attributes the results to measurement

TABLE 25

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - ROLE AMBIGUITY

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	PROBABILITY*
1	TOTAL A SCORES	-0.365	0.133	0.133	1,60	9.197	<0.05
-	A FACTOR SCORES						**

* For the Variable Entered

** These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors

TABLE 26

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - INTENT TO LEAVE

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	PROBABILITY*
1	TOTAL A SCORES	-0.273	0.075	0.075	1,60	4.842	<0.05
2	A FACTOR SCORES	0.274	0.075	0.001	2,59	0.043	>0.05

* For the Variable Entered

TABLE 27

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - TENURE

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	PROBABILITY*
1	TOTAL A SCORES	0.119	0.014	0.014	1,60	0.862	>0.05
	A FACTOR SCORES						**

* For the Variable Entered

** These variables not entered into regression equation as no additional variance of the criterion is accounted for by these predictors

TABLE 28

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - ABSENCE-FREQUENCY

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	PROBABILITY*
1	A FACTOR SCORES	-0.065	0.004	0.004	1,60	0.251	>0.05
2	TOTAL A SCORES	0.189	0.036	0.032	2,59	1.936	>0.05

* For the Variable Entered

TABLE 29

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - ABSENCE-CASUAL

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	PROBABILITY*
1	A FACTOR SCORES	-0.071	0.005	0.005	1,60	0.303	>0.05
2	TOTAL A SCORES	0.092	0.008	0.003	2,59	0.204	>0.05

* For the Variable Entered

TABLE 30

STEPWISE MULTIPLE REGRESSION RESULTS
DEPENDENT VARIABLE - ABSENCE-GENERAL

STEP	VARIABLE ENTERED	R	R SQUARE	R SQUARE CHANGE	DF	F	PROBABILITY*
1	A FACTOR SCORES	-0.020	0.0004	0.0004	1,60	0.023	>0.05
2	TOTAL A SCORES	0.122	0.015	0.0146	2,59	0.449	>0.05

* For the Variable Entered

TABLE 31

CORRELATION MATRIX:
A FACTOR SCORES AND RAW SCORES WITH CRITERION VARIABLES

	ROLE AMBIGUITY	INTENT TO LEAVE	TENURE	ABSENCE-FREQUENCY	ABSENCE-CASUAL	ABSENCE-GENERAL
A FACTOR SCORES	-0.365	-0.254	0.111	-0.064	-0.071	-0.020
A RAW SCORES	-0.365	-0.273	0.119	-0.037	-0.061	-0.001

failure of this and other studies.

The low correlations obtained for each of the four scoring techniques and each of the three absence measures may be attributable to either the study sample or the research design. The satisfaction-absence relationships reported in the literature have most frequently been derived from samples of blue-collar or clerical workers. Failure to replicate these findings in a sample of professional employees may reflect a difference in attitude concerning withdrawal behaviour and the possibility that professional employees express job dissatisfaction in a more direct manner. It has been further noted with regard to study samples that the magnitude of the satisfaction-absence relationship decreases when the individual rather than the group is used as the unit of analysis (Nicholson et al., 1976).

A further explanation for the results obtained in this study is the existence of [illegible] constraints which influence attendance and prevent individ[illegible] from acting in accordance with perceived satisfaction. As postulated by Steers and Rhodes (1978) external constraints such as family responsibilities, personal work ethic, and organizational commitment possibly moderate the satisfaction-absence relationship. The extent to which these variables may have influenced the obtained correlations was not assessed and was beyond the scope of this study.

The concept of external constraints relates to Hammer's and Landau's (1981) assertion that absence data are frequently contaminated by classification errors. That is, the conceptual and operational distinctions between voluntary and involuntary absence are often blurred. Voluntary absence is defined as behaviour which is under the worker's

control as opposed to involuntary absence over which the worker has no control. Although long-term absences may be more easily categorized in this regard, the nature of short-term absence is difficult to ascertain. Since job dissatisfaction is thought to be more strongly related to voluntary absenteeism, the importance of correctly classifying short-term absences is apparent. Absenteeism data available for this study were those recorded by the particular oncology treatment centre. Thus only the duration and frequency of absences were analyzed given that the specific reasons for absence were not reported.

