THE RELATIONSHIP OF PERSONALITY CHARACTERISTICS TO JOB SATISFACTION IN A NURSING POPULATION

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THE RELATIONSHIP OF PERSONALITY CHARACTERISTICS TO JOB SATISFACTION IN A NURSING POPULATION

By

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ABSTRACT

This study described the personality characteristics and work environment of two groups of nurses--those working in the Intensive Care Units, and nurses working in the Psychiatric setting--to determine if job satisfaction was related to the congruence of nurse personality and nursing environment. The sample consisted of 152 nurses (74 ICU and 78 Psychiatric) employed in eight hospitals in the Province of Newfoundland and Labrador. Data was gathered using a survey type questionnaire. The principal analysis was performed using the Environmental Assessment Technique, and chi square analyses, rejecting the null hypotheses at the .05 level of significance.

The theoretical constructs of the research were based on John Holland's (1973) theory of career choice. The Self-Directed Search was used to determine the personality characteristics of nurses and their work environment. The Job Descriptive Index was used to examine the nurses' degree of job satisfaction.

Both nursing environments were found to be primarily social in nature, with the Psychiatric environment having a higher degree of differentiation and consistency than the Intensive Care milieu. The degree of job satisfaction was found to be dependent upon the combination of type of nurse and the level of congruence. Job satisfaction differed in

nursing types and was found to relate to the level of congruence.

Recommendations dealt with the identification of a bias towards the social type personality in the nursing profession as well as career counseling strategies; further research into the Holland environmental codes of other nursing specialty areas, and an alternate approach to defining congruence.

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TABLE OF CONTENTS

	Page
ABSTRACT	ii
ACKNOWLEDGEMENTS	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
CHAPTER	
I INTRODUCTION	1
Purpose of the Study	1
Rationale and Significance	1
Overview of Nursing History	1
Satisfaction of Needs in Nursing	4
Description of Intensive Care and Psychiatric Units	7
Implications of Nurses' Dissatisfaction	10
Definition of Terms	12
Research Question and Hypotheses	13
Limitations of Study	14
Summary	15
II REVIEW OF THE LITERATURE	16
Holland's Theory of Vocational Choice	16
Overview of Theory Constructs	16
Personality Types	18
Environmental Models	26
Person-Environment Pairing	34
Person-Environment Interactions	38
Summary	44
Job Satisfaction	45
Summary	47
Personality Characteristics of Nurses	48
Description of Nurse Personality Characteristics	48
Description of Nurse Personality Characteristics in Specialty Areas of Work	51
Description of Nurse Personality Characteristics in Specific Roles	52
Personality Characteristics and Achievement in Nursing	54
Personality Characteristics and Job Performance in Nursing	55
Summary	56
Job Satisfaction in Nursing	57
Summary	61

CHAPTER		Page
III	METHODOLOGY	63
	The Sample	63
	Sampling Procedure	64
	Instrumentation	66
	The Self-Directed Search	66
	The Job Descriptive Index	70
	Analysis Procedures	75
	Summary	77
IV	ANALYSIS OF THE DATA	78
	Research Question 1	78
	Hypothesis 1	80
	Hypothesis 2	87
	Summary	109
V	CONCLUSIONS AND RECOMMENDATIONS	110
	Conclusion 1	110
	Conclusion 2	114
	Conclusion 3	116
	Conclusion 4	118
	Conclusion 5	119
	Recommendations for Further Research	121
BIBLIOGRAPHY		124
APPENDIX A		134
APPENDIX B		149
APPENDIX C		152

LIST OF TABLES

TABLE		Page
1	Sample Nursing Population by Sex and Specialized Area	64
2	Intercorrelations of JDI Scales	73
3	Means, Standard Deviations of JDI Sample	74
4	Scaling of Six Levels of Congruence of Personality and Environmental Codes	77
5	Percentages of Personality Types in ICU and Psychiatric Nursing Environments	79
6	Degree of Differentiation in ICU and Psychiatric Nursing Environments	81
7	Chi Square Test of Independence on S,A,I,E Variables for ICU and Psychiatric Environments	83
8	Chi Square Test of Association for SA, SI, SE Combinations Compared Across Environments	84
9	Relationship of Mean Work JDI Scores to EAT Congruency Categories	88
10	Relationship of Mean Pay JDI Scores to EAT Congruency Categories	90
11	Relationship of Mean Promotions JDI Scores to EAT Congruency Categories	92
12	Relationship of Mean Supervision JDI Scores to EAT Congruency Categories	94
13	Relationship of Mean People JDI Scores to EAT Congruency Categories	96
14	Relationship of Mean Job In General JDI Scores to EAT Congruency Categories	98
15	Relationship of Mean JDI Subscale Scores for ICU and Psychiatric Nurses and Revised Congruency Categories	102

LIST OF FIGURES

FIGURE		Page
1	Hexagonal Model	23
2	Profile of Degree of Differentiation in ICU and Psychiatric Nursing Environments	82
3	Level of Consistency for ICU and Psychiatric Nursing Environments	86
4	Relationship of Mean Work JDI Scores to EAT Congruency Categories	89
5	Relationship of Mean Pay JDI Scores to EAT Congruency Categories	91
6	Relationship of Mean Promotions JDI Scores to EAT Congruency Categories	93
7	Relationship of Mean Supervision JDI Scores to EAT Congruency Categories	95
8	Relationship of Mean People JDI Scores to EAT Congruency Categories	97
9	Relationship of Mean Job In General Scores to EAT Congruency Categories	99
10	Relationship of Congruency and Work Environment for Work Scale	104
11	Relationship of Congruency and Work Environment for Pay Scale	105
12	Relationship of Congruency and Work Environment for Promotions Scale	106
13	Relationship of Congruency and Work Environment for People Scale	107
14	Relationship of Congruency and Work Environment for Job In General Scale	108

CHAPTER I

INTRODUCTION

Purpose of the Study

The purposes of this study were first; to describe the personality characteristics of nurses working in the Intensive Care Units (ICU) and Psychiatric areas of hospital settings; second, to measure the characteristics of the ICU and Psychiatric nursing environments using Holland's (1973) needs theory of vocational choice; and third, to determine the degree to which the job satisfaction of nurses in the ICU and Psychiatric environments is related to the congruance of nurse personality and nursing environment.

Rationale and Significance

Overview of Nursing History

The history of the nursing profession has been characterized by constant evolution in terms of status, focus of patient care, role of the nurse, and job satisfaction.

During the 16th to middle 19th century, for example, nursing was "regarded with vehement contempt ... and held in disrepute" (Kozier & Erb, 1983, p. 15). Nurses were generally male, often recruited from the ranks of the poor,

and generally described as being "drunk, heartless and immoral" (Kozier & Erb, 1983, p. 15). The focus of patient care was disease oriented and the implementation of nursing care was limited to the unsanitary and overcrowded conditions of an institutional setting. It can be supposed that the satisfaction of nurses with their work in this situation, was limited to the monetary rewards.

