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A Temporal View of the Turnover Process: Application of a Repeated Measures Design to Two Models of Nurse Turnover.

Albert Willard Holland Jr
Louisiana State University and Agricultural & Mechanical College

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A TEMPORAL VIEW OF THE TURNOVER PROCESS: APPLICATION OF A REPEATED MEASURES DESIGN TO TWO MODELS OF NURSE TURNOVER

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APPLICATION OF A REPEATED MEASURES DESIGN
TO TWO MODELS OF NURSE TURNOVER

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Psychology

by
Albert Willard Holland, Jr.
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December, 1983
To
"La"
ACKNOWLEDGMENTS

I would like to express sincere thanks to my major professor, Dr. Irv Lane, for his professional guidance during this project and throughout my graduate studies. The author would also like to express thanks to Drs. Laurence Siegel, Steven M. Buco, Perry Preesholdt, Robert C. Mathews, and Jerry A. Wallin for their helpful contributions as members of my committee. Dr. Buco gave very generously of his time and statistical expertise through all phases of this study.

Appreciation is extended to the many hospital nurses and administrative personnel who participated in the project. Their interest and support was indispensable to the study. The support of the Louisiana Hospital Association, the Louisiana State Nurses Association, and the state Department of Health and Human Resources is also acknowledged here.

I am very grateful to my entire family for their unwaivering consideration during the project. Warm thanks to my parents. Thelma, Lillian, Jim, Rob, Gail, Kristen, Susan, Clinton and Dana. The events of the last four years have provided no end of challenges to their patience, their ability to adapt in difficult circumstances, and their capacity to give unselfishly of their time and energy--they have never come up wanting. Very special thanks go to my wife, Lauri, and my son, Dan. Their remarkable endurance and sunny smiles have provided the meaning to my work.
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A TEMPORAL VIEW OF THE TURNOVER PROCESS:
APPLICATION OF A REPEATED MEASURES DESIGN
TO TWO MODELS OF NURSE TURNOVER

ABSTRACT

The principal objective of the present research was to examine Mobley's (1982) contention that a dynamic experimental design is necessary in order to advance our understanding of the cognitive and behavioral events which precede turnover. The one aspect of Mobley's contention tested here was the extent to which a repeated measures design contributes to the predictive power of existing models of turnover. A second objective was to conduct a competitive test between the Mobley, Horner and Hollingsworth (1978) and the Price and Mueller (1981b) models of nurse turnover.

Four non-profit community general hospitals and two government-owned general hospitals provided the subject pool from which a study sample (n=527) of registered nurses was randomly selected. A 53-item employee survey, containing the variables in both turnover models, was mailed (Time 1) to each nurse in the study sample. From those nurses who returned the questionnaires, a dynamic paradigm group with complete data (n=84) was randomly selected to receive additional mailings of the survey two months (Time 2) and four months (Time 3) later. Turnover data was collected at the time of each survey and at the end (Time 4) of the six-month study.

Multiple regression procedures yielded traditional static-paradigm $R^2$s for each turnover model (Mobley $R^2=.29$; Price $R^2=.26$).
The static $R^2$s were then compared to dynamic $R^2$s that took into account the changes that occurred in model variables over time. Although the dynamic paradigm produced slightly higher $R^2$s (Mobley $R^2$=.30; Price $R^2$=.41), neither significant partial correlations of first differences nor significant extra sums of squares resulted. No significant differences were ascertained when the static $R^2$s for each model were compared.

It was concluded that although the dynamic research paradigm does record process events, the method presently does not significantly improve the predictive ability of existing turnover models. At this time, dynamic paradigms can contribute most by delineating the sequence and flow of events which precede turnover. Once this is accomplished, their usefulness in prediction and intervention may improve. It was further concluded that both theoretical models considered here were comparable in their modest predictive ability.
IN T R O D U C T I O N

In a recent article assessing the current state of turnover research, Mobley (1982) points out that several significant issues have been inadequately addressed. Specifically, he asks "Where is the process in turnover process research?" In a brief methodological critique, Mobley criticizes the "static" research paradigms that have traditionally been used to investigate determinants of turnover. In so doing, Mobley joins many other theorists, such as March and Simon (1958) and Locke (1976), who stress the importance of understanding the cognitive and behavioral events that precede the act of leaving an organization. He notes that little further understanding of these events will ensue from the continued use of research designs which fail to address three elements fundamental to any process: (1) change, (2) feedback, and (3) interactions over time. Mobley contends that it is time to adopt a dynamic paradigm which is sensitive to the temporal process. He asserts that repeated multivariate measures, such as multiple surveys, are required to examine adequately the process of turnover.

The present study investigated the relative contributions of the repeated measures paradigm to turnover research. Specifically, this study applied the multiple survey methodology to two existing models of nurse turnover. Although any occupational group could conceivably have been utilized, nursing presently lends itself well to such an application. There are three reasons for this: (1) The high rate of attrition among nurses has long been recognized as being problematic (American Nurses' Association, 1962; National Health Care Management Center, 1981);
(2) The voluminous body of research into nurse turnover clearly illustrates the application of traditional "static" paradigms to the problem and the limitations inherent in such designs; (3) There presently exist two viable theoretical models of nurse turnover (Mobley, Horner, and Hollingsworth, 1978; Price and Mueller, 1981b) which differ in sensitivity to process events. Before detailing the present study, a closer examination of these three points will serve to clarify the nature and context of the present research problem.

Attrition in Nursing

The profession of nursing is presently struggling with two serious problems. The first is that of an ever-increasing shortage of qualified nurses to meet the demands of the expanding health care field, and the second is an excessively high rate of voluntary turnover among nurses in hospitals. These two difficulties are not unrelated and have plagued the profession, society, and hospital patients for decades (Price and Mueller, 1981a).

Since the second World War, a chronic nationwide shortage of nurses has gradually become more serious as enrollments in nursing school have declined and as health care delivery services have expanded in size and complexity (Fralic, 1980). Figures recently compiled by the National Health Care Management Center (1981) reveal that eighty percent of American hospitals have unfilled nursing jobs. In some states, such as California and Arizona, approximately twenty percent of the budgeted hospital vacancies are never filled (Cunningham, 1979; Fralic, 1980). The present nationwide supply of nurses is about 440 nurses for every 100,000 people, and Louisiana has far fewer, with a statewide average of
279 nurses per 100,000 people (Pratt, 1982). White (1980), Fralic (1980), Pratt (1982) and others cite cultural changes, such as the women's movement, as the reasons behind declining enrollments in nursing schools and the continuing nurse shortage. These authors point out that, as increasingly diverse career opportunities are made available, fewer women choose to enter a field such as nursing when more prestigious and lucrative jobs are available elsewhere. Some writers (e.g. Wandelt, Pierce, and Widdowson, 1981a) suggest that difficulties inherent in the job of nursing can account for both the shortage of nurses and their attrition. Whether or not this is true, there is little doubt that the shortage in the field has been compounded by excessive turnover.

The high rate of attrition among hospital nurses is well documented in the technical literature (American Nurses' Association, 1954, 1962; Price and Mueller, 1981abc; Wandelt, Hales, Merwin, Olsson, Pierce, and Widdowson, 1980) and has been a topic of considerable dialogue in the trade journals (Godfrey, 1978; Wolf, 1981) and in the media (Pratt, 1982). Price and Mueller (1981a) note that during the late 1950's and early 1960's the crude annual turnover rate for hospital nurses was approximately fifty percent. The American Nurses' Association places the present national average turnover rate at forty percent (Wolf, 1981), and the National Health Care Management Center (1981) estimates that it ranges between thirty-five and sixty percent. The Center also found that new graduate nurses have an average length of stay in hospital jobs of only eight to ten months.

Although some degree of turnover is beneficial and desirable to an organization, the excessive rate seen in nursing can have an important negative impact upon the ability of a hospital to provide quality
health care. Price and Mueller (1981a) and Price (1977) list the following effects of excessive turnover:

(1) Attempts by the hospital system to maintain or increase organizational effectiveness and control are threatened.

(2) Recruiting, hiring, training, and supervising replacement personnel is expensive; recruiting costs alone exceed $800, and adding the other costs, a hospital must often spend $2,500-$3,000 to replace a single registered nurse (Wolf, 1981; National Association of Nurse Recruiters, 1980).

(3) Faced with rapid turnover, hospitals are less able and willing to invest in the establishment of alternative career tracks for nurses; this in turn fuels turnover.

(4) The degree of integration within the organization and within the work groups is greatly reduced due to the continual disruption of primary relationships and group cohesion.

Society, the hospital, its employees, and patients would all benefit from a reduction of nurse turnover. Consequently, interest in conducting research in this area has been high. The nature of the paradigms utilized in this research are now described.

**Types of Research Paradigms**

A review of the literature on turnover, and on nurse turnover in particular, reveals numerous studies of the problem. The research designs employed in these studies can be classified into four major types: (1) single-survey, (2) intervention, (3) two-step longitudinal, and (4) repeated measures. Table 1 illustrates this taxonomy with a sample of studies which utilize each paradigm. These studies are drawn
primarily, but not exclusively, from the nursing literature; two works from general turnover research are included to illustrate more fully the manner in which the repeated measures paradigm has been utilized. Because the design of a study determines the nature of the obtained data and consequent knowledge, it is evident that each paradigm can contribute in some way to our understanding of turnover. However, the major types outlined above are of varying sensitivity to the process events which culminate in the act of leaving. With this in mind, let us now examine the relative contributions of the four major methodological approaches to the study of turnover.