A second criticism of the absence research which has been advanced by Hammer and Landau (1981) is the methodological difficulties which arise from the distribution of the data. Frequently, sample distributions of absenteeism are positively skewed and truncated by the presence of a large number of zero values. With this type of distribution, the value of the correlation coefficient is constricted and the standard error of the regression weight is adversely influenced.

The results of this study not only failed to statistically verify the relationship between Total A scores and absenteeism but also between the Total A scores and tenure. Again, alternative explanations for these findings should be examined before attributing the results to measurement failure.

Although the measure of tenure or duration of employment has been used often in the study of organizational attitudes and behaviour, it appears to be at best, a poor substitute for an actual measure of turnover (Price, 1977). The relationship of tenure and job satisfaction is probably strongly attenuated by a number of variables. In a sample comprised entirely of female employees it may be hypothesized that

duration of employment is largely influenced by economic factors, the opportunity for new employment, maternity leave, and the duration of the husband's employment. It is therefore possible that nurses not highly satisfied with their jobs will choose to maintain their current employment status for a number of reasons unrelated to their satisfaction with work. It appears that the conventional measure of tenure is not an appropriate criterion measure in that it does not account for the various complex factors other than job attitudes which are operative in termination decisions.

Of the various criterion measures employed in the study, the highest correlations were obtained between the measures of job satisfaction and role ambiguity. Although these correlations were the strongest they may only be described as modest in nature. One explanation for these findings is that nurses, as a professional group, may be unique in their perceptions regarding job satisfaction and role ambiguity. "It may be that they understand and adapt to the role ambiguity inherent in their jobs insofar as its effect on their job satisfaction" (Posner & Randolph, 1971, p. 243). It may also be hypothesized that the nature of the hospital in which the investigation was undertaken influenced the research findings. The study setting is a referral hospital in which teaching and research are emphasized. The orientation of a hospital and the nature of the various subunits may influence the degree of job structuring and the consequent perception of role stress among employees (Leatt & Schneck, 1980; Lyons & Ivancevich, 1978). Professionalism may be a more significant force in clarifying nurses' roles in a teaching-referral hospital than in a non-teaching hospital. It could be hypothesized that in the study

setting close to optimal job structure (as it pertains to job satisfaction) existed and thus attenuated the correlation between perceived role ambiguity and job satisfaction.

Obviously many possibilities exist to account for the failure to establish a relationship between measured job satisfaction and criteria such as absenteeism and tenure, as well as the failure to establish a stronger relationship between measured job satisfaction and role ambiguity and intent to leave. This author thinks, however, that at the theoretical best, the relationship between nurses' job satisfaction and these criteria is not that high in any case. Considering the attenuation that measurement error would normally bring to any statistical establishment of that relationship, it is evident that this study constitutes some evidence that the instruments' Total A scores are a reasonable measure of job satisfaction.

SUMMARY OF THE CHAPTER

In this chapter the results and interpretation of the data analyses were presented.

On the basis of the techniques used to estimate content, construct, and criterion-related validity it was concluded that the instrument did not measure a two dimensional construct of job satisfaction as postulated a priori. Rather, the findings seemed to suggest that the construct of job satisfaction may be unidimensional. Of the scoring methods examined, the most consistent support was demonstrated for the Total A scores as a reasonably simple assessment technique. However, the multiple regression analyses indicated that a combination of scores provided the best prediction of various criterion variables, and this combination was therefore superior to the Total A scores as a

measure of nurses' job satisfaction.

The results of all analyses were discussed in terms of the limitations imposed by the power of the study as well as the monotrait monomethod design.

A summary of the investigation and recommendations for future study are presented in the following chapter.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

The intent of this study was to evaluate the psychometric properties of a scale designed to measure the job satisfaction of nursing personnel. It was apparent from the literature that a number of theoretical and operational definitions for the construct of job satisfaction have evolved. It was also evident on review of the literature that these definitions were infrequently developed within a conceptual framework and little consideration was given to the psychometric properties of the various operational measures. Given the apparent importance of the job satisfaction topic, and the status of current measurement in this area, validation studies were identified as a fundamental prerequisite to further research.