Nursing was established as a respectable profession by Florence Nightengale in the latter part of the 19th century. She changed the role of women in nursing from "camp follower to caretaker and nurturer" (Cohen, 1981, p. 105), thus making it an acceptable occupation for women. Education of nurses became a major concern and training programs were established in hospital settings. She broadened the focus of nursing care to include a holistic approach to the patient with an enriched emphasis on the preventative aspect of care. Although the setting of nursing practice was still hospital based, the refined and responsible role of the nurse contributed to the improvement of conditions in these institutions. Job satisfaction for nurses of this era was beginning to shift from monetary gains to a more personal level of rewards.

The nursing profession of today has changed dramatically in terms of its scope and complexity.

> Advances in science and technology have caused changes in environmental conditions, in prevalence and in incidence of disease, and in prevention and curative means available for use by the health profession.
> (King, 1971, p. 14)

These factors, coupled with other external influences such as "consumer demands and participation, changing family structure, economics, legislation, demography, the women's movement and unionization" (Kozier & Erb, 1983, p. 17), have placed increasing demands on the profession.

Although the nursing profession still wavers in a period of transition, it has emerged with a distinct philosophy and characterizes itself as an independent profession. One fundamental concept of this philosophy is that nursing is an interpersonal process with the focus of care directed towards meeting the needs of the patient.

> Many of the definitions of nursing put forth by nursing leaders such as Harmer, Henderson, Rogers, Levine and Mitchell, shows that a common element in each of them is caring or helping persons with their needs. (Lindberg, Hunter & Kruzewski, 1983, p. 3)

This philosophy assumes that each individual or group requiring nursing interventions presents a unique set of needs. Patient needs have been described in many ways. For example, Ellis and Nowlis (1977) cite the contribution of Abraham Maslow's (1943) hierarchy of needs to the nursing profession. This model hypothesizes that individuals must meet their lower physiological needs before they can satisfy higher level needs of safety and security, love and belonging, self-esteem and self-actualization.

The need list identified by Henry Murray (1938), as cited by Lazerson (1975), has also been used as a model for identifying and meeting patients' needs in a nursing environment. His model presents two types of basic needs;

a class of primarily physical needs and a much larger class of psychological needs.

As well as broadening the focus of patient care to include psychological as well as physical components, the needs approach in nursing has also affected the role of the nurse. Not only must nurses possess a sound academic knowledge and mastery of practical skills related to caring for the physical health of the patient, but they must also be able to assist others in meeting their individual and often complex psychological needs.

Satisfaction of Needs in Nursing

It has been agreed by some that an important prerequisite to a satisfactory performance of the nurse's role today is the ability of nurses to first meet their own needs.

> It is important that the nurses' own needs be met in order for them to assist patients effectively. The nurse whose rest, security, love and belonging or esteem needs are unmet, will not be effective in providing this assistance required by the patient. (Kozier & Erb, 1983, p. 169)

The question thus becomes, how can nurses meet their needs? Although there are many avenues available to assist in this process, one of the most valuable may be the occupational area itself. Pietrofesa and Splete (1975) reported that "in present day society, there is no single situation that is potentially so capable of giving some satisfaction at all levels of basic needs as is one's occupation" (p. 47).

Similarly, Organ (1978) stated that "work plays a crucial and perhaps unparalleled psychological role in the formation of self-esteem, identity and sense of order" (p. 82).

John Holland (1973), a career theorist, supported the assumption that the occupational environment plays a vital role in need satisfaction. He qualified this belief, however, by hypothesizing that need satisfaction depends on the congruence, or match, between an individual's personality characteristics and the characteristics of the working environment.

Holland (1973) utilized "Murray formulations (1938) of personal needs and environmental pressures" (p. 6) to construct his theory of vocational choice. He defined needs in terms of personality types, hypothesizing that all people in our culture "can be categorized as one of six types: realistic, investigative, artistic, social, enterprising and conventional" (p. 2).

He assumed that people of similar types tend to congregate together. Therefore, those with similar interests, competencies and dispositions create environments that reflect their type. He hypothesized that "there are six kinds of environments: realistic, investigative, artistic, social, enterprising and conventional" (Holland, 1973, p. 3). Thus, in terms of needs theory, Holland's definition of occupational environments is based on the specific cluster of needs reflected by the people working in a particular setting.

Holland (1973) believed that because the personality

type and the environmental modes share the same constructs, it is possible to predict the outcomes of such a pairing. One important prediction is in the area of job satisfaction: "Vocational satisfaction ... depends on the congruence between one's personality and the environment (composed largely of other people) in which one works" (Holland, 1973, p. 9).

In nursing, the nature of the work is the satisfaction of the needs of the patient. Patient needs are therefore critical in the environmental match that Holland says must be made with the needs of nurses if job satisfaction is to result.

Unfortunately, the growth and complexity of the nursing profession today does not permit one to conclude that patients' and nurses' needs can be matched anywhere in this occupational setting. Although bonded by a common frame of reference, the nursing profession is characterized by many intraoccupational differences.

Within the hospital setting, specialized units of patient care such as medicine, surgery, obstetrics, pediatrics, psychiatry, and intensive care have been established to meet the variety of health needs of the population. Outside the hospital complex, nurses are practicing in schools, doctors' offices, industrial areas and other community foundations. Their roles have expanded from bedside practitioners to include teaching, administrative, consultant and research responsibilities. Although the general principles of caring

are evident in all these areas, the specific setting, patient needs, and nursing roles give rise to a variety of differences in terms of responsibility and expectations.

This investigation used the constructs of Holland's theory (1973) to examine the personality types, environment characteristics, and the relationship of their match to job satisfaction in two specialized units of patient care within the hospital complex--the Intensive Care Unit and the Psychiatric area. These two areas were chosen because they reflect intra-occupational differences in terms of focus of patient care and nursing roles. If Holland's theory is valid, significant differences should be found in the personality types of nurses working in these environments, in the environmental descriptors of each environment, and in the degree of job satisfaction experienced by congruent and incongruent nurses employed in these settings.

Description of Intensive Care and Psychiatric Environments

In general, because of the critical nature of the health status of its patients, ICU highlights a physiological focus of care.

> The Intensive Care areas have been developed as special locales for certain types of critically ill patients; for those who have high potential for dying, or for suffering retrogression unless cared for closely and carefully--but only if they are worth saving or can be prevented from worsening. (Strauss, 1968, p. 8)

In contrast, the focus of patient care in the Psychiatric

area is predominately psychological in nature.

> Psychiatric nursing is a specialized area of nursing practice employing theories of human behavior as its science and purposeful use of self as its art. It is directed toward both preventive and corrective impact upon mental disorders and their sequalae and is concerned with the promotion of optimal mental health for society, community, and those individuals who live with it. (Pothier, 1980, p. 4).

Many differences are found in the role of the nurse working in these areas. The ICU is a place within the hospital where some of the most sophisticated medical technology and medical knowledge are utilized. "Highly complex machines such as cardiac monitors, respirators and computers ... affect the methods used to provide care" (Kozier & Erb, 1983, p. 20). Therefore, much of the nursing activities evolve around learning about the operation of this equipment, monitoring the responses of the patient via the equipment, and implementing life saving nursing actions by equipment and manipulation.

Continuous and comprehensive physical assessment of the patients in ICU is another critical nursing responsibility.