**Single-Survey Studies**

The majority of studies in the area of nurse turnover employ a single multivariate survey of practicing nurses. This is usually a pencil-and-paper questionnaire which is mailed out to participants and which assesses their attitudes toward various job facets such as working conditions, professional autonomy, and salary. Demographic items such as age and family ties are also gathered in an effort to delineate multiple factors associated with job dissatisfaction. Single survey studies are based upon the assumption that if correlates of dissatisfaction can be identified, these conditions can be changed by the hospital and turnover thereby reduced (Godfrey, 1978).

In one of the more sophisticated single surveys conducted in this area, Wandelt and colleagues (1980, 1981a, 1981b) collected data from thirty-five hundred professionally active and inactive nurses and supplemented the questionnaire with group interviews. The interviews gathered qualitative data which elaborated upon issues addressed in the questionnaire. The researchers sought to determine reasons behind both the
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Asterisk (*) indicates a theoretical model of nurse turnover.
shortage of hospital nurses in Texas and their high rate of attrition. Wandelt organized the results of her study around a structure-process-outcome model of health care delivery. The structural elements of a health institution are identified by Wandelt as being those which comprise the context in which nursing care is given. These include hospital policies, staffing patterns, scheduling, job roles and others. The process of nursing care is defined by Wandelt to be those job elements which "define the role of the nurse as a professional". Here the researchers include nurse input into policy formulation and decision-making, as well as the autonomy, recognition, responsibility and authority accorded to other professional disciplines. Structure and process interact to determine quality of patient care.

Dissatisfaction is said to arise when structure and process elements are poorly integrated and the outcome is poor patient care. Specifically, the nurses in Wandelt's study cited dissatisfaction with inconsistent support from administrative personnel, lack of inservice and continuing education opportunities, low salaries, excessive paperwork, variable work schedules, and an overall lack of support for the professional role of the nurse. Wandelt identified a "persistent conflict between hospital administration and nurses in the perception of nurse professionalism". She concluded that outmoded administrative attitudes and hospital policies (structure) lead to constrictive job conditions (process) which prevent nurses from providing quality, professional health care. Such conditions contribute to nurses leaving hospitals and to nurses leaving the profession.

Many other researchers have used the single survey methodology to collectively produce a long list of descriptive correlates linked in
various fashion to turnover. Godfrey (1978) surveyed seventeen thousand nurses and found that nurses felt ambivalent about their field; the many aspects of nursing that were felt to be quite satisfying were counter-balanced by many that were dissatisfying. Among the major satisfactions of the profession were (1) helping people in distress, (2) doing work that was interesting and socially esteemed, and (3) meeting the intellectual challenge. The major dissatisfactions included (1) unsafe practices such as dangerous understaffing and toleration of incompetent nurses, (2) poorly trained and indifferent leadership throughout the hospital hierarchy, and (3) an inadequate flow of communication between levels. A study by Power (1979) confirms the feelings of a lack of support from leadership and excessive paperwork found in previous studies. Power's respondents listed job conditions that interfered with the provision of adequate patient care as more of a problem than insufficient pay. Studies by Jamal (1981), Hughes (1979), and Myrtle and Robertson (1979) identified additional factors such as rotating work shifts, team identity, and interaction with supervisors.

Beatty and Kulisch (1975) helped to codify the list of correlates by building upon the work of Porter and Steers (1973). In their study, Beatty and Kulisch used the one-shot survey to investigate four areas that research had indicated were related to job dissatisfaction and turnover in other fields. These four areas tapped (1) organization-wide factors such as pay and promotion policies and hospital size, (2) immediate work environment factors such as supervision and poor group interaction, (3) job content factors such as repetitiveness and autonomy, and (4) personal factors such as age, tenure, interests, and family responsibilities. The authors measured a total of fourteen variables and
correlated them with "propensity to leave" which was the self-reported dependent variable. Together, all fourteen variables accounted for just under forty percent of the variance in the dependent variable. The job content factors comprised the area accounting for most of the explained variance. The strength of the Beatty and Kulisch study is that it distinguishes itself from the mainstream of single survey studies by virtue of the fact that it is built upon a well-defined theoretical base and attempts to be predictive. Unfortunately, the one-shot design necessitates the use of a readily available dependent variable such as self-reported "propensity to leave" rather than actual turnover.

The shortcomings of the single survey methodology are typified in the research conducted by Wandelt and colleagues. As Lane, Mathews, and Prestholdt (1981) point out in their critique of this work, the study provides excellent descriptive information about conditions associated with nurse attrition, but it suffers from several weaknesses. Specifically, Wandelt's study fails to (1) explain why some dissatisfied nurses leave while other dissatisfied nurses stay, (2) provide a method by which to identify potential leavers, and (3) yield a predictive model of nurse turnover. Lane, et al. correctly attribute these weaknesses to a deficient methodology, and they conclude their critique by stating that explanatory and predictive power will be increased only through the use of a longitudinal predictive design that correlates antecedent data gathered on an incumbent population with later turnover in that population. The design endorsed by Lane, et al. can be found in Table 1 and will be discussed in greater detail below.
Intervention Studies

Studies which directly attempt to reduce attrition differ from single survey studies in both methodology and in what they contribute to our understanding of turnover. Intervention studies such as those in Table 1 attack various facets of job dissatisfaction by altering some aspect of the work or working conditions. Job satisfaction and turnover are usually assessed informally before and after the intervention. Changes in the dependent variable are typically attributed to the action of the intervention program, although little effort is usually made to assess or control for relevant extraneous variables. Intervention studies are by nature longitudinal; however, they are distinguished in Table 1 from other longitudinal designs by virtue of their principal purpose and salient characteristic which is the testing of an intervention program.

Studies which address working conditions within hospitals include those of Buys (1981) and Sobiech and Weiss (1980). According to Buys, several hospitals in southern California have provided nurses with greater autonomy and control over policies, scheduling, and continuing education. Child care services and bonus pay for unscheduled work have also been made available. Those changes have apparently resulted in decreased nurse turnover and fewer job vacancies. Along similar lines, Sobiech and Weiss report that alterations in scheduling and financial incentives have drastically reduced the problem of retention in a medical center in Burbank, California. Nightduty nurses can now work seventy-two hours each pay period, receive pay for eighty hours, and have every other weekend off. This type of wage and scheduling innovation has enabled the hospital to enjoy the lowest turnover rate in California and a waiting list for night duty.
The National Health Care Management Center describes programs in Arizona (Moore, 1979) and in Illinois (Araujo, 1980) that attack turnover from the perspective of professional development. Moore's program in Tucson established a career path for nurses which allowed them to progress through three levels of clinical nursing positions. Within the first six months of the program, staff nurse turnover had fallen from fifty-nine to twenty-nine percent. Although Moore emphasizes the effect of the career pathing upon attrition, changes in other factors (e.g., job structure) could also account for the reduced turnover. In Chicago, Araujo initiated a program which allowed staff nurses more input into issues concerning them. Nurses actively participated in planning and in decision-making. The hospital subsequently experienced a significant decrease in the number of RN terminations. Similar results were obtained in other programs (Giles and Reuter, 1981) designed to increase professional participation by nurses in the management of treatment issues.

Other factors addressed in intervention studies include morale and disconfirmed job expectations. Sata and Shenning (1968) conclude that a series of small, didactic training groups for psychiatric nurses improved morale and consequently decreased turnover rates. Consolvo (1979) found that the establishment of small support groups, designed to deal with nurse stress, had a positive impact upon retention of staff in a newborn intensive care unit. Roell (1981) utilized an internship program to orient newly graduated nurses to the hospital environment and therefore reduce the number of new employees who leave due to unmet job expectations. A "bicultural training" program was shown to be a similar cost-effective way of easing new graduates into the work world (Holloran, Mishkin, and Hanson, 1980; Schmalenberg and Kramer, 1979). "Bicultural" programs pair
new staff with more experienced nurses and promote the acquisition of realistic expectations by both members of the dyad. Finally, Seybolt and Walker (1980) demonstrated the value of a survey feedback intervention with hospital nurses. Although post-intervention measures are not provided, the authors assert that the project resulted in a considerable reduction of the $425,000 that nurse turnover was costing the hospital each year.

As mentioned earlier, the majority of intervention studies on nurse turnover are poorly controlled and incompletely reported. Pre- and post-intervention measures are usually informal (if even taken), and relevant extraneous variables are rampant. Although most studies lack experimental sophistication, the intervention paradigm is quite valuable to the study of nurse turnover. Our understanding of the problem is greatly increased if variables, which have been found in correlational studies to be related to turnover, can be individually manipulated to reduce attrition. Arguments for the causal involvement of that variable are subsequently more justifiable, and the conditions and interactions to which that variable is subject may now be identified with greater certainty.

Two-Step Longitudinal Studies

A third type of paradigm found in nurse turnover research is the two-step longitudinal study. In this design, a single survey of incumbent nurses is taken to gather data on a variety of variables believed to be related to turnover. The criterion (turnover) data are collected after a time interval of several months, and correlations between antecedents and attrition are then derived. The two-step study is the design typical in general turnover research (Mobley, 1982) but is only lately becoming a common paradigm in nursing research. The strength of the two-step design
is that the "snapshot" of factors present prior to turnover enable researchers to compare the job characteristics, working conditions, and attitudes of nurses who leave the hospital with those who remain. The advantages of this methodology over that of the single-survey study are obvious; not only can actual turnover be used as the dependent variable, but predictive models of turnover can be constructed and tested, as well. The two-step paradigm places greater emphasis upon the temporal dimension of turnover than do the single survey and intervention designs. This somewhat allows us to perceive turnover as being a process consisting of events leading up to the act of leaving. As indicated in Table 1, the three major models of nurse turnover are based upon the two-step design.