In this investigation a number of analyses were undertaken to evaluate the reliability, as well as the content, construct, and criterion-related validity of a job satisfaction scale. It was hypothesized a priori that the instrument measured two separate dimensions of job satisfaction namely intrinsic and extrinsic, and that these factors reflected satisfaction with the job content and the job context respectively. The format of the scale provided three separate measures of job satisfaction: the A scores were considered a measure of need fulfillment, the Weighted A scores a measure of need fulfillment weighted by importance, and the A Residual scores a measure of need fulfillment not predicted by importance. A fourth measure (B Residual scores) was also derived and these scores were considered a measure of unmet needs or job dissatisfaction. All scores were examined to determine if conceptually distinct measures yielded empirically comparable

results.

The questionnaire was administered to the supervisory and nonsupervisory nursing staff of an acute care hospital. Responses were analyzed using a number of statistical techniques which were intended to provide an estimate of the degree of reliability and validity of the instrument.

The content validity of the scale was thought to be limited due to the small number of validators and the failure to randomly select the panel. However, in spite of these limitations some support for the scale's content validity was demonstrated.

To assess the construct validity of the scale, factor analysis was employed. The a priori hypothesis that the instrument measured a two dimensional construct of job satisfaction was not supported. Instead, for three of the scoring techniques (A, Weighted A, and A Residual scores) a one factor solution was found to explain best the common variances among the 16 questionnaire items. Other factor solutions were examined for comparison purposes. These analyses were inferior to the one factor solution and no psychological meaning could be derived from these solutions. Further support for the factor analytic solution of these scores was provided by the corresponding alpha coefficients which suggested that the scores were a measure of a unidimensional construct.

Factor analysis of the fourth scoring technique examined in this study (B Residual scores) yielded a two dimensional solution. However, the dimensions were not those postulated a priori but rather consisted of a general factor defined as job dissatisfaction and a second factor defined as professional growth and development.

Although three of the four scoring techniques appeared to

measure a unidimensional construct of job satisfaction, it was noted that factor solutions provide necessary but not sufficient evidence of construct validity. Accordingly, additional evidence was sought by employing a one-way analysis of variance model to determine if expected mean differences existed between supervisory nurses and staff level nurses employed on in-patient units. In view of the content experts agreement that intrinsic/extrinsic dimensions were contained in the instrument, and to confirm the factor analysis results, the one-way analysis of variance was performed on intrinsic and extrinsic subscores as well as on total scores. The finding of statistically significant differences between the two groups in the predicted direction for the Total A and Weighted A scores provided additional support for the factor analytic conclusions that the A and Weighted A scoring techniques measured the unidimensional construct of job satisfaction. Furthermore, the hypothesized directional differences involving A scores were found despite the low statistical power of the study.

The results obtained from the analysis of variance and factor analysis suggested that the A and Weighted A scoring techniques provided the most valid measure of a unidimensional construct of job satisfaction. Given the limitation imposed by the study design, however, further investigations were pursued.

To assess the criterion-related validity of the instrument bivariate and multiple correlation coefficients were calculated between the job satisfaction scores (total as well as subscores) and various criterion variables. An examination of the direction and magnitude of the bivariate correlations supported the previous findings that the Total A and Weighted A scores were probably the most valid measure of

nurses' job satisfaction. The results obtained from stepwise and hierarchical multiple regression analyses, however, indicated that a combination of scores rather than a single score provided the best prediction of three of the criterion variables. While limited support was obtained for the Total A scores from these multiple regression analyses no particular support was found for the Total Weighted A scores. It was concluded therefore that the most comprehensive and valid measure of nurses' job satisfaction was obtained from the combination of scores delineated in the multiple regression analyses. It was also noted however, that consistent support had been demonstrated for the validity of the Total A scores as a reasonably simple and less complex measurement technique and therefore one which could be easily employed.