> Continuous assessment of the patients' cardiac status and other life processes or body functions such as respiration, elimination, nutrition, intake, posture, position and exercise, rest, sleep and relaxation, maintenance of body temperature and personal hygiene are fundamental. (Lambertson, 1968, p. 4)

Because ICU nurses are often confronted with emergency situations, they face the awesome responsibility of "making life saving decisions instantly and assuming serious responsibilities" (Meltzer, Pinneo, & Kitchell, 1977, p. 47) which would normally be made by a doctor.

The ICU nurse must face death more often than a nurse in any other setting. "This requires her to experience all of the emotional turmoil that one experiences with the death of a patient but she experiences it more frequently" (Kornfeld, Maxwell & Morrow, 1968, p. 49).

In general, although the ICU nurse does teach and provide emotional support to the patient's family, there is little or no community involvement.

In contrast, the role of the nurse in the Psychiatric environment is primarily interpersonal in nature. Therapeutic interventions in this milieu are related to interpersonal counselling, psychotherapy, behavior modification and drug administration. The nurses' main activity is "working with the here and now problems they confront" (Pothier, 1980, p. 4). The therapeutic tools are the nurses themselves as a "knowledge of one's self and how one responds to self, others and to the environment is a necessary pre-requisite" (Haber, Leach, Schundy & Sideleau, 1982, p. 12).

Although physiological assessment of the patient is not overlooked in this setting, it is less critical and inclusive than the physiological assessment in the ICU. The main assessments are psychological in nature and include the examination of factors such as general behavior, mood, sensory and thought disorders and disturbances of perception.

Psychiatric nurses make few life-saving decisions and they face death less frequently than the ICU nurse. Family

counselling and teaching, as well as community assessment, placement and involvement, are often an important part of the psychiatric nurse's responsibility.

In summary, it would appear that these are important differences in the ICU and Psychiatric nursing environments. Molde and Wiens (1968) describe these differences in terms of task-orientation and people-orientation.

> Certain nursing specialties; (ICU), would appear to place an emphases on nonpersonal technical skills related to patient care (task-oriented); whereas others; (psychiatry), focus upon interpersonal interactions in treatments (people-oriented). (p. 45)

Thus, if the needs of the nurses working in the ICU and psychiatric areas differ, and if the environment of these specialty areas offer different opportunities for nurses to meet their needs, the differences should be reflected in differences in descriptions of the environments using the techniques of Holland.

Implications of Nurses' Dissatisfaction

In terms of the nurse as a person, Breton and White (1972) suggested that feelings of anxiety, conflict, frustration and failure are experienced by nurses who are not able to meet their needs in the job setting. Klein and Wiener (1977) reported that the longer a person functions in a congruent environment, the more likely he is to accumulate experiences of competency and mastery, thus continuously improving his/her job satisfaction and mental health. They go on to say that stressful and unpleasant

experiences result from conditions of incongruent person-environment situations. The longer this condition lasts, the more detrimental are its effects on a person's well being.

Patient care is also thought to be affected by an incongruent matching of nurses and their work environments. For example, Dyer (1967) reported that variation in the nursing care of patients can arise from variations in the attributes nurses bring to their work setting. Similarly, Pietrofesa and Splete (1975) concluded that nurses not emotionally suited to their work do not administer the necessary care.

Implications for the organizational institution of the hospital could include a decrease in the job turnover rate. For example, McCloskey (1974) concluded that the main reason nurses left their jobs in her sample was due to lack of internal rewards. A decrease in the turnover rate of nurses would not only provide for better continuity of patient care, but would also decrease the cost of orientation programs for new staff members.

Finally, because on-going growth and development of its nurses is an educational goal of most nursing settings,

> A more careful matching of the nurses' capabilities and skills would enable inservice educators to co-ordinate and plan more judiciously for the nurses' growth and development.
> (Welches, Dixon, & Stanford, 1974, p. 402)

Each unit could develop programs which capitalize on the abilities, strengths, interests and needs of the nurse.

Definition of Terms

For the purpose of this study, the following definitions will be used.

Intensive Care Nurse. A graduate of an accredited school of nursing, presently registered in the province of Newfoundland and Labrador. This individual is currently working in a specialized unit of nursing care including areas labelled as Intensive Care Units (ICU), Coronary Care Units (CCU), and Neonatal Intensive Care Units (NICU), located in a hospital in this province.

Psychiatric Nurse. A graduate of an accredited school of nursing, presently registered in the province of Newfoundland and Labrador. This individual is presently employed in a specialized psychiatric unit in a hospital located in this province.

Personality Characteristics. The resemblance of the ICU and Psychiatric nurses' personality characteristics to the six personality types described by Holland (1973)--realistic, investigative, artistic, social, enterprising and conventional, as measured by the Self-Directed Search (SDS).

Work Environment. The characteristic atmosphere created by the nurses who dominate the ICU and Psychiatric nursing environments as defined by its resemblance to Holland's (1973) six environmental types--realistic, investigative, artistic, social, enterprising and

conventional.

Congruence. The matching of the ICU and Psychiatric nurses' personality code with their respective work environment as described by Holland (1973).

Job Satisfaction. "The feeling a worker has about his job" (Smith, Kendal & Hulen, 1965, p. 40); as measured by the Job Descriptive Index (JBI).

Research Question and Hypotheses

The following research question and hypotheses were derived from John Holland's (1973) theory of vocational choice, and are applied specifically to the two selected nursing environments. A description of the specific variables analyzed with respect to the questions may be found in Chapter III.

Research Question

(1) What are the environmental descriptors for the Intensive Care and Psychiatric Nurse as defined by the Environmental Assessment Technique?

Hypotheses

(1) There is no significant difference between the Intensive Care and Psychiatric Nursing environment as determined by the Environmental Assessment Technique.

(2) There is no significant difference between the job satisfaction scores and congruency scores of nurses working in the ICU and Psychiatric environments as defined by the Environmental Assessment Technique Congruency Method.

Limitations of Study

(1) This study was limited to the examination of two specialized groups in the nursing profession: the Intensive Care Unit and the Psychiatric area. Therefore, the results cannot be generalized to other specialized areas within the nursing profession.

(2) The assessment of the working environment was limited to a description of the atmosphere created and transmitted by the people who populate that environment. In this instance, the majority of nurses sampled were female, born, raised and educated in the Province of Newfoundland and Labrador. This province still maintains the traditional view of nurses as being female, nuturant and humanitarian in nature. Implications for this outlook at discussed in Chapter V. Thus, generalization of these findings to other areas which do not subscribe to this traditional focus should be done with caution.

Summary

This chapter has presented the purposes, rationale and significance of the study. A brief history of the nursing profession was outlined with specific emphases on the importance of needs and need satisfaction in this occupation. John Holland's (1973) Theory of Career Choice was introduced and its relevance to satisfaction in nursing was discussed. Intraoccupational differences in the nursing profession, specifically the Intensive Care and Psychiatric areas, were examined. The implications of nurse's dissatisfaction with her work were outlined.

A definition of terms, research questions and perceived limitations of the study were also presented.

Chapter II will present a review of the literature pertinent to the study.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter begins with a summary of the main constructs of John Holland's Theory of Career Choice. Each of these construcots will then be described in more detail with information from relevant research studies. A brief historical overview of some of the pertinent theories of job satisfaction will be reviewed. The importance of personality characteristics as a variable in the nursing profession will be examined and a review of the literature on job satisfaction as it relates to the nursing profession will be presented.