Walek (1979) employed this paradigm to investigate the relationship between locus of control and attrition. Measures of nurse characteristics and measures of perceived organizational characteristics were correlated with subsequent turnover. An internal locus of control was found to be positively related to higher levels of job satisfaction, and job satisfaction was more strongly correlated with turnover. Furthermore, nurses perceiving the hospital "hierarchy of authority" as being highly controlling had odds of staying with the hospital of four to one, whereas nurses perceiving low control had staying odds of twenty-three to one. Walek concludes that her study supports other literature in the field which indicate that nurses want more autonomy and more participation in decision-making (Wandelt, et al., 1980; White, 1980). Sheridan and Vredenburgh (1978) used a two-step design to predict terminations of staff nurses from a prior measure (LBDQ) of their head nurses' leadership style. The authors found perceived leader consideration behaviors to be negatively correlated with turnover and perceived initiating structure to
be positively related. Although the findings of Walek, Sheridan and Vredenberg are not without importance, the use of multiple relevant antecedents makes a more valuable contribution to the understanding of nurse turnover.

A study by Price and Mueller (1981b) illustrates the use of multiple antecedents in a longitudinal design. The authors used an extensive questionnaire in an attempt to develop an inclusive explanatory model of nurse turnover (Figure 1). Over one thousand nurses in seven, short-term general hospitals were surveyed on thirteen organizational and non-organizational variables including job satisfaction and intent to stay on the job. Fourteen months later, Price and Mueller determined which of the nurses in the sample had voluntarily resigned and then analyzed the antecedent interrelationships and the relationship between the antecedents and the criterion. Results of this study led Price and Mueller to propose their causal model of nurse turnover which is discussed in detail below.

The two-step longitudinal paradigm was also applied specifically to investigate the cognitive and behavioral linkages between job dissatisfaction and turnover in a study by Mobley, Horner and Hollingsworth (1978). The study was not designed solely for nurses, however, but included hospital employees from service, technical, and clerical positions, as well. Measures of age, tenure, probability of finding an acceptable alternative job, job satisfaction, thoughts of quitting, intention to search for alternative jobs and intention to stay or quit were gathered one year prior to turnover data. This study served as the basis for an abbreviated version of the Mobley, Griffeth, Hand, and Meglino model of turnover (1979). Subsequent replications of this model (Miller, Katerberg, and Hulin, 1979; Michaels and Spector, 1982) have
also utilized the two-step paradigm. Like the Price and Mueller model, Mobley's abbreviated model (Figure 2) is discussed more fully below.

A final example of the two-step paradigm in nursing research can be found in the work of Lane, Mathews, and Prestholdt (1981). Here the authors have applied constructs developed by Fishbein and Ajzen (1975) to the problem of nurse attrition. Lane, et al. propose to test the causal paths from "distal variables" through withdrawal cognitions to turnover. In this model, the "distal variables" are actually organizational and non-organizational factors which previous interviews and a review of the literature identify as relevant to nurses' decisions to leave or remain with the hospital. Such variables are theorized to be related to beliefs concerning the consequences of leaving or staying and social pressure to leave or stay. These beliefs in turn determine attitudes toward the act which directly influence a nurse's intention to leave or stay. The power of intentions to predict subsequent attrition is, of course, well documented in nursing research (Mobley, et al., 1978; Price, 1981b). Although support for causality has already been acquired on some of the model's paths from research outside of nursing (Fishbein, 1980), validation of this model for nurse turnover will provide the field with a process model quite strong in predictive and explanatory power. The paradigm suggested by Lane, et al. for the validation of the Fishbein model is the two-step longitudinal paradigm.

The two-step paradigm is the most sophisticated research design presently in use and is the dominant method by which causal models of turnover are developed. As shown above, this design is a vast improvement over the single survey and intervention approaches, but it is not without its weaknesses. In his recent article, Mobley (1982) criticizes it for
its insensitivity to the dynamism of the turnover process. Mobley points out that the static nature of this paradigm fails to record change, feedback, and interaction between key variables over time. Certainly not all job incumbents will be at the same point in the turnover process when the initial survey is taken, and it is clear that an individual's perceptions and attitudes are likely to change in many ways prior to collection of the criterion data. Mobley is correct in his assertion that the two-step design "misses the bulk of the process involved in turnover." For instance, all current models of nurse turnover (Table 1) are unidirectional, and although feedback loops may exist between antecedents such as job satisfaction and success of search (Mobley, 1982), the two-step design cannot detect them. The "snapshot" methodology limits our ability to watch the process unfold and places constraints upon our further understanding of turnover.

Repeated Measures Studies

Repeated measures methodology, which permits the systematic observation of change over time, has been employed for quite some time in the biological, social, and physical sciences. However, a review of the literature reveals remarkably few studies which apply this paradigm to turnover in any occupation. Mobley (1982) recommends measures such as "multiple surveys, employee diaries, repeated observations, and researcher-employee interaction on a continuing or regular basis" as possible alternatives to present inadequate measures. He notes that in the general turnover literature, the works of Porter, Crampon, and Smith (1976) and Graen and Ginsburgh (1977) are two such efforts to utilize process-sensitive paradigms.

Porter, Crampon, and Smith (1976) studied the relationship
between organizational commitment and turnover of managerial trainees in a merchandising firm. The researchers followed each trainee from the first day on the job through fifteen months at work. A brief attitude measure was administered at Day 1, Week 2, and Months 2, 4, 6, 9, 12 and 15. Data from these eight measures indicated a marked decline in commitment prior to a trainee voluntarily leaving the organization. The authors conclude that most voluntary turnover occurs following a "complex interplay between attitudes, tentative decisions and firm decisions", and they discuss the need to increase the use of the repeated measures design in order to explore this process. Similarly, there is a need to investigate possible disadvantages, such as subject reactivity, that may be inherent in the repeated measures design. Porter, et al. also point out that the "critical events" in the employee's work life which initiate the turnover process have yet to be identified.

The purpose of Graen and Ginsburgh's (1977) study was to investigate the influence of employee role orientation and employee acceptance by leader upon job perceptions and resignations. Clerical employees with approximately four years tenure responded to an interview and a questionnaire administered six months apart. Data on subsequent turnover and promotions were collected two years after the initial interview. The authors found that both role orientation and acceptance by leader influenced turnover; those employees who were low on leader and role attachments had a greater likelihood of resigning. Although Graen and Ginsburgh took two sets of measures prior to collecting the criterion data, the authors state that the first set of measures (interviews) was in fact a pilot study for the second set (questionnaires). Since the researchers did not repeat identical measures of the variables of interest, this study
is not actually congruent with the method or purpose of the repeated measures paradigm.

The sole example of this paradigm in nursing research is a study conducted by Weisman, Alexander, and Chase (1979). Here the research problem was to identify the determinants of nurse dissatisfaction and turnover. The authors collected information on diverse organizational and nurse characteristics three times over a twelve month period. The purpose of employing a repeated measures paradigm here was to improve upon data obtained from the more common single-survey design. Structured personal interviews, reports from head nurses, and hospital documents were utilized as sources of data on nurses' demographic characteristics, unit structures, perceptions of job and unit, and reasons for resigning.

The authors validated prior studies by finding evidence of a causal sequence in which independent variables such as work autonomy precede job satisfaction, intentions, and eventual turnover. As we shall see, this data is supportive of similar satisfaction-based models of turnover proposed by Price and Mueller (1981b) and Mobley, Horner, and Hollingsworth (1978). Weisman, et al. emphasize that nurses' perceptions of their working conditions are more important determinants of job satisfaction than demographic or job structure characteristics. Furthermore, their findings indicate that the majority of resigning nurses are not leaving the profession but rather are moving laterally into other clinical positions which appear to offer greater opportunity. The results of studies utilizing other paradigms, such as those by Wandelt, et al. and Price and Mueller, are replicated here.

Unfortunately, Weisman and her colleagues stopped short of using the repeated measures paradigm to its full advantage. Specifically, one
population was not followed across the twelve months on the same set of variables. Only a subset of Weisman's total sample contributed data to all three of the measures taken, and only changes in the relatively weak demographic and structural variables were tracked across time. Changes in job satisfaction and perceptions of working conditions were not assessed, despite the fact that these variables predicted the criteria most strongly.

As this paradigm review has shown, the few studies which have utilized dynamic paradigms either do not deal with multiple variables or are seriously limited by methodological weaknesses. The numerous studies which have employed static paradigms cannot, as Mobley has pointed out, hope to investigate turnover as a process. Important information concerning process events would be generated by a study designed to directly address such issues. With this in mind, let us now examine the two models of nurse turnover.

Models of Nurse Turnover

The Price and Mueller Model

Utilizing a two-step longitudinal paradigm, Price and Mueller (1981b) investigated the relationships between organizational and non-organizational variables and the voluntary turnover of nurses. The authors tested a predictive model (Figure 1), which originates with eleven generic factors and proceeds successively through job satisfaction, intent to stay, and turnover. All eleven generic determinants were drawn primarily from research outside of nursing and were based upon Price's (1977) synthesis of that literature. The authors sought to include in the model only determinants that would explain the numerous correlates
of turnover found in previous research; hence, the exclusion of familiar variables such as age and tenure.

Figure 1. The Price and Mueller model of nurse turnover.