Although the results of most analyses suggested some support for the validity of the Total A scores, it was noted that the analyses were based on a research model that provided necessary but not sufficient information to determine construct validity. Therefore, a tentative but inadequate attempt to evaluate the degree of discrimination of the Total A scores was undertaken. From the multiple regression analysis employed for this purpose, it was found that the Total A scores did show evidence of discrimination for the criterion variables of role ambiguity and intent to leave.

As a final evaluation of the utility of the Total A scores, multiple regression analysis was performed on the criterion measures using A raw scores and A factor scores as predictors. The results of this analysis suggested that the raw A scores were probably a more useful measure of job satisfaction for nurses than the Factor A scores.

Given the small sample size, the monotrait-monomethod design,

and the cross-sectional nature of the study, the findings reported above must be considered tentative. Furthermore, as Schwab (1980) has cautioned "a single assessment of the construct validity of any measure must necessarily be examined within the context of uncertain knowledge about the validity of measures of other constructs and imperfect confidence in the hypotheses as they apply to the sample investigated" (p. 22).

However, the apparent existence of a unidimensional rather than multidimensional construct of job satisfaction as measured in this study has been suggested by other investigators. Dyer and Parker (1975) concluded that "the distinction between intrinsic and extrinsic outcomes is not particularly valid or useful and should perhaps be discontinued" (p. 458). These investigators also questioned the theoretical basis for the intrinsic/extrinsic distinction and raised the important issue of whether the terms "represent two facets of a single concept" (Dyer & Parker, 1975, p. 458) rather than two separate dimensions as frequently claimed.

Given these findings and conclusions, recommendations arising from this investigation and suggestions for further study are presented in the following section.

RECOMMENDATIONS

The theoretical models employed to date in the study of job satisfaction have been relatively limited in scope. In many instances they have been based on dubious or ambiguous assumptions (Seashore & Taber, 1975). Further development in this area will require the integration of existing approaches into a more general theoretical framework if understanding of the job satisfaction construct is to be increased.

The results of this study were similar to the findings of other investigators who have reported that not all operational definitions of job satisfaction yielded comparable results. This finding has important implications for the interpretation of job satisfaction research in that the convergence of various operational measures of job satisfaction has rarely been assessed. Different operational measures can and do result in different conclusions regarding the relationship of job satisfaction to variables such as absenteeism, tenure, and intent to leave. It is imperative therefore that nursing researchers examine the psychometric properties of instruments employed to measure the job satisfaction of nursing personnel. Only with the use of reliable and valid scales will knowledge of the construct be expanded.

The demonstration of some support for the validity of the Total A scores in this study suggests that the instrument warrants further evaluation. In order to sufficiently evaluate the construct validity of the measure it is recommended that the multitrait-multimethod model be employed to determine the convergent and discriminant validity of the scale. In any further research it is also recommended that the sample size be increased in order to improve the power of the study.

With regard to the scoring methods used in this investigation it is suggested that the use of discrepancy scores should continue to be challenged. These scores lack reliability due to the high correlations obtained between the original raw scores from which the differences were computed. Although only minimal support for the validity of residual scores was demonstrated in this study, these scores are more reliable than discrepancy scores. The use of residual scores warrants

further investigation in view of the finding in this study that they contributed to the prediction of several criterion measures. The practice of weighting satisfaction scores by a measure of importance was not as well supported by the data as the use of an unweighted measure of need fulfillment. It appears that a weighted score does not provide a more valid measure of job satisfaction than its unweighted counterpart.

The incorporation of criterion-related validation into job satisfaction studies is strongly encouraged since few studies report validation at this level. Particular attention however, must be focused on the choice of criterion measure selected for validation to ensure the reliability and validity of the measures. On the basis of the results obtained in this study it is suggested that none of the absence measures be used for further research. It is believed that the measures of absence-frequency, casual absence, and general absence are not appropriate criterion variables in that job satisfaction is more likely related only to true voluntary absenteeism. Since the method of recording absences in most organizations does not tap voluntary absenteeism, it is suggested that the commonly used absence measures are of little value in criterion-related validation studies of job satisfaction. It is also recommended that the measure of tenure not be employed in assessing this form of validity since numerous factors appear to attenuate the satisfaction-tenure relationship.