Holland's Theory of Vocational Choice

Overview of Theory Constructs

Holland's Theory of Vocational Choice (1973) can be summarized by the following key factors. First, all people in our society can be classified according to their resemblance to one of six personality types--realistic, investigative, artistic, social, enterprising, and conventional. Second, all the environments in our society, including the work environment, can be categorized according to their resemblance to one of six model environmental types described in the same way as the personality types. Third, all people exhibit a searching behavior which causes them

to seek out environments which are compatible with their personality types. Compatible environments enable individuals to "exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles" (Holland, 1973, p. 4). Finally, the interaction between persons' personalities and their environments result in predicable behavior including "vocational choice, vocational stability and achievement, educational choice and achievement, personal competence, social behavior, and susceptibility to influence" (Holland, 1973, p. 2).

Holland augments these basic theory components with four secondary assumptions which can be applied to people and environments. The quality of 'consistency' describes the degree of relatedness between personality or environmental pairs. The more related these pairings are, the more predictable is the outcome. Persons and environments may also be examined in terms of their 'differentiation'. The more a person resembles a single type, or the more an environment is dominated by a single type, the more clearly defined is that person or environment. The greater the degree of differentiation or the greater the degree of consistency, the more predictable is the behavior of the individual, or the influence of the environment.

The third secondary assumption described by Holland is 'congruence', or the degree of compatability between a personality type and his environment. Holland (1973) hypothesizes that different personality types require different environments in order to find the opportunities

to meet their needs and to experience rewards compatible with their personality make-up. "Vocational satisfaction, stability and achievement depend on the congruence between one's personality and the environment in which one works" (p. 9).

In order to obtain explicit definitions of both consistency and congruence, Holland has developed a fourth secondary assumption called 'calculus'. Calculus is described in terms of a hexagonal model which arranges the six personality types and six environmental models according to their relationship. This model provides for the definition of three levels of consistency and three or more levels of congruence.

Personality Types

Development and description of personality types. Holland (1973) stated that many of his ideas and background foundations of his personality types resulted not only from his own experience as a vocational counsellor, but also from the work of other authors such as "Alder (1939), Fromm (1947), Guilford (1954), Jung (1933), Sheldon (1954), Spranger (1928) and others" (p. 6).

Of particular value was Guilford (1954) who used a factor analytical approach to define six major factors--mechanical, scientific, social, welfare, clerical, business, and esthetic--which he felt accounted for the diversity of interests and personality traits. This type of classification

prompted Holland to search for similar clusters of characteristics in individuals by examining the interaction of people with their environments.

The six personality types resulting from this process--realistic, investigative, artistic, social, enterprising, and conventional--are described by Holland (1973) as follows:

> The Realistic type has a preference for activities that entail the explicit, ordered, or systematic manipulation of objects, tools, machines, animals, and to an aversion to educational or therapuetic activities. Those behavioral tendencies lead in turn to the acquisition of manual, mechanical, agricultural, electrical and technical competencies and to a deficit in social and educational competencies. (p. 14)

This type of personality would value concrete things of tangible personal characteristics such as money, power and status. Characteristic personal descriptors of such an individual would include asocial, conforming, frank, genuine, materialistic, persistent, practical, self-effacing, stable, thrifty and uninsightful.

> The Investigative type has a preference for activities that entail the observational, symbolic, systematic, and creative investigation of physical, biological, and cultural phenomena in order to understand and control such phenomena; and to an aversion to persuasive, social, and repetitive activities. These behavioral tendencies lead in turn to an acquisition of scientific and mathematical competencies and to a deficit in persuasive competencies. (p. 14).

This personality type would value science and could be described as analytical, cautious, critical, curious, independent, intellectual, introspective, introverted, passive, pessimistic, precise, rational, reserved, and unpopular.

> The Artistic type has a preference for ambiguous, free, unsystematized activities that entail the manipulation of physical, verbal, or human materials to create art forms or products, and to an aversion to explicit, systematic and ordered activities. Those behavioral tendencies lead, in turn, to an acquisition of artistic competencies--language, art, music, drama, writing--and to a deficit in clerical or business systems. (p. 15)

These individuals value esthetic qualities and may be described as complicated, disordered, emotional, feminine, idealistic, imaginative, impractical, impulsive, independent, introspective, intuitive, nonconforming and original.

> The Social type has a preference for activities that entail the manipulation of others to inform, train, develop, cure, or enlighten; and an aversion to explicit, ordered, systematic activities involving materials, tools, or machines. These behavioral tendencies lead in turn to an acquisition of human relations competencies such as interpersonal and educational competencies and to a deficit in manual and technical competencies. (p. 16)

The value systems of this personality type include social and ethical activities and problems. Characteristically, these individuals may be described as ascendant, co-operative, feminine, friendly, generous, helpful, idealistic, insightful, kind, persuasive, responsible, sociable, tactful and understanding.

> The Enterprising type has a preference for activities that entail the manipulation of others to attain organizational goals or economic gain; and an aversion to observational, symbolic, and systematic activities. These behavioral tendencies lead in turn to an acquisition of leadership, interpersonal, and pervasive competencies, and to a deficit in scientific competencies. (p. 17)

Political and economic achievements are valued by these individuals. They may be described as acquisitive, adventurous, ambitious, argumentative, dependent, domineering,

energetic, exhibitionistic, flirtatious, impulsive, optimistic, pleasure seeking, self-confident, social and talkative.

> The Conventional type has a preference for activities that entail the explicit, ordered, systematic, manipulation of data such as keeping records, filing materials, reproducing materials, organizing written and numerical data according to a prescribed plan, operating business machines and data processing machines to attain organizational or economic goals; and to an aversion to ambiguous, free, exploratory, or unsystematized activities. These behavioral tendencies lead in turn to an acquisition of clerical, computational, and business system competencies and to a deficit in artistic competencies. (p. 17)

This personality type would value business and economic achievements, and could be described as conforming, conscientious, defensive, efficient, inflexible, inhibited, obedient, orderly, persistent, practical, prudish and unimaginative.

Categorization of individual's attributes to personality types. Each of these six personality types represents a theoretical model which can be compared with the personal attributes of any individual, thus determining the type an individual resembles most. Although people generally resemble most, one of the personality types, they usually show some characteristics in common with some or all of the remaining personality types.

Thus individuals may be categorized as personality types; the types they most resemble; or they may be described in terms of a personality pattern; their resemblance to all of the types in descending order of likeness. The

classification of an individual's attributes in terms of a personality pattern, "allows for the complexity of personality and avoids some of the problems inherent in categorizing a person as a single type" (Holland, 1973, p. 3). Although theoretically an individual's personality pattern may be described in terms of the six personality types, Holland has generally limited his classification scheme to the first three most relevant types.

Assessment of personality types. Holland (1973) states that a person's personality type may be assessed by qualitative or quantitative methods. Qualitatively, a person may be categorized as a Holland personality type by "comparing his educational or vocational interests with vocations assumed to be typical of each personality type" (p. 18).