The results obtained in testing this model were somewhat disappointing. Most of the determinants were not found to be strongly related to turnover, and support for the causal paths can only be characterized as "mixed". Consistent with the findings of Mobley and others, the effect of job satisfaction upon turnover was through intent to stay. Behavioral intention was found to have the greatest overall impact upon turnover behavior. Job satisfaction was however an important mediator between the determinants and the criterion. In addition, the principal contributors
to job satisfaction were degree of routinization, instrumental communication, promotional opportunity, and participation in decisions. Despite the researchers' attempts to overcome a lack of inclusiveness observed in other theoretical models, the Price and Mueller model only accounted for eighteen percent of the variance in the criterion.

Unfortunately, Price and Mueller's study was deficient in several respects and the model consequently possesses little predictive power. Lane, et al. (1981) point out three deficiencies that have to do more with the mechanics of the study than with the model itself. Deficiencies cited by Lane are as follows:

1. The eleven "determinants" in the model were global variables derived from Price's review of general turnover research rather than from prior nursing studies. They are consequently unable to accurately predict nurse turnover.

2. Many of the items in Price and Mueller's questionnaire may be relevant to employees in industrial settings, but they were not relevant to nurses.

3. The sample of nurses surveyed by the investigators was not representative of the nurse population. Education and training levels in the sample were atypical.

Lane, et al. attribute this model's low level of explained variance to these three deficiencies. Despite the limitations within the study, Price and Mueller's research represents a definite improvement over previous research in nursing. It presently stands as the only empirically validated model developed for the purpose of explaining and predicting
nurse turnover.

The Mobley "Linkage" Model

The second model of turnover emerges from Mobley's efforts (1977, 1978, 1979) to delineate the manner in which an individual reaches the decision to resign. In view of Locke's (1976) report of consistently low satisfaction-turnover correlations, Mobley (1977) proposed several cognitive and behavioral constructs "linking" job satisfaction and turnover. These constructs include thoughts of quitting, thoughts of searching for an alternative job, intention to search, search behavior, evaluation of alternatives, and intention to quit. As Mobley points out, the idea of such linkages is consistent with the previous theoretical work of March and Simon (1958), Fishbein (1967), and Locke (1968, 1976).

As mentioned previously, Mobley, Horner, and Hollingsworth (1978) tested a simplified linkage model (Figure 2) by utilizing hospital employees from nursing, service, technical, and clerical positions. The effects of traditional turnover correlates, such as age, tenure, and satisfaction, as well as linking constructs were examined in a two-step longitudinal paradigm. Results of this study confirmed the authors' expectations that thoughts and intentions mediate the influence of job satisfaction upon turnover. Intention to quit was the only construct found to exert a significant direct effect upon the criterion. This is quite similar to results from Price and Mueller's (1977) work discussed earlier. Unlike Price and Mueller, however, Mobley found that opportunity for alternative employment acted upon "thinking of quitting" rather than directly upon turnover.
In general, the abbreviated Mobley model offers considerably greater explanatory and predictive power than does the Price and Mueller model. In its first test (Mobley, 1978), the model explained twenty-six percent of the variance in turnover. Miller, Katerburg, and Hulin (1979) subsequently applied the model to samples undergoing significantly greater turnover and found that the model accounted for approximately fifty-five percent of the variance. The improved explained variance may not only be due to less restriction of criterion variance but also due to the collapsing of the seven model variables into four more general constructs: (1) job satisfaction, (2) career mobility, (3) withdrawal cognitions, and (4) turnover.

The work of process theorists such as Mobley, et al. has produced strong support for the view that turnover is a temporal process of events and cognitions which culminate in the act of leaving. Since both the Price and Mueller and Mobley, et al. models of turnover explicitly acknowledge process events, and because the models differ significantly in the detailing of that process, a comparison of the two within a dynamic paradigm will be of interest.
The Present Research

Origin and Purpose

The present study sought to test Mobley's (1982) hypothesis that a dynamic experimental paradigm is necessary in order to advance our understanding of the cognitive and behavioral process which precedes turnover. As a review of the literature has shown, very few studies have employed such a paradigm, and those that have done so, have utilized them inadequately. Furthermore, the apparent advantages of a repeated measures design have not yet been applied to any cognitive process model.

An additional objective of this study was to compare two existing models of nurse turnover. The models proposed by Price and Mueller (1981) and Mobley, Horner, and Hollingsworth (1978) are process models suitable for comparison within a repeated measures format. The former model is the only one which has been developed specifically for nurses, and the latter model has indirectly demonstrated considerable predictive and explanatory power for this occupation.

Hypotheses

Based upon the review of the literature, two hypotheses have been generated regarding methods and models.

Hypothesis 1: Use of the repeated measures paradigm will increase the explanatory and predictive power of both theoretical models.

Hypothesis 2: Under both paradigms the Mobley model will demonstrate significantly greater explanatory and predictive power for nurse turnover than will the Price model.

The important question of criterion contamination under the repeated measures paradigm is an issue that will be examined in the data.
analysis phase of this study. However, at present there is insufficient prior research to enable the formulation of an hypothesis on the matter.
**METHOD**

**Subjects.** Four non-profit, community general hospitals and two government-owned general hospitals provided the pool of nurses from which a study sample of 527 non-supervisory registered nurses were drawn. The non-profit, community general hospital is presently the most common type of hospital in the country (United States Bureau of the Census, 1981; United States Department of Health and Human Services, 1981). This organizational form constitutes approximately 46 percent of all hospitals and averages about 210 beds (United States Department of Health and Human Services, 1981). The community general hospital under state or local government control is the next most prevalent type. This form accounts for 25 percent of all hospitals and averages 117 beds. Using these two hospital types to provide the subject pool helped to ensure a representative study sample. The use of four community and two government hospitals was to (1) maintain for sampling purposes the approximate 2:1 national ratio of general hospitals under community control vs. government control, and (2) provide sufficient numbers of nurses to allow comparisons by hospital type.

The selection of registered nurses from the pool proceeded in a random fashion until 527 nurses were chosen who constituted a sample representative of national nursing educational norms. Careful attention to this variable addressed the deficits in Price and Mueller's (1981b) sample that were noted earlier by Lane, et al. (1981). Data compiled by the United States Department of Health and Human Services (1981) on registered hospital nurses indicate that approximately 80% hold nursing diploma or associate degrees, 18% hold baccalaureate degrees, and 2% have masters or doctorate degrees. The composition of the present research sample
(61%, 38%, and 1%, respectively) indicates a somewhat more educated group but does not deviate significantly from these averages. In addition, the study sample consisted of both full-time (80%) and part-time (20%) nurses.

Design. This research utilized a 2 (paradigm) x 2 (model) design in a field study. The two paradigms used were the two-step longitudinal (Static) and the repeated measures (Dynamic) paradigms. The two models used were the Price and Mueller (1981b) and the Mobley, Horner and Hollingsworth (1978) models.

Instruments. The survey questionnaire presented in Appendix A was the only instrument employed in the study. This instrument was a 53-item questionnaire which included measures of all constructs found in the two nursing models. All measures used were in the form originally employed by the model authors with the exception of Mobley's two job satisfaction measures; the work of Mobley et al. (1978) and that of Miller, et al. (1979) found the Work Scale of the Job Descriptive Index (Smith, Kendal and Hulin, 1969) and the GM Faces Scale (Kunin, 1955) to be comparable and yet more parsimonious measures of job satisfaction than the entire Job Descriptive Index (JDI) and the Brayfield and Rothe (1951) Index of Job Satisfaction employed originally by Mobley.

Use of a single instrument allowed both nursing models to be applied simultaneously to all of the subjects and avoided any bias that could have been introduced through the use of separate subject groups for each model. A comparison of the models was accomplished by extracting each model's items from the keyed instrument.

Procedure. The researcher first made personal contact with the Louisiana
chapters of the American Nurses Association and the American Hospital Association to explain the project and to seek their involvement. Although this involvement was to be minimal, evidence to other participants that these associations had reviewed and endorsed the study was intended to increase the likelihood that the study would be viewed in a positive manner. The Louisiana Hospital Association also assisted in the selection of the six hospitals which provided the subject pool.

With the support of the professional associations, the researcher next made personal contact with the administrators and nursing directors of the pool hospitals. These meetings were to explain the project and solicit support. Nursing directors were asked to provide job position data on registered nurses within their hospitals for the purpose of constructing a sample, and personnel departments were asked to track turnover within the sample.

Once the sample (n=527) was selected, all of the nurses within the sample were mailed the survey instrument (Appendix A) and an accompanying cover letter (Appendix B) at Time 1 (See Figure 3). The cover letter was one adapted from Price and Mueller which described the project, ensured confidentiality of responses, and solicited the nurse's participation. A stamped envelope, addressed to this researcher, was included with each questionnaire to facilitate a prompt and direct return.

Two hundred and twenty-eight nurses (43%) responded to the Time 1 questionnaire. Utilizing the results of the first survey, the subject sample was divided into two groups (Control and Experimental). Division of the sample was made on the basis of stated intentions to
leave or to stay, so that the two groups contained equivalent proportions of nurses who were likely leavers. One hundred and sixty-seven nurses were assigned to the experimental group and 61 to the control group. These numbers were chosen to accommodate the requirements of data analysis, assuming a 50% rate of return for subsequent questionnaires and a 50% dropout rate from the experimental group over the course of data collection.

After the initial survey, only nurses in the experimental group were administered the questionnaire again two months (Time 2) and four months (Time 3) later. These two administrations followed the same mailing procedure employed at Time 1. Criterion data were collected from personnel departments every two months at Times 2, 3 and 4. The entire process of data collection required six months.

<table>
<thead>
<tr>
<th>Price</th>
<th>CONTROL + Survey</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mobley</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Price</th>
<th>EXPERIMENTAL + Survey</th>
<th>Survey + Criterion</th>
<th>Survey + Criterion</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mobley</td>
<td>(Time 1)</td>
<td>(Time 2)</td>
<td>(Time 3)</td>
</tr>
</tbody>
</table>

Figure 3. Methodological design of the project.