Although the optimum dimension(s) of job satisfaction has(have) yet to be defined it is obvious from the literature that factor analysis provides valuable insight into the structure of the construct. Although factor analysis can provide useful information concerning the nature of a variable it must be remembered that this technique does not identify

dimensions of a construct per se but rather it identifies dimensions within the items comprising the measure. It is suggested that more empirical support is needed before a single factor structure can be relied upon with any degree of confidence. It is recommended therefore that the factor analytic technique is best used in studies when both multitraits and multimethods are available.

The recent emergence of increasingly complex theoretical models to explain job satisfaction appears to have much merit with respect to the refinements necessary to explain this complex construct. Improved models and theories will continue to emerge through interactive theoretical and empirical work. Thus, future validation studies will be facilitated by the elaboration of comprehensive conceptual frameworks. Theory development in turn, will be advanced by the data derived from methodologically sound research.

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APPENDIX I

QUESTIONNAIRE

INSTRUCTIONS

Sixteen job characteristics connected with your hospital position are listed on pages one to six of the questionnaire. Each characteristic is followed by three questions:

a) how much of the characteristic is there now connected with your job?

b) how much of the characteristic should be connected with your job?

c) how important is this characteristic to you?

Please circle the number between 1 (none at all OR not important) and 5 (maximum OR most important) on the scale following each question which best represents your opinion.

EXAMPLE

The opportunity to fully use my skills and abilities in my job:

(a) HOW MUCH of the characteristic IS THERE NOW connected with your job?	(none at all)	1 2 3 4 5 (maximum)
(b) HOW MUCH of the characteristic SHOULD BE connected with your job?	(none at all)	1 2 3 4 5 (maximum)
(c) HOW IMPORTANT is this characteristic TO YOU?	(not important)	1 2 3 4 5 (most important)

QUESTIONNAIRE

The opportunity for professional growth and development in my job

(a) HOW MUCH of the characteristic IS THERE NOW connected with your job? (none at all) 1 2 3 4 5 (maximum)

(b) HOW MUCH of the characteristic SHOULD BE connected with your job? (none at all) 1 2 3 4 5 (maximum)

(c) HOW IMPORTANT is this characteristic TO YOU? (not important) 1 2 3 4 5 (most important)

The opportunity, in my job, to share in the setting of nursing goals for the hospital.

(a) HOW MUCH of the characteristic IS THERE NOW connected with your job? (none at all) 1 2 3 4 5 (maximum)

(b) HOW MUCH of the characteristic SHOULD BE connected with your job? (none at all) 1 2 3 4 5 (maximum)

(c) HOW IMPORTANT is this characteristic TO YOU? (not important) 1 2 3 4 5 (most important)

The fairness of working hours (shift rotations, days off, number of weekends off) associated with my job.

(a) HOW MUCH of the characteristic IS THERE NOW connected with your job? (none at all) 1 2 3 4 5 (maximum)

(b) HOW MUCH of the characteristic SHOULD BE connected with your job? (none at all) 1 2 3 4 5 (maximum)

(c) HOW IMPORTANT is this characteristic TO YOU? (not important) 1 2 3 4 5 (most important)

4. The opportunity to fully use my skills and abilities in my job.

   (a) HOW MUCH of the characteristic IS THERE NOW connected with your job? (none at all) 1 2 3 4 5 (maximum)

   (b) HOW MUCH of the characteristic SHOULD BE connected with your job? (none at all) 1 2 3 4 5 (maximum)

   (c) HOW IMPORTANT is this characteristic TO YOU? (not important) 1 2 3 4 5 (most important)

5. The supervision received in my job.

   (a) HOW MUCH of the characteristic IS THERE NOW connected with your job? (none at all) 1 2 3 4 5 (maximum)

   (b) HOW MUCH of the characteristic SHOULD BE connected with your job? (none at all) 1 2 3 4 5 (maximum)