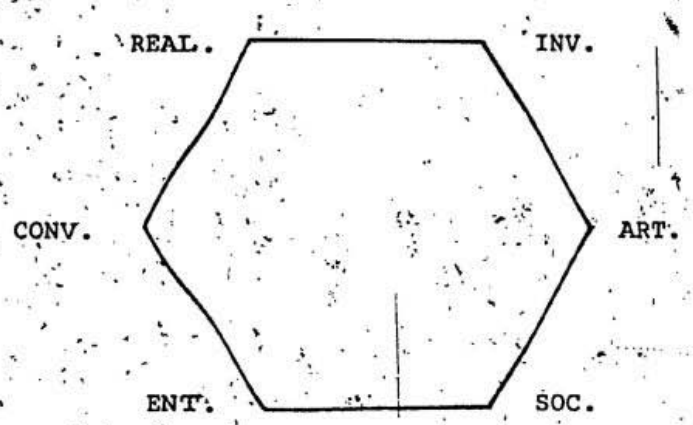
Quantitative measures include the use of standardized assessment instruments such as the Vocational Preference Inventory (VPI) (Holland, 1965), the Self-Directed Search (SDS) (Holland, 1970, 1971a, 1971b), the Strong Vocational Interest Blank (SVIB) (Strong, 1943; Campbell, 1971), as well as various interest inventories such as the Kuder Preference Record (KPR) (Kuder, 1960).

Consistency and differentiation of personality types. Holland's (1973) theory also allows for the description of the personality pattern in terms of its consistency and differentiation.

Consistency is defined using the hexagonal model. Each personality type is represented by one of the points on a regular hexagon. Figure 2 illustrates this concept.

Figure 1

Hexagonal Model



(adapted from Holland, 1973, p. 23)

The distance along a straight line between any two points in the model indicates the relative dissimilarity between the two corresponding personality types.

The two highest scale scores obtained from the VPI and SDS are used to describe three levels of consistency. Profile

patterns composed of adjacent types on the hexagon are most consistent. Profile patterns composed of opposite types on the hexagon are least consistent. Profiles composed of every other type on the hexagon form an intermediate level of consistency.

Differentiation is "expressed as a numerical value that equals the absolute difference between a person's highest and lowest VPI or SDS scores." (Holland, 1973, p. 22).

Further description of the concepts of consistency and differentiation can be found in Holland (1973, pp. 23-5).

Support for personality types. Much of the early research aimed at validating the characteristics of the six personality types was conducted by Holland (1962, 1963-64, 1964, 1968) on large groups of National Merit high school finalists and college students. Scores on the VPI and the SVIB were used to classify those students into one of six personality types. The subjects were then assessed on a broad range of personality characteristics such as academic aptitude, self-ratings, extracurricular activities, academic interests, non-academic achievements, competencies, adjective checklists, stress and personality measures. The results of these early studies generally supported the original classification of personality types and led to a refinement or, in some instances, an extension of the categories.

Other researchers have found support for the validity of the personality types in their studies of college populations.

For example, Wall, Osipow and Ashby (1967), using the VPI; Kelso (1969) (cited in Holland, 1973), using the VPI and the California Psychological Inventory (CPI); and Folsom (1969), using the Adjective Checklist and the expressed major choices of their sample, all supported the type characteristics.

A complex study by Williams (1972), using a sample of 145 male graduate students from 18 university departments, replicated these earlier findings. This assessment battery included the VPI, Allport-Vernon-Lindsey Study of Values (AVL), the Cattell 16 Personality Factory Inventory (16PF), and the Miller Occupational Values Indicator (MOVI).

Support for hexagonal model. The relationship among the six personality types, specified by the hexagonal model (Holland, 1973), has been supported in research. For example, Cole, Whitney and Holland (1971) collected VPI scores from 6289 male freshmen at 31 diverse colleges in the spring of 1964. Similar data was collected from 12,345 male two-year college freshmen at 66 institutions in 1968. They found that the congruence of individual interests to those of others in a chosen occupation was positively related to the stability of vocational choice.

Cole and Hanson (1971) found that the hexagonal model was able to organize data from the SVIB, the Kuder Occupational Interest Survey, the VPI, the Minnesota Vocational Interest Inventory (MVII) and the American College Testing Vocational Interest Preference (ACT VIP), in a manner similar

to Holland's description.

Wakefield and Doughtie (1973) administered the VPI to 373 undergraduate students. Six common factors were found when eleven scales of the inventory were intercorrelated and factor analyzed. The results showed a close correspondence of the placement of the six personality types in the six dimensional spaces by factor analysis to Holland's model.

Edwards and Whitney (1972) were successful in extending the hexagonal model to the domains of activities, competencies, and self-ratings of subjects. Their factor analysis of the SDS data obtained from 358 male and 360 female college students supported the ordering of the scales. Separate and similar configurations were found for the SDS scales composed of activities, competencies, occupations and self-ratings.

Environmental Models

Development and description of environmental models. In his theory, Holland (1973) has described six model environments: realistic, investigative, artistic, social, enterprising and conventional. He has defined a model environment as "the situation or atmosphere created by the people who dominate a given environment" (p. 27). This idea originated from the work of Lenton (1945) who "suggested that a major portion of the force of the environment is transmitted through other people" (cited in Holland, 1973, p. 28).

Holland (1973) has stated that people with similar interests, competencies, and dispositions respond to many situations and problems in similar ways. This similarity of responses causes people to congregate together, creating an environment which is characterized by demands, rewards, opportunities and challenges unique to their personality type. Thus, the six types of environments correspond to the six personality types. The personality type in which the highest percentage of people in the setting are classified determines the environmental type. The environmental pattern is then categorized according to the descending order of the percentages of the remaining personality types. Although a six-variable environmental code is developed, Holland generally limits his classification scheme to the first three letters of this combination.

The resulting environmental models are described by Holland (1973) in the following way.

The Realistic environment:

1. stimulates people to perform realistic activities such as using machines and tools;
2. fosters technical competencies and achievements;
3. encourages people to see themselves as having mechanical ability and lacking ability in human relations; it encourages them to see the world in simple, tangible, and traditional terms;
4. rewards people for the display of conventional values and goods: money, power, and possessions.

These environmental experiences lead to secondary effects. People become:

1. More susceptible to pragmatic, masculine, and conventional influences.

2. More attracted to realistic occupations and roles in which they can express themselves in realistic activities.

3. Less adept at coping with others; they learn instead simple, direct, masculine coping methods.

(p. 29)

The Investigative environment:

1. stimulates people to perform investigative activities;

2. encourages scientific competencies and achievements;

3. encourages people to see themselves as scholarly, as having mathematical and scientific ability, and as lacking in leadership ability; it encourages them to see the world in complex, abstract, independent, and original ways;

4. rewards people for the display of scientific values.

These environmental experiences lead to secondary effects. People become:

1. More susceptible to abstract, theoretical, and analytic influences.

2. More attracted to investigative occupations and roles in which they can express themselves in investigative activities.