Data Analysis. When making comparisons of paradigms and models, only information collected from the experimental group was used in the
analyses (See Figure 4). This enabled all comparison $R^2$s to be derived from the very same subjects rather than from separate subgroups which may differ in undetermined ways.

Traditional regression procedures were used to assess the predictive ability of the variables under both models. Hypothesis 1 was tested by comparing the $R^2$ obtained under the static paradigm with that obtained under the dynamic paradigm. Additionally, partial regression weights of first differences for the independent variables were computed on the dynamic paradigm data. Higher $R^2$s and significant first differences obtained here would be supportive of Hypothesis 1. A test of Hypothesis 2 was made by directly comparing the amount of criterion variance explained by each theoretical model. A higher $R^2$ for the Mobley model would be supportive of Hypothesis 2. Multiple regression procedures were also used to identify the best predictors.

To check for criterion contamination on the part of the repeated measures paradigm, a t-test for binomial data was used to compare the total turnover which occurred in the control and experimental groups. Since the subjects in the two groups were matched at the beginning of the study on intent to leave, any significant differences in total turnover between the two groups could be attributed to effects of the paradigms.

Analyses by hospital ownership and by extent of employment were performed to explore differences within the sample, and post-hoc analyses of variance were used to investigate changes in variables over time.
RESULTS

Results of analyses which characterize the study sample will be presented first. These analyses examined sample subgroups on demographic, perceptual, and criterion variables. Results pertaining to a comparison of the two paradigms will be presented next. Data relating to their relative predictive contributions will be outlined here initially, followed by data concerned with their relative explanatory contributions. Finally, the results of analyses which compare the two theoretical models will be presented.

Characteristics of the Sample

Demographics. The composition of the study sample on four demographic variables is shown in Table 2. Extent of employment, general training, age and tenure are depicted separately for the control group, the experimental group, and the total sample. The experimental group is further subdivided into those nurses with complete data at Times 1 and 2 (used to test the hypotheses) and those nurses with incomplete data. Instances of missing data on any model variables excluded those persons from paradigm and model analyses. However, these nurses were included in several descriptive analyses in which missing data was not a problem.

Turnover. Voluntary turnover (excluding retirements and terminations) among the sample of survey respondents was 11.6% (n=26) over the course of the six-month study. This translates to an annual quit rate of 23.2%. Within the experimental group, twenty-one nurses resigned during the study: four between Times 1 and 2, nine between Times 2 and 3, and eight...
### TABLE 2.

DEMOGRAPHICS OF THE STUDY SAMPLE*

<table>
<thead>
<tr>
<th>GROUP</th>
<th>EMPLOYMENT</th>
<th>TRAINING</th>
<th>AGE</th>
<th>TENURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
<td>Diploma or Associate</td>
<td>Masters or Ph.D.</td>
</tr>
<tr>
<td>CONTROL n=61</td>
<td>76</td>
<td>24</td>
<td>59</td>
<td>40</td>
</tr>
<tr>
<td>EXPERIMENTAL n=167</td>
<td>81</td>
<td>19</td>
<td>62</td>
<td>37</td>
</tr>
<tr>
<td>Complete Data n=84</td>
<td>78</td>
<td>22</td>
<td>64</td>
<td>35</td>
</tr>
<tr>
<td>Incomplete Data n=83</td>
<td>83</td>
<td>17</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>TOTAL SAMPLE n=228</td>
<td>80</td>
<td>20</td>
<td>61</td>
<td>38</td>
</tr>
</tbody>
</table>

*Figures given are percentages of row totals.
between Times 3 and 4 (See Figure 3). The rate of voluntary turnover among subjects who did not respond to the survey was 10.7%, or an annualized rate of 21.4%. Turnover among part-time nurses was greater than that for full-time nurses, $t(222)=2.04$, $p<.05$. However, the number of voluntary quits among nurses in government-owned, non-profit hospitals was not significantly different from that in community-owned, non-profit hospitals, $t(222)=.611$, $p>.1$.

The question of criterion contamination by repeated survey administrations was addressed by comparing turnover in the control and experimental groups. No significant difference $t(222)=.873$, $p>.1$, was found between the groups, indicating that the process of repeated surveys did not influence the nurses to either quit or remain in their jobs.

Hospital Ownership and Extent of Employment. All of the nurses who responded to the questionnaire at Time 1 ($n=228$) were categorized according to the ownership (state vs. community) of the hospital in which they worked and the extent to which they were employed there (full-time, vs. part-time). A series of twenty-three $t$-tests were performed to explore the differences between nurses in the categories. Seven of these tests were significant for hospital ownership, and seven tests were also significant for extent of employment. The specific variables and $t$ values are reported in Appendix C.

Paradigm Comparisons

Prediction. To test Hypothesis 1, which stated that use of the repeated measures paradigm would increase the predictive power of both models,
only questionnaires from the experimental group were employed. Eliminating nurses who left in Time Block A (See Figure 4), or who had any missing data on the variables in either model at Time 1 or Time 2, reduced the sample size for the paradigm comparisons (n=84). Time 3 data was not analyzed due to the low number of leavers in Time Block C who provided complete data. Therefore, the Time 2 values of the Mobley, et al. and Price and Mueller variables (See Table 3) were used to predict the total turnover occurring between Time 2 and Time 4, that is turnover occurring in both Blocks B and C together. The model $R^2$s generated by the fixed Time 2 variables were then compared to the model $R^2$s generated when change variables, calculated from the differences between Time 1 and Time 2 values, were added to the original fixed models. The change variables employed here were scores representing any shift that occurred in the original model variables between Time 1 and Time 2 (See Table 4).

![Figure 4](image)

**Figure 4. Values used for paradigm and model comparisons.**

As shown in Table 5, the dynamic paradigm produced higher
TABLE 3
VALUES OF MODEL PREDICTORS AT TIME 1 AND TIME 2

\[ n=84 \]

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>TIME 1 MEAN</th>
<th>S.D.</th>
<th>TIME 2 MEAN</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobley, et al</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to Quit</td>
<td>2.69</td>
<td>1.24</td>
<td>2.71</td>
<td>1.35</td>
</tr>
<tr>
<td>Intention to search</td>
<td>2.81</td>
<td>1.25</td>
<td>2.86</td>
<td>1.33</td>
</tr>
<tr>
<td>Thinking of Quitting</td>
<td>2.83</td>
<td>1.07</td>
<td>2.96</td>
<td>1.15</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>3.83</td>
<td>1.03</td>
<td>3.92</td>
<td>.96</td>
</tr>
<tr>
<td>Acceptable Alternative</td>
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<td>1.09</td>
<td>3.31</td>
<td>1.17</td>
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<tr>
<td>Age-Tenure</td>
<td>.19</td>
<td>1.47</td>
<td>.05</td>
<td>1.60</td>
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<tr>
<td>Price and Mueller</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intent to Stay</td>
<td>4.00</td>
<td>2.02</td>
<td>3.89</td>
<td>2.34</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>19.26</td>
<td>5.90</td>
<td>19.76</td>
<td>6.05</td>
</tr>
<tr>
<td>Opportunity</td>
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<td>8.42</td>
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</tr>
<tr>
<td>Routinization</td>
<td>8.58</td>
<td>3.14</td>
<td>8.58</td>
<td>3.34</td>
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<tr>
<td>Participation</td>
<td>6.70</td>
<td>4.07</td>
<td>6.62</td>
<td>3.94</td>
</tr>
<tr>
<td>Instru. Communication</td>
<td>21.50</td>
<td>5.36</td>
<td>20.52</td>
<td>5.94</td>
</tr>
<tr>
<td>Integration</td>
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<td>5.73</td>
<td>8.24</td>
<td>6.02</td>
</tr>
<tr>
<td>Pay</td>
<td>10.24</td>
<td>2.89</td>
<td>10.49</td>
<td>2.82</td>
</tr>
<tr>
<td>Distributive Justice</td>
<td>3.30</td>
<td>1.68</td>
<td>3.62</td>
<td>1.64</td>
</tr>
<tr>
<td>Professionalism</td>
<td>1.68</td>
<td>1.91</td>
<td>1.44</td>
<td>2.04</td>
</tr>
<tr>
<td>General Training</td>
<td>2.01</td>
<td>.92</td>
<td>2.06</td>
<td>.91</td>
</tr>
<tr>
<td>Kinship Responsibility</td>
<td>4.71</td>
<td>1.23</td>
<td>4.69</td>
<td>1.27</td>
</tr>
<tr>
<td>VARIABLE</td>
<td>MEAN</td>
<td>S.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mobley, et al</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to Quit</td>
<td>-.02</td>
<td>1.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to Search</td>
<td>-.05</td>
<td>1.91</td>
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<td>Age-Tenure</td>
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<td><strong>Independent Variables</strong></td>
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<td><strong>DYNAMIC</strong></td>
<td><strong>STATIC</strong></td>
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<td>.28</td>
<td>(-.42***)</td>
<td>(-.51**)</td>
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<td>2. Intention to search</td>
<td>(-.07)</td>
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<td>4. Job Satisfaction</td>
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<td>5. Acceptable alternative</td>
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<td><strong>R^2</strong></td>
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<td>.30</td>
<td>.26</td>
<td>.41</td>
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</tbody>
</table>

* * * * p < .05
** * * * * p < .01
*** * * * * * p < .001
\( R^2 \)s for both models; however, significant partial correlations of first differences did not result. An \( F \)-test for extra sums of squares (Neter and Wasserman, 1974) was subsequently performed on the static and dynamic models. Results for the Price and Mueller model were \( F(13,57)=1.07, p>.05 \) and for Mobley's model were \( F(6,71)=1.69, p>.05 \). These tests suggest that the change variables did not significantly improve the predictive ability of the models.