   (c) HOW IMPORTANT is this characteristic TO YOU? (not important) 1 2 3 4 5 (most important)

6. The co-operation and assistance received from co-workers (excluding physicians) in my job setting.

   (a) HOW MUCH of the characteristic IS THERE NOW connected with your job? (none at all) 1 2 3 4 5 (maximum)

   (b) HOW MUCH of the characteristic SHOULD BE connected with your job? (none at all) 1 2 3 4 5 (maximum)

   (c) HOW IMPORTANT is this characteristic TO YOU? (not important) 1 2 3 4 5 (most important)

7. The authority to direct other staff members connected with my position.

   (a) HOW MUCH of the characteristic IS THERE NOW connected with your job? (none at all) 1 2 3 4 5 (maximum)

   (b) HOW MUCH of the characteristic SHOULD BE connected with your job? (none at all) 1 2 3 4 5 (maximum)

   (c) HOW IMPORTANT is this characteristic TO YOU? (not important) 1 2 3 4 5 (most important)

8. The feeling of personal and worthwhile accomplishment obtained from doing my job.

   (a) HOW MUCH of the characteristic IS THERE NOW connected with your job? (none at all) 1 2 3 4 5 (maximum)

   (b) HOW MUCH of the characteristic SHOULD BE connected with your job? (none at all) 1 2 3 4 5 (maximum)

   (c) HOW IMPORTANT is this characteristic TO YOU? (not important) 1 2 3 4 5 (most important)

9. The opportunity, in my job, to participate in educational programs.

   (a) HOW MUCH of the characteristic IS THERE NOW connected with your job? (none at all) 2 3 4 5 (maximum)

   (b) HOW MUCH of the characteristic SHOULD BE connected with your job? (none at all) 3 4 5 (maximum)

   (c) HOW IMPORTANT is this characteristic TO YOU? (not important) 1 2 3 4 5 (most important)

10. The quality of the physician-nurse relationship in this hospital (that is, the amount and type of professional interaction, co-operation, and teamwork).

    (a) HOW MUCH of the characteristic IS THERE NOW connected with your job? (none at all) 1 2 3 4 5 (maximum)

    (b) HOW MUCH of the characteristic SHOULD BE connected with your job? (none at all) 1 2 3 4 5 (maximum)

    (c) HOW IMPORTANT is this characteristic TO YOU? (not important) 1 2 3 4 5 (most important)

11. The opportunity to provide an acceptable standard of patient care due to an adequate nurse-patient ratio.

    (a) HOW MUCH of the characteristic IS THERE NOW connected with your job? (none at all) 1 2 3 4 5 (maximum)

    (b) HOW MUCH of the characteristic SHOULD BE connected with your job? (none at all) 1 2 3 4 5 (maximum)

    (c) HOW IMPORTANT is this characteristic TO YOU? (not important) 1 2 3 4 5 (most important)

12. The recognition obtained from my supervisor for the work that I do.

    (a) HOW MUCH of the characteristic IS THERE NOW connected with your job? (none at all) 1 2 3 4 5 (maximum)

    (b) HOW MUCH of the characteristic SHOULD BE connected with your job? (none at all) 1 2 3 4 5 (maximum)

    (c) HOW IMPORTANT is this characteristic TO YOU? (not important) 1 2 3 4 5 (most important)

13. The opportunity, in my job, to share in determination of methods and procedures.

(a) HOW MUCH of the characteristic IS THERE NOW connected with your job?	(none at all)	1 2 3 4 5 (maximum)
(b) HOW MUCH of the characteristic SHOULD BE connected with your job?	(none at all)	1 2 3 4 5 (maximum)
(c) HOW IMPORTANT is this characteristic TO YOU?	(not important)	1 2 3 4 5 (most important)

14. The accountability to patients inherent in my position (that is, my personal responsibility for the provision of a professional standard of nursing care).