3. More apt to cope with others in rational, analytic, and indirect ways.

(p. 30)

The Artistic environment:

1. stimulates people to engage in artistic activities;

2. fosters artistic competencies and achievements;

3. encourages people to see themselves as expressive, original, intuitive, feminine, nonconforming, independent, and as having artistic abilities (acting, writing, speaking). It encourages people

to see the world in complex, independent, unconventional, and flexible ways;

4. rewards people for the display of artistic values.

These environmental experiences lead to secondary effects. People become:

1. More susceptible to personal, emotional, and imaginative influences.

2. More attracted to artistic occupations and roles in which they can express themselves in artistic activities.

3. More likely to cope with others in personal, emotional, expressive, and unconventional ways.

(p. 31)

The Social environment:

1. stimulates people to engage in social activities;

2. fosters social competencies;

3. encourages people to see themselves as liking to help others, understanding of others, cooperative, and sociable; it encourages them to see the world in flexible ways;

4. rewards people for the display of social values.

These environmental forces lead to secondary effects. People become:

1. More susceptible to social, humanitarian, and religious influences.

2. More attracted to social occupations and roles in which they can express themselves in social activities.

3. More apt to cope with others by being friendly, helpful, cooperative.

(pp. 31-32)

The Enterprising environment:

1. stimulates people to engage in enterprising

activities, such as selling, or leading others;

2. fosters enterprising competencies and achievements;

3. encourages people to see themselves as aggressive, popular, self-confident, sociable, and as possessing leadership and speaking ability. It encourages people to see the world in terms of power, status, responsibility, and in stereotyped, constricted, dependent, and simple terms;

4. rewards people for the display of enterprising values and goals: money, power, and status.

These environmental experiences lead to secondary effects. People become:

1. More susceptible to social, emotional, and materialistic influences.

2. More attracted to enterprising occupations and roles in which they can express themselves in enterprising activities.

3. More prone to cope with others in an enterprising manner--by dominance, talkativeness, and so on.

(p. 32)

The Conventional environment:

1. stimulates people to engage in conventional activities, such as recording and organizing data, or records;

2. fosters conventional competencies and achievements;

3. encourages people to see themselves as conforming, orderly, nonartistic, and as having clerical competencies; it encourages them to see the world in conventional, stereotyped, constricted, simple, dependent ways;

4. It rewards people for the display of conventional values: money, dependability, conformity.

These environmental experiences lead to secondary effects. People become:

1. More susceptible to materialistic influences: money, position, power.

2. More attracted to conventional occupations and roles.

3. More prone to cope with others in a conventional manner--to be controlling, conforming, practical.

(p. 33)

Assessment and categorization of environmental models. Holland has employed two methods to assess environmental codes: the Environmental Assessment Technique (EAT) (Astin & Holland, 1961), and the mean raw score method.

The EAT is accomplished by giving one of the quantitative measures such as the VPI or SDS to a large sample of people in an environmental setting. The dominant personality type is found for each person. The absolute numbers for each personality type are then converted to the percentages of the total population for that environment. The highest percent represents the environmental type; the environmental pattern is then based on the descending percentages of the remaining types.

In the mean raw score method,

> Occupational codes are first derived from the mean VPI and SDS profiles of students in special fields of training and from employed adults in a particular occupation. The highest mean raw score indicates the first letter code, the next highest mean equals the second letter, and the third mean indicates the third letter. (Holland, 1976, p. 353)

Consistency and differentiation of environmental models. Holland's model environments may also be defined in terms of consistency and differentiation. The consistency of the environmental pattern is defined by the same procedure as outlined for personality patterns. The rewards and demands

of a consistent environment would be similar, while an inconsistent environment would present divergent rewards and demands.

The differentiation of the environment is also defined in a manner similar to the personality pattern. In this case, however, the degree of differentiation is calculated by taking the numerical difference between the most and least common personality types in that environment.

Support for environmental models. Various researches have supported Holland's environmental classification and his EAT. For example, Austin and Holland (1961) used a sample consisting of 36 colleges and universities to determine if the dominant major field orientation of these institutions systematically affected the social climate in ways predicted by Holland's environmental models. EAT variables such as the size of the student body, intellectual level of students and the percentage of students in each of six classes of major fields--Realistic, Investigative, Artistic, Social, Conventional, and Enterprising--were correlated with scales of the College Characteristic Index (CCI). Many relationships were found to support Holland's environmental assumptions.

Astin (1963) attempted to extend the construct validity of the EAT using a larger sample of institutions. EAT variables about size, intelligence level and major fields of study were obtained from published data for 76 colleges and

universities. Senior students at these institutions completed an 18-item questionnaire describing the college environment and a 21-item questionnaire describing the perceived effects of 4 college years.

> The results of this study showed that the mean responses to 14 of the 18 college environment items were significantly related to EAT variables in the predicted direction; 15 of 21 perceived effects of college were significantly related to at least one EAT variable. (Austin, 1963, p. 217)

Pace (1969) used a sample of 100 colleges and universities in his attempt to relate the five subscales of the College and University Environment Scales (CUES), to the proportion of students majoring in the six Holland categories. Overall support for Holland's theory of environmental types was found.

The validity of the EAT measures have also been supported in occupational settings. For example, McCormick and Jeannerit (cited in Holland, 1973) categorized 832 occupations as one of the six kinds outlined by Holland. Clear evidence was found that Holland's environmental classifications also included more objective and situational data about occupations.

Borgen, Weiss, Tinsley, Davis and Lofquist (cited in Holland, 1973) also supported the validity of the EAT in their study of 81 occupations. These authors obtained Occupational Reinforcer Patterns (ORP) ratings from 2,976 supervisors of jobs in several hundred companies. The authors concluded that congruence was found between the

reinforcer patterns for the resulting six groups and Holland's environmental formulations if the ORP's for the 81 occupations were organized according to Holland's categories.

Person-Environment Pairing

Holland (1973) hypothesized that an innate searching behavior in individuals will cause them to seek out environments which are compatible with their personality types.

A series of studies by Walsh and his associates (Fishbourne & Walsh, 1976; Horton & Walsh, 1976; Mathews & Walsh, 1978; O'Brien & Walsh, 1976) all demonstrated some measure of support for the person-environment pairing assumption.

Fishbourne and Walsh (1976) investigated Holland's theory on a sample of 126 employed male non-college degreed workers in six different occupations consistent with Holland's vocational types. The findings revealed that four scales of the SDS and two scales of the VPI successfully differentiated the occupational group consistent with Holland's theory.

Horton and Walsh (1976) used a sample of 179 female college degreed workers from 6 occupations corresponding to Holland's environmental classification. Four of the six VPI groups--realistic, artistic, social and conventional--and four of the SDS groups--artistic, social, enterprising and conventional--scored higher than all other groups on the occupational-appropriate scales.

O'Brien and Walsh (1976) used a sample of 121 black

male, non-college degreed workers from six occupations. Four of the VPI scales--realistic, artistic, enterprising and conventional--and five of the SDS scales--realistic, investigative, artistic, enterprising and conventional--identified occupational groups consistent with Holland's theoretical notions.

A study by Mathews and Walsh (1978) found some support for the validity of Holland's theory for employed non-college degreed women. A univariate analysis of this data revealed that three scales of the VPI--realistic, artistic and social--and five scales of the SDS--realistic, artistic, investigative, conventional and enterprising--were found to successfully differentiate the occupational groups consistent with Holland's theoretical framework.