Changes in Variables Over Time. Data relating to the nature of the turnover process is provided by repeated measures of the same variables over time. In order to examine more closely the value changes that occurred in the variables between Time 1 and Time 2, a two-factor, repeated measures analysis of variance (ANOVA) was performed post hoc. Behavioral choice (to remain on the job or to quit), time, and interaction effects were analyzed for each static variable. Since our primary interest is to examine the choice \( \times \) time effect, only those variables with this significant interaction effect are reported here. The analysis of variance indicated a significant choice \( \times \) time effect for one model variable and one research item. The model variable was instrumental communication, \( F(1,143)=6.15, p<.05 \), and the research item was present job search, \( F(1,143)=14.74, p<.001 \). Figures 5 and 6 graphically depict the results for instrumental communication and present job search behavior, respectively. Two to four months prior to leaving, nurses who were to resign their jobs reported a decrease in perceived instrumental communication and an increase in job search behavior.
Figure 5. Instrumental communication as a function of choice and time. (High score implies more instrumental communication.)

Figure 6. Present job search behavior as a function of choice and time.
Model Comparisons

Comparisons of model $R^2$'s within each paradigm reveal little support for Hypothesis 2, which stated that under both paradigms the Mobley model would demonstrate significantly greater explanatory and predictive power than would the Price model (See Table 5). Mobley's variables produced a slightly higher $R^2$ than Price's variables in the static comparison, and yet Mobley's variables generated a lower $R^2$ than Price's variables in the dynamic comparison. As mentioned before, this result is not surprising in light of the sheer number of variables in the Price and Mueller model.

Using a .05 level of significance as the criterion for inclusion, a stepwise regression analysis performed on all fixed variables at Time 2 and on all change variables produced a stronger, more parsimonious static model for this data (See Table 6). The overall $R^2$ of .41 which was produced here is likely to diminish somewhat upon cross-validation.

TABLE 6.

STANDARDIZED PARTIAL COEFFICIENTS
FOR STEPWISE MODEL

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
</tr>
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<tbody>
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<td>1. Actively searching for a job elsewhere</td>
<td>-.34***</td>
</tr>
<tr>
<td>2. Thinking of quitting</td>
<td>.09**</td>
</tr>
<tr>
<td>3. Job satisfaction</td>
<td>.12**</td>
</tr>
<tr>
<td>4. General training</td>
<td>-.10**</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.41</td>
</tr>
</tbody>
</table>

**$p<.01$  
***$p<.001$

This model includes one research variable ("Actively searching for a
job elsewhere"), one variable exclusive to Mobley's model ("Thinking of quitting"), one variable exclusive to Price and Mueller's model ("General Training"), and one construct shared between both models ("Job satisfaction" as measured here by Mobley). Job search behavior and thoughts of quitting were positively correlated with turnover, and job satisfaction and general training were negatively correlated with turnover. One change variable ("Change in instrumental communication") fell just short of the criterion for inclusion in the stepwise model (p=.0586).
DISCUSSION

Research Paradigms

The principal objective of this study was to extend research into the cognitive and behavioral process which precedes turnover. More specifically, it examined Mobley's (1982) contention that a dynamic experimental design, represented here by repeated survey measures, is required in order to advance our understanding of the turnover process. The one facet of Mobley's contention tested by Hypothesis 1 was the extent to which the use of repeated measures improved the predictive utility of a theoretical model. Of secondary interest was the degree to which the paradigm would generate information that improves our understanding of the turnover process.

Utilizing change scores to predict turnover does not appear desirable at this time. As tested here, knowledge of prior trends in a model's variables does not add significantly to the ability of that model to predict turnover. This conclusion must be interpreted in light of several conditions unique to the present research.

First, a two-month time span was employed between survey measures. When considering leavers and stayers, this was a sufficient amount of time to observe significant differential shifts in two variables. However, two months may not be a time period sensitive to important change in many of the variables measured here. Some variables, such as job satisfaction, may change very slowly in value and require a longer time lag between measures. Other variables, such as thoughts of quitting, may shift radically several times within the two months...
as work events affect cognitions. Further multiple-measures research will establish the relative volatility of key variables and the time lags necessary to observe them.

Secondly, insufficient turnover in Time Block C among nurses with complete survey data compelled the researcher to discard variable measures gathered at Time 3. Had the sample size been larger, or had turnover been greater, change values across three points in time would have been available to predict turnover in Block C. How this additional information would have affected our predictive ability is unknown.

Thirdly, only variables contained in a particular static model were used to generate that model's change scores. The relative strength of the variable "Change in instrumental communication" to predict turnover when variables were selected by stepwise regression indicates that some change variables may be good predictors when they do not have a fixed-value counterpart in the same model.

Finally, traditional regression techniques were employed to test the predictive power of the two process models. These techniques were used here in order that $R^2$ and predictor comparisons could be made with the authors' original research and with other turnover studies in the literature. However, this author feels that static data analysis techniques applied to process models are inappropriate for exploring the process. Causal modeling through path analysis and dynamic correlations appears necessary before the utility of change scores can be fully tested.
Although this research suggests that the predictive utility of change variables is not great, they can provide an explanatory contribution to process research. The ability of repeated measures to tap processual change in variables is evident in this study. Persons who quit their jobs experienced a significant decline in instrumental communication and a significant increase in job search behavior two to four months prior to their leaving. These results are consistent with the process sequence proposed in both models considered.

At this time the repeated measures paradigm would seem most useful for outlining the nature and flow of the turnover process by defining sequential stages, causal effects, variable interactions, critical time lags, and feedback loops. Use of the dynamic paradigm is not likely to improve upon prediction unless it is integrated with dynamic statistical techniques. Once that is accomplished, the repeated measures paradigm will be more useful for both turnover prediction and intervention planning.

**Turnover Models**

The second objective of this study was to directly compare the turnover models proposed by Price and Mueller (1981) and Mobley, Horner, and Hollingsworth (1978). As shown by the results, neither of these models accounted for a great deal of variance in the criterion. The low static $R^2$s are particularly striking in light of the relatively short (four month) time period between measurement and criterion collection. The slightly greater explained variance on the part of Mobley's static model is negligible for all practical purposes.
As shown in Table 3, only four selected variables explained considerably more variance than either model alone. In addition, both models are sufficiently similar so that a new, more powerful theoretical model may be produced by combining the elements found in both models. Exploration of this issue is beyond the scope of the hypothesis tested here.

The moderated analyses were made by hospital ownership (state government versus non-profit non-government) and by extent of employment at the hospital (part-time versus full-time nurses). State hospital nurses report more social interaction with friends at work and less kinship responsibility than their non-government counterparts. However, state hospital nurses also report less activity in professional associations and significantly more events occurring at work which cause them to consider quitting their jobs. State nurses also feel that their pay is less equitable than do nurses in non-government hospitals.

There are few surprises in the comparison of part-time and full-time nurses. Part-time nurses tend to have more family ties and strong feelings of responsibility to family members. They also have less professional training. Their part-time status would account for the fact that they socialize less frequently with friends at work, and they feel that it is not difficult to find other acceptable jobs. All of these factors paint a picture of a person who is considerably less integrated in her profession and who has ease of movement to other
employment. Consequently, it is not surprising that turnover is significantly higher among these nurses.

Conclusions

Within the constraints of this study, use of the dynamic research paradigm for predictive purposes appears premature at this time. The repeated measures method does not significantly improve the predictive ability of present turnover models. Given the low $R^2$s of the two models considered here, it is also obvious that stronger models are needed. Nursing can be expected to best advance its understanding of turnover by employing experimental designs and statistical approaches that are directed at building improved predictive models.

Dynamic designs clearly permit observation of process events and are most useful as tools to outline the nature and flow of cognitions and behaviors preceding turnover. However, only after suitable process models have been delineated will the dynamic paradigm offer an appropriate basis for improved prediction and planned intervention. Future research into the process of turnover should focus upon better integrating the element of time into research paradigms and theoretical models. Although static paradigms may be suitable for static models, our understanding of occupational turnover is not likely to improve until more sophisticated process models are built and refined through dynamic approaches.
REFERENCES
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Holloran, S. D., Mishkin, B. H. and Hanson, B. L. Bicultural training for new graduates. Journal of Nursing Administration, 1980, 10(2), 17-24.


Lane, I. M., Mathews, R. C., and Prestholdt, P. H. A Causal Model of Nurse Turnover: Understanding the Nurse's Decision to Leave the Hospital and/or Profession. Research proposal submitted to Louisiana Board of Regents, November, 1981.


APPENDICES
Appendix A

Survey Instrument

\footnote{Item 5 on this instrument courtesy of Patricia C. Smith and copyrighted by Bowling Green State University, Bowling Green, Ohio, 1975.}
INSTRUCTIONS

1. Please answer the questions in the order that they are presented.

2. All of the questions can be answered by either checking (✓) or circling one of the answers. If you do not find the exact answer that fits your case, check or circle the one that comes closest to it.

3. Although some questions may seem to be repetitious, please answer all questions.

4. The answers you give will be completely confidential. It is important that you be as honest as you can in answering this questionnaire.

5. Please seal your completed questionnaire in the enclosed, prepaid envelope, and mail it within 7 days from the date you received it.