(a) HOW MUCH of the characteristic IS THERE NOW connected with your job?	(none at all)	1 2 3 4 5 (maximum)
(b) HOW MUCH of the characteristic SHOULD BE connected with your job?	(none at all)	1 2 3 4 5 (maximum)
(c) HOW IMPORTANT is this characteristic TO YOU?	(not important)	1 2 3 4 5 (most important)

15. The opportunity for career advancement to other than administrative positions.

(a) HOW MUCH of the characteristic IS THERE NOW connected with your job?	(none at all)	1 2 3 4 5 (maximum)
(b) HOW MUCH of the characteristic SHOULD BE connected with your job?	(none at all)	1 2 3 4 5 (maximum)
(c) HOW IMPORTANT is this characteristic TO YOU?	(not important)	1 2 3 4 5 (most important)

16. The opportunity to exercise independent judgement in my job.

(a)	HOW MUCH of the characteristic IS THERE NOW connected with your job?	(none at all) 1 2 3 4 5 (maximum)
(b)	HOW MUCH of the characteristic SHOULD BE connected with your job?	(none at all) 1 2 3 4 5 (maximum)
(c)	HOW IMPORTANT is this characteristic TO YOU?	(not important) 1 2 3 4 5 (most important)

The remainder of the questionnaire is included to determine the degree to which certain variables are related to job satisfaction.

Please indicate how strongly you agree or disagree with each of the following five statements concerning your job by circling the appropriate number between 1 (strongly disagree) and 7 (strongly agree)

1. I have clear planned goals and objectives for my job

   (strongly disagree) 1 2 3 4 5 6 7 (strongly agree)

2. I know that I divide my time properly

   (strongly disagree) 1 2 3 4 5 6 7 (strongly agree)

3. I know what my responsibilities are

   (strongly disagree) 1 2 3 4 5 6 7 (strongly agree)

4. I know exactly what is expected of me

   (strongly disagree) 1 2 3 4 5 6 7 (strongly agree)

5. I feel certain about how much authority I have on the job

   (strongly disagree) 1 2 3 4 5 6 7 (strongly agree)

DEMOGRAPHIC INFORMATION

PLEASE CHECK ONE:

AGE

20-29 yrs. _____
30-39 yrs. _____
40-49 yrs. _____
50 yrs and over _____

HAVE YOU PREVIOUSLY RESPONDED TO A JOB SATISFACTION QUESTIONNAIRE FROM THIS INSTITUTE?

Yes _____
NO _____

PRESENT EMPLOYMENT STATUS

Full Time _____
Part Time _____

JOB SETTING

Staff Nurse, Station 30 _____
Staff Nurse, Station 40 _____
Administrator (Head Nurse or Supervisor) _____
None of the Above _____

YEARS OF NURSING EXPERIENCE

Full Time _____yrs
Part Time _____yrs

IF YOU HAVE YOUR CHOICE WILL YOU BE WORKING IN THIS HOSPITAL THREE YEARS FROM NOW?

Certainly _____
Probably _____
Not Sure _____
Probably Not _____
Certainly Not _____

EDUCATION

RN _____
BScN _____
Other (please specify) _____

APPENDIX II

COVERING LETTER

PROVINCIAL CANCER HOSPITALS BOARD

PHONE 432-8771
11560 UNIVERSITY AVENUE
EDMONTON, ALBERTA, CANADA
T6G 1Z2

September, 1981

Dear Registered Nurse:

The second phase of the study to investigate sources of nurses' job satisfaction/dissatisfaction within the Cross Cancer Institute is now being undertaken. It is hoped that the results of this study will assist management to address those issues which you and your colleagues identify as important contributors to the quality of your jobs.

The study will have the greatest value to the nursing staff if the opinion of every nurse employed by the Institute is obtained. Your participation in this project would therefore be appreciated.

All responses will be held in complete confidence. The questionnaire has been numbered only to ensure that you are not bothered by reminder letters once you have returned it.

A self-addressed envelope has been enclosed for your convenience. Please return the completed questionnaire in this sealed envelope to the Head Nurse/Supervisor in your area.

The results of the study will be available to you on completion of the project. Should you have any questions or comments concerning this study please contact me at 432-2216.

Thank you for your co-operation.

Sincerely,

Eileen Hourigan (MN Candidate)
Faculty of Nursing
University of Alberta