Andrew's (1975) study differed from those of Walsh and his colleagues described above in that two high point codes were used for classification purposes instead of the one code used in these studies. This sample included 89 male adults, aged 21-55 years, who were attending a community college. It was found that the adult subjects moved significantly towards future jobs that were more compatible with their personality types than were their present working environment.

Salomone and Slaney (1978) classified 470 men and 447 women non-professional workers by their present job

classifications and their personality orientation as measured by the VPI. The workers also responded to a questionnaire designed to elicit their self-descriptions of their perceived personality characteristics. The subjects' self-descriptions were found to be consistent with their personality orientation. The results also showed that this group of workers were employed in jobs which matched their personality characteristics.

Some studies have shown that people seek out specific job functions or positions within an occupation because of person-environment pairing. An example is a study by Wigington and Apostal (1973) which investigated this assumption in a sample of 27 airforce personnel, ranging in age from 24-34 years. The VPI was administered to all subjects in four specialty job areas. The results revealed a significant difference among the specialty areas on four of the VPI scales.

A more impressive study by Erez and Shneorson (1980) demonstrated that individuals in the same occupation, but belonging to different job categories in the same occupational discipline, have different personality types and differ in their motivational characteristics. The sample consisted of 49 academic and 45 professional in engineering and management science. Personality types assessed by the VPI and motivational characteristics were measured in terms of Vroom's Expectancy Theory of Motivation. Academics in both areas were significantly different from professionals in

industry by scoring significantly higher on the artistic type and significantly lower on the enterprising type. Academics were more motivated by opportunities for scientific contribution, for autonomy and for the high status attained in the job. Professionals were more highly motivated by opportunity for exercising power.

Synder, Howard and Hamme (1978) supported the conclusions of Erez and Shneorson in their study of academic faculty members who were department chairmen.

Not all reported research supports Holland's person-environment pairing assumptions. Hughes (1972) administered the VPI, the SVIB, 16PF, a self-rating personality scale, the 2-week Word Intelligence Test, the Sims Occupational Rating Scale and a personal information sheet to 400 employed men ranging in age from 25 to 35. Using multiple regression, he found that

> the VPI scales placed 42 percent of the men in the correct occupational category; the SVIB predictors ranged from 14 to 35 percent using three different procedures; and the predictors obtained by using selected high and low scales of the 16PF produced predictors only 23 percent correctly.
> (cited in Holland, 1973, p. 50)

Osipow (1973) stated that this is one of the few major studies that is completely at odds with Holland's theory.

Person-Environment Interactions

Holland (1973) states that

> because the personality types and the environmental models share a common set of constructs, it is possible to classify people and environments in the

> same terms and thus to predict the outcome of pairing people and environments. (p. 27)

His four secondary concepts of congruence, consistency, differentiation and calculus are used for these predictions.

Congruence is assessed by the hexagonal model which was described earlier. A personality type, eg. social, situated in a matching environment, eg. social, represents the highest level of congruence. A personality type, eg. social, situated in an adjacent environment, eg. enterprising, illustrates the next level of congruence. Although not identical in characteristics, the social and enterprising scales do reflect some common qualities such as interpersonal and persuasive competencies with aversions for systematic and scientific activities.

The most extreme degree of incongruence is demonstrated by a personality type, eg. social, in an opposite environment, eg. realistic. The social person has interpersonal competencies but the realistic environment demands technical competencies; the social person values social and ethical activities while the emphasis of the realistic environment is on conventional values and goals such as money, power and possessions. The social person views himself as idealistic, tactful and insightful, while the realistic environment reinforces practical, frank and insightful traits. Holland (1973) stated "these negative interactions should result in gross dissatisfaction, ineffective coping behavior, and probably leaving the environment" (p. 38).

The hexagonal model allows for the identification of

four levels of congruence for each of the six types. By using two or three letter codes for the types and environments, more levels can be obtained.

Consistency refers to the interaction of types within an environment or characteristics within the person. The consistency of an environment or person is determined by relating the first two elements of the environment code or personality code to the hexagonal model. The consistent person or environment will behave more predictably than will the less consistent person or environments.

Holland (1973) contends that person-environment interactions are also affected by the differentiation of types and environments if other things--congruence and consistency--are equal. A well-defined person in a well-defined environment will be most predictable and intense, while the diverse elements and forces of an undifferentiated person-environment pairing will be least predictable.

Support for person-environment interactions. The assumption that individuals working in environments congruent with their personality patterns experienced more job satisfaction than individuals working in incongruent environments was empirically supported in studies conducted on college populations. For example, Walsh, Howard, O'Brien, Santa-Maria and Edmondson (1973) used a sample of 140 male and female undergraduate students to explore the differences between students who reported a congruent occupational choice and

students who reported an incongruent occupational choice. The selected variables included satisfaction, measured by the College Student Satisfaction Questionnaire (CSSQ); self-concept, assessed by the Tennessee Self Concept Scale (TSCS); self-acceptance, investigated by the Berger Scales of Self-Acceptance and Acceptance by Others; and vocational maturity, measured by the Vocational Development Inventory (VDI). In this study, congruence was defined as the consistency of the first letter of the reported occupational choice code with the primary personality type of the student determined by the highest score on the SDS. Although a preliminary analysis of the data, based on this one code congruence, did not reveal significant differences in satisfaction between congruent and incongruent students, data analysis, using a two highest code description of congruence, yielded significant results. Incongruent students were found to differ significantly on four of the satisfaction scales when compared to students who reported occupational choices congruent with the SDS scores. The authors conclude that these results supported Holland's ideas that congruent person-environment relations are conducive to greater satisfaction. Furthermore, their findings suggest that the congruence of the personality pattern, rather than congruence of personality types, might be an important consideration.

Nafziger, Holland and Gottfredson (1975) tested Holland's person-environment congruence theory on a sample

of 1878 male and female college students using the student's major field of study as the environment criteria. The findings of this study demonstrated that students whose types were least like the Holland codes of their majors, reported the least satisfaction. Students with codes that matched their types indicated greater satisfaction.

The relationship between personality patterns and satisfaction and certainty was examined by Spokane and Derby (1979). Their sample of 129 female undergraduates was administered the Barron's Ego Strength Scale, the Levenson Locus of Control Scale, and the VPI. Congruent scores were calculated by coding the subject's expressed major choice to Holland's environmental typology, and the three-letter codes from the VPI. Although a multivariate analysis of variance revealed no significant difference between congruence and satisfaction, congruent subjects were found to be significantly more consistent and reported higher levels of certainty and perceived congruence.

Mixed results for the person-environment congruence assumption were found by Morrow (1971) in his sample of 323 undergraduates. Using the VPI, he assigned a high point code type to a group of math majors--86 male and 61 female--and a group of sociology majors--54 male and 122 female. He found that level of congruency was related to satisfaction for the math majors but a uniformly high level of satisfaction was found in both congruent and incongruent subjects in the sociology group.