THANK YOU FOR YOUR TIME.
1. Are you working full-time or part-time?
   ( ) Full-time
   ( ) Part-time

2. Do you work on a rotating shift or a straight shift?
   ( ) Rotating shift
   ( ) Straight shift

3. If you work on a straight shift, on what shift do you work?
   ( ) Day shift
   ( ) Evening shift
   ( ) Night shift

4. What is the total length of time you have worked in the hospital in any capacity?
   ( ) Less than one year
   ( ) Between 1-3 years
   ( ) Between 3-5 years
   ( ) Between 5-10 years
   ( ) Over ten years

5. Think of your present work. What is it like most of the time? In the blank beside each word given below, write
   for "Yes" if it describes your work;
   for "No" if it does not describe it;
   if you cannot decide.

   Fascinating
   Routine
   Satisfying
   Boring
   Good
   Creative
   Respected
   Hot
   Healthy
   Useful
   Tiresome
   Healthful
   Challenging
   On your feet
   Frustrating
   Simple
   Endless
   Gives sense of accomplishment
6. Please place a check (✓) below the one face that best expresses your overall feelings toward your present job at the hospital:

( ) ( ) ( ) ( ) ( )

7. How satisfying do you expect your job to be in the near future?
(Check one face.)

( ) ( ) ( ) ( ) ( )

8. How much variety is there in the activities that make up your job?

( ) A very great variety
( ) A great variety
( ) A moderate variety
( ) Some variety
( ) Little or no variety

9. To what extent do you do the same job in the same way every day?

( ) Almost totally the same every day
( ) Very much the same
( ) Moderately the same
( ) Somewhat the same
( ) Almost totally different every day

10. To what extent are the activities that make up your job routine?

( ) Very routine
( ) Quite routine
( ) Moderately routine
( ) Somewhat routine
( ) Little or no routine

11. How much repetitiveness is there in the activities that make up your job?

( ) A very great deal
( ) A great deal
( ) A moderate amount
( ) Some
( ) Little or none

12. How likely is it that you will leave this hospital in the near future?

1 Very Unlikely 2 Unlikely 3 Not Sure 4 Likely 5 Certain
13. How likely is it that you could obtain another job elsewhere that is as good (or better) than your present job?

1
Very Unlikely  2
Unlikely  3
Not Sure  4
Likely  5
Certain

14. Compared to the effort that you put into your job, how do you feel about the pay you receive in the hospital?

( ) Compared with the effort, my pay is very poor.
( ) Poor
( ) About Right
( ) Good
( ) Compared with the effort, my pay is very good.

15. Compared to the effort that other nurses in the hospital put into their jobs, how do you feel about the pay you receive in the hospital?

( ) Compared with the effort of other nurses, my pay is very good.
( ) Good
( ) About Right
( ) Poor
( ) Compared with the effort of other nurses, my pay is very poor.

16. How do you feel about the pay you receive in the hospital compared to the contribution that you make toward its operation?

( ) Compared to my contribution, my pay is very poor.
( ) Poor
( ) About Right
( ) Good
( ) Compared to my contribution, my pay is very good.

17. How much do you agree or disagree with each of the following statements about promotional opportunities for a person with your qualifications somewhere in the hospital? (Check one for each statement)

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<th>Statement</th>
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<th>Neither</th>
<th>Agree nor Disagree</th>
<th>Strongly Disagree</th>
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<td>B. Promotions are regular.</td>
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<td>C. Promotions are infrequent.</td>
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<td>D. There is an opportunity for advancement.</td>
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<td>( )</td>
<td>( )</td>
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<td>E. I'm in a dead-end job.</td>
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<td>( )</td>
<td>( )</td>
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<tr>
<td>F. There is a very good opportunity for advancement.</td>
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<td>( )</td>
<td>( )</td>
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<tr>
<td>G. Promotions are very rare.</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td></td>
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<tr>
<td>H. There is a good chance to get ahead.</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
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18. How often do you feel that you have a close working relationship with your co-workers?

<table>
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<th></th>
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<th>2</th>
<th>3</th>
<th>4</th>
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<td></td>
<td>Never</td>
<td>Seldom</td>
<td>Occasionally</td>
<td>Often</td>
<td>Constantly</td>
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</tbody>
</table>

19. How many close friends do you have among hospital employees?
(Note: There is nothing odd about having no close friends among hospital employees. Many people have close friends outside the hospital, or have no close friends.)

( ) No close friends among hospital employees.
( ) One
( ) Two
( ) Three
( ) Four
( ) Five or more close friends among hospital employees.

20. While you are actually working, how often do you see your close friends among hospital employees?

( ) More than once a day
( ) About once a day
( ) About once every two days
( ) Less than once every two days
( ) No close friends among hospital employees.

21. How often do you see your close friends among hospital employees during breaks, such as for coffee and lunch?

( ) More than once a day
( ) About once a day
( ) About once every two days
( ) Less than once every two days
( ) No close friends among hospital employees.

22. How often do you see your close friends among hospital employees outside of working hours, such as at dinners, picnics, or other social events?

( ) Almost every day
( ) Roughly between two and six times a week
( ) About once a week
( ) About every other week
( ) About once a month
( ) Less than once a month
( ) No close friends among hospital employees.

23. How easy would it be for you to find a nursing job with another employer?

( ) Very easy
( ) Quite easy
( ) Fairly easy
( ) Not quite so easy
( ) Not easy at all
24. How easy would it be for you to find a nursing job as good as the one you now have with another employer?
   ( ) Very easy
   ( ) Quite easy
   ( ) Fairly easy
   ( ) Not quite so easy
   ( ) Not easy at all

25. How would you describe the number of available nursing jobs, with all types of employers, for a nurse with your qualifications?
   ( ) A great many
   ( ) Quite a few
   ( ) A moderate number
   ( ) Few
   ( ) Very few

26. Which of the following statements, in your view, best describes the job market for a nurse with your qualifications?
   ( ) There are more job vacancies than applicants.
   ( ) There are more applicants than job vacancies.

27. Which of the following statements most clearly reflects your feelings about your future in the hospital?
   ( ) Definitely will not leave
   ( ) Probably will not leave
   ( ) Uncertain
   ( ) Probably will leave
   ( ) Definitely will leave

28. How well informed are you about each of the following aspects of your job in the hospital? (Check one for each aspect)

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<th>Aspects</th>
<th>Very Well</th>
<th>Quite Well</th>
<th>Fairly Well</th>
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<th>Hardly Well</th>
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<td>B. Policies and procedures</td>
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<td>C. Priority of work to be</td>
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<td>done</td>
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<td>D. How well the job is</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Technical knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Nature of equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>used</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. How you are supposed to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>do the job</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

29. How much freedom does your job allow you as to how to do your work?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td>A little</td>
<td>Somewhat</td>
<td>A lot</td>
</tr>
</tbody>
</table>
30. How much does your job allow you to make a lot of decisions on your own?


31. How much does your job allow you to take part in decisions that affect you?


32. How much is your job one where you have a lot of say over what happens on the job?


33. Here is a list of decisions which get made on the job. For each of the following decisions, please indicate how much say you actually have in making these decisions. (Check one for each decision)

<table>
<thead>
<tr>
<th>Decision</th>
<th>No Say at all</th>
<th>Some Say</th>
<th>Moderate Say</th>
<th>A Good Deal of Say</th>
<th>A Very Great Deal of Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. How you do your job</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>B. Sequence of your job activities</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>C. Speed at which you work</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>D. Changing how you do your job</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

34. To what extent do you feel that you are able to bring about changes at work?


35. How often do you think about leaving your job at this hospital?


36. In the last two months, have any specific things happened which caused you to think about quitting your job?

1. Yes 2. No

If "Yes", please briefly indicate below the nature of the occurrence which was most responsible for your thinking about quitting:

__________________________________________________________________________________________
__________________________________________________________________________________________
__________________________________________________________________________________________
37. Have you searched for another job anytime in the last two months?

   1    2
   Yes  No

38. Are you now actively searching for a job elsewhere?

   1    2
   Yes  No

39. If you were looking for a job elsewhere, but have now stopped looking, what was most responsible for your decision to stop looking?

40. How likely is it that in the near future you will search for a job elsewhere?

   1    2    3    4    5
   Very Unlikely  Unlikely  Not Sure  Likely  Certain

41. Do you expect to leave the hospital in the near future?

   ( ) Will definitely leave in the near future
   ( ) The chances are quite good that I will leave
   ( ) The situation is uncertain
   ( ) The chances are very slight that I will leave
   ( ) Definitely will not leave in the near future

42. How old are you?

   ( ) Less than 25 years old
   ( ) 25 to 29
   ( ) 30 to 34
   ( ) 35 to 39
   ( ) 40 to 49
   ( ) 50 to 59
   ( ) 60 years or over

43. How many memberships do you have in professional associations, such as American Nurses' Association, Association of Operating Room Nurses, Critical Care Nurse Association, and so forth?

   ( ) None
   ( ) One
   ( ) Two
   ( ) Three
   ( ) Four or more

44. How many official positions, such as being an officer or committee member, do you have in professional associations?

   ( ) None
   ( ) One
   ( ) Two
   ( ) Three
   ( ) Four or more
   ( ) No membership in professional associations
45. How often do you generally attend meetings (district, state, and national) of a professional association?
   ( ) Never attend meetings
   ( ) Between one and five times a year
   ( ) Between six and twelve times a year
   ( ) Over twelve times a year
   ( ) No memberships in professional association

46. How much professional schooling in nursing have you had?
   ( ) Associate
   ( ) Diploma
   ( ) Baccalaureate
   ( ) Graduate degree(s)

47. What is your present marital status?
   ( ) Married
   ( ) Single
   ( ) Widowed
   ( ) Divorced or separated

48. Do you have any children?
   ( ) Yes
   ( ) No
   ( ) Not applicable

49. Here are five kinds of goals admired in America today. Ideally, if you could arrange your life, which goal would you choose to emphasize most, which second most, which third, which fourth, and which least? Assign ranks from 1 to 5, with 1 signifying "most" and 5 signifying "least".
   Rank Goal
   ______ To have a successful career
   ______ To be a good wife (or husband)
   ______ To be a good mother (or a good father)
   ______ To be a good citizen of the community
   ______ To be a good member of my church or synagogue

50. Roughly, what is your total yearly income from nursing before tax and other deductions are made:
   ( ) Less than $3,000
   ( ) $3,000 to $4,999
   ( ) $5,000 to $6,999
   ( ) $7,000 to $8,999
   ( ) $9,000 to $10,000
   ( ) $11,000 to $12,999
   ( ) $13,000 to $14,999
   ( ) $15,000 to $16,999
   ( ) $17,000 to $18,999
   ( ) $19,000 to $20,999
   ( ) $21,000 to $22,999
   ( ) $23,000 to $24,999
   ( ) $25,000 or over
51. At this time, to what extent are you and your family being affected by the present economic recession?

<table>
<thead>
<tr>
<th>Option</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>O</td>
<td>A little</td>
<td>Somewhat</td>
<td>A lot</td>
</tr>
</tbody>
</table>

52. How much do you agree or disagree with each of the following statements about your job? (Check one for each statement)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. I find real enjoyment in my job.</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>B. I consider my job rather unpleasant.</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>C. I am often bored with my job.</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>D. I am fairly well satisfied with my job.</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>E. I definitely dislike my job.</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>F. Each day on my job seems like it will never end.</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>G. Most days I am enthusiastic about my job.</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

53. Do you belong to an in-house nursing pool at your hospital?

<table>
<thead>
<tr>
<th>Option</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THANK YOU.

PLEASE MAIL IN THE ENCLOSED STAMPED ENVELOPE.
Appendix B

Cover Letters

^Adapted from Price and Mueller (1981b).

^Adapted from Price and Mueller (1981b).
Dear Nurse:

Recently you may have learned that your hospital was one of several hospitals in Louisiana participating in a study of nurse turnover. The research is an effort to learn more about how registered nurses decide to stay in or leave a hospital. The project is being conducted by myself as a doctoral dissertation and is being supported by the Louisiana State Nurses Association, the Louisiana Hospital Association and the Louisiana Department of Health and Human Resources. It is hoped that this research will contribute in some small way to the effective delivery of health care in our state.

Your candid views of your present job are greatly needed to make this effort successful.

I have enclosed here a brief questionnaire which asks about your present job and your feelings about staying in or leaving your hospital. Since feelings about jobs vary with time and circumstances, a sample of nurses will be randomly selected to receive this same questionnaire two more times during the next six months. The questionnaire takes about 15 minutes to complete.

All responses are completely confidential. None of the questionnaires, once they are filled out, will ever be seen by anyone in the hospital. Completed questionnaires come directly to me for tabulation at Louisiana State University. Findings resulting from the study will be reported statistically to nurse and hospital representatives so that the identity of individuals and small groups will not be revealed. Overall results will, of course, be available to you as public information.

Instructions for completing and mailing the questionnaire are enclosed here with it. I hope that you will join us in this research.

Sincerely,

Al Holland
Nurse Research Project
Department of Psychology
Louisiana State University
Baton Rouge, Louisiana 70803
February 21, 1983

Dear Nurse:

I would like to thank you for your interest and participation in my research on nursing in Louisiana. The response to the initial questionnaire was enthusiastic and appears to reflect a significant amount of interest on the part of nurses in their jobs and profession.

The questionnaire that you returned to me at the beginning of the year asked about your job and your thoughts about staying in or leaving your hospital. I mentioned then that since feelings about jobs vary over time, a random sample of nurses would be asked to fill out the questionnaire two more times in the following months. That is why I am writing to you now -- to ask you to participate further in the project by completing the enclosed questionnaire. As before, all responses are completely confidential. None of the questionnaires, once they are filled out, will ever be seen by anyone in the hospital. Completed questionnaires come directly to me at Louisiana State University.

Please do not feel that your participation is unimportant -- it is very important. Every questionnaire which goes unreturned represents a loss of valuable information and insight which cannot be replaced. Other people can speculate about nursing, but you know more about your job than anyone else.

Thank you again for your time.

Sincerely,

Al Holland
Nurse Research Project
Department of Psychology
Louisiana State University
Baton Rouge, Louisiana 70803
April 20, 1983

Dear Nurse:

Enclosed is the third and final survey in our longitudinal study on nursing. You have patiently completed this questionnaire twice before, and I am asking that you complete and return it to me one more time. As before, the questions ask you for your most recent opinions and feelings about your job. Please fill out all of the items and mail them in the prepaid envelope as soon as possible.

PROJECT RESULTS

Data analysis for the project should be completed some time in August. If you are interested in learning more about the study, generalized results may be obtained from the following sources:

(1) Public Document. A highly detailed description of the research — its methodology, data analysis procedures, source of survey items, results, etc. — will be available as public information in the dissertation collection of the LSU library.

(2) Abstract. If you would like a summary of the project and its principal results, I would be happy to mail you an abstract. Please send (not on this questionnaire) your name and mailing address to me at the address below.

(3) Professional Associations. Representatives of the Louisiana State Nurses Association, Louisiana Hospital Association, Louisiana Department of Health and Human Resources, and participating hospitals will also be informed of the results.

I would like to express my appreciation for your involvement throughout this project. It is my hope that the results of this study will contribute positively to health care in our state.

Once again, thank you for your participation.

Sincerely,

Al Holland
Nurse Research Project
Department of Psychology
Louisiana State University
Baton Rouge, Louisiana 70803
Appendix C

Hospital Ownership and Extent of Employment
### TABLE 7.
SIGNIFICANT t-TESTS BY HOSPITAL OWNERSHIP

<table>
<thead>
<tr>
<th>Variable</th>
<th>Means</th>
<th>df</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Community</td>
<td>Government</td>
<td></td>
</tr>
<tr>
<td>Social Integration</td>
<td>7.93</td>
<td>9.68</td>
<td>219</td>
</tr>
<tr>
<td>Distributive Justice</td>
<td>3.41</td>
<td>2.88</td>
<td>219</td>
</tr>
<tr>
<td>Professionalism</td>
<td>1.53</td>
<td>.91</td>
<td>222</td>
</tr>
<tr>
<td>Kinship Responsibility</td>
<td>4.63</td>
<td>4.18</td>
<td>222</td>
</tr>
<tr>
<td>Age/Tenure Composite</td>
<td>.20</td>
<td>-.49</td>
<td>220</td>
</tr>
<tr>
<td>Extent of Employment</td>
<td>1.27</td>
<td>1.14</td>
<td>222</td>
</tr>
<tr>
<td>Critical Events</td>
<td>1.55</td>
<td>1.35</td>
<td>221</td>
</tr>
</tbody>
</table>

*p<.05  
**p<.01

### TABLE 8.
SIGNIFICANT t-TESTS BY EXTENT OF EMPLOYMENT

<table>
<thead>
<tr>
<th>Variable</th>
<th>Means</th>
<th>df</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time</td>
<td>Part-time</td>
<td></td>
</tr>
<tr>
<td>Turnover</td>
<td>.09</td>
<td>.20</td>
<td>222</td>
</tr>
<tr>
<td>Social Integration</td>
<td>8.94</td>
<td>6.82</td>
<td>219</td>
</tr>
<tr>
<td>General Training</td>
<td>2.15</td>
<td>1.78</td>
<td>221</td>
</tr>
<tr>
<td>Kinship Responsibility</td>
<td>4.34</td>
<td>5.02</td>
<td>222</td>
</tr>
<tr>
<td>Job Alternatives</td>
<td>3.17</td>
<td>3.59</td>
<td>222</td>
</tr>
<tr>
<td>Age/Tenure Composite</td>
<td>-.14</td>
<td>.47</td>
<td>220</td>
</tr>
<tr>
<td>Critical Events</td>
<td>1.46</td>
<td>1.61</td>
<td>221</td>
</tr>
</tbody>
</table>

*p<.05  
**p<.01  
***p<.001
VITA

Albert Willard Holland, Jr. was born in Monroe, Louisiana, on April 10, 1952. He was raised in Baton Rouge, Louisiana, where he graduated from Broadmoor Senior High School in 1970. In August, 1970, the author began his undergraduate studies at Louisiana State University, and in May, 1974, he received his Bachelor of Arts degree in psychology. In the Fall of 1974, he enrolled in graduate studies at Goddard College and two years later received his Master of Arts degree in clinical psychology. From 1976 to 1979, he conducted individual, group, and family therapy with adolescent patients at Houston International Hospital. During that period, he also held the position of Assistant Program Director, through which he became interested in organizational dynamics. In the Fall of 1979, the author entered the Graduate School of Louisiana State University, where he majored in industrial/organizational psychology and minored in management. He received a second Master of Arts degree in 1981.

He is married to Lauri Harroun Holland and has a son, Daniel, age two. The author is presently a candidate for the Doctor of Philosophy degree at the Fall commencement, December, 1983.
Candidate: Albert Willard Holland, Jr.

Major Field: Psychology

Title of Thesis: A Temporal View of the Turnover Process: Application of a Repeated Measures Design to Two Models of Nurse Turnover

Approved:

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

Steven M. Brown

Richard J. Comer

Jerry A. Waller

Jerry R. Hembree

Robert C. Matthews

Date of Examination:

November 22, 1983