Holland's person-environment congruence hypotheses has also been tested in occupational environments. Mount and Muchinsky (1978) selected a sample of 362 employees representing five of Holland's six personality typologies. The findings of this study indicated that job satisfaction, as measured by the total score of the Job Description Index (JDI), and satisfaction with work itself, as measured by the work scale of the JDI, were significantly higher for congruent subjects than for incongruent subjects. However, although the means for the congruent group were higher for each dependent variable across all environments than for the incongruent group, a signficant congruent by environment interaction occurred for five of the six dependent variables. The authors suggested that these findings may indicate that the relative magnitude of the differences between congruent and incongruent subjects varies across environments.

The findings for subjects in the social environment, consisting of nurses and home economists, are of particular relevance to this study. No significant differences were obtained between congruent and incongruent subjects in this group, indicating that subjects in this group were equally satisfied with all aspects of their work. These results were distinctively different from those obtained in other environments.

The authors suggest some possible reasons for the differences found in the social group. They indicated, for example, that the two occupations represented in the social

group--nurses and home economists--may be sufficiently diverse or flexible to find aspects of their work compatible with their own interests, thus negating the congruent effects.

Aranya, Barak and Amernic (1981) used a sample of 1952 Canadian anglophones and francophone chartered accountants and California Certified Public Accountants to examine the congruence-satisfaction hypotheses. The most frequently occurring personality pattern of the accountants, CES, was consistent with Holland's coding of individuals in this occupation. Subjects having this CES pattern, or other combinations of these letters, were found to be generally more vocationally satisfied, more committed to their professions, and more organized than other combinations of personality types found in the sample.

Dotey and Betz (1979) investigated the job satisfaction of 45 men and 43 women sales managers in a pharmaceutical firm. The subjects had a mean age of 32 years and a mean job tenure of two years. The results of this study supported the ES personality classification of both male and female sales managers as described by Holland. As a group, the sales managers studied in this sample were highly satisfied with their jobs, and job satisfaction was found, to some degree, to be related to the strength of the ES themes in the managers' personality codes.

Holland's theory of congruence and satisfaction was investigated by Herner and Meir (1981) in a nursing population. Their sample consisted of 126 registered nurses,

aged 22-60, with a median of 11 years' nursing experience. The nurses were classified according to their clinical areas--maternal-child, community, pediatrics, mental health, chronic patients and geriatric care, medical, surgical, emergency and intensive care, and operating room nurses. Each clinical area was represented by 14 registered nurses. The List of Courses in Nursing (LCN), a measure adopted from Meir and Gate (1981), was used to assist the nurses in choosing the degree of attractiveness or satisfaction. Congruence was defined as existing if nurses were working in clinical areas which matched their preference.

The responses of nurses working in each clinical area were compared with the responses given by the total sample. In general, the findings of this study supported the congruence hypothesis within the scope of the nursing profession. A .44 correlation was found between congruence, taken as an internal variable, and job satisfaction.

Summary

An overview of the main constructs of Holland's (1973) Theory of Vocational Choice has been presented with reference made to other researchers who contributed to its development. The theoretical components of personality types, environmental models, person-environment pairing and person-environment interaction have been discussed in detail with a specific focus on their description, assessment application and research support.

Most of the cited studies showed a strong to moderate support for the constructs, specifically for the personality types and environmental models. No support was found for the person-environment pairing hypothesis by Hughes (1972). Mixed results for the congruence-satisfaction hypothesis was evident in the studies by Morrow (1971) and Mount and Muchinsky (1978).

Job Satisfaction

Industrial studies that began to view the worker in a holistic manner, with complex needs and feelings, first appeared in the literature in the 1930's. A pioneer in this area was Robert Hoppock (1935). After interviewing a cross-section of workers, Hoppock concluded that work satisfaction was related to the individual's ability to adapt to situations, ability to relate to others, relative status in the socio-economic group with which one identified, and the nature of the work in relation to abilities, interests and preparation for the job.

Elton Mayo (1945), in his Hawthorne studies, considered the worker from a psychological perspective. Experimenting on the working conditions of a chosen group of factory employees, Mayo concluded that the most important determinant of job satisfaction was group interaction. The morale of his experimental group increased at every change in conditions, whether better or worse.

The theories of motivation, developed by the humanistic psychologists, further strengthened the assumption that job satisfaction was related to the personality constructs of the worker. Maslow (1970) proposed that all individuals have basic sets of needs they strive to fulfill. In the context of individual behavior, an individual strives to meet these needs in a work environment. Maslow and his supporters, McGregor (1960), Betz (1971), and Slocum (1972), have suggested that individuals with different sets of needs, even though working in the same job and working under the same conditions, would not necessarily experience the same level of overall job satisfaction.

Herzberg (1959) developed a theory of job satisfaction based on Maslow's hierarchy of needs. He concluded, however, that not all factors contribute to job satisfaction. Herzberg's Motivation-Hygiene Theory views man as having two categories of needs. The motivating needs, which do contribute to satisfaction, cover aspects of the job extrinsic to the work itself. These factors include achievement, recognition for achievement, work itself, responsibility, advancement and psychological growth. The hygiene needs, which do not increase satisfaction, include the avoidance of loss of life, hunger, pain, sex deprivation and learned fears. Other elements, outside the working conditions, such as wages, company policy, supervision and working conditions, contribute to job dissatisfaction.

One of the more recent formulations of the need

fulfillment theory is the "Theory of Work Adjustment" (Davis, England, Lofquist, 1964; Davis, Lofquist and Weiss, 1968). In the context of this theory, the work environment is viewed as a reinforcer system. Organization can thus be described as sets of reinforcer systems for different classes of workers. Supporters of this theory hypothesize that job satisfaction is a function of the correspondence between the needs of the individual and the reinforcer (i.e., need-fulfillment systems) of the job.

Smith, Kendal and Hulen (1969) defined job satisfaction as "the feeling a worker has about his job" (p. 96). The comprehensive investigation of job satisfaction by these authors has led to the identification of five specific conditions which they feel exert major feelings of worker satisfaction. These factors include aspects of the job itself, the nature of the work, the details of remuneration, the nature of promotional opportunities, the characteristics of supervision and attitudes of co-workers in the job. The culmination of their research efforts resulted in the development of the Job Descriptive Index (JDI), the assessment tool used to measure job satisfaction in this study.

Summary

The expansion of the components of job satisfaction from monetary benefits to a more holistic view of worker psychological rewards has been discussed. The works of important researchers who contributed to this focus have been outlined.

Personality Characteristics of Nurses

Studies throughout the past three decades have investigated the importance of personality characteristics as an important variable in the nursing profession.

One of the first recorded studies which attempted to examine the personality characteristics of this group was conducted in the United Kingdom by Petrie and Powell (1951). These authors administered a battery of 12 personality and intelligence tests to 126 student nurses in an attempt to support their hypothesis that personality was at least as important as IQ in a good nurse. These test scores were correlated with a rating score, consisting of tutor, sister and matron assessments on 18 personality and ability traits, which were the criteria for a good nurse. These authors concluded that "personality variables were more important predictors of a good nurse than were the intelligence variables" (cited in Lewis & Cooper, 1976, p. 211).

Description of Nurse Personality Characteristics

The investigation of nurses' personality characteristics, based on a need focus, was undertaken by a number of researchers in the 1960's and early 1970's. Some of these researchers found that persons in the nursing group displayed a need pattern which distinguished them from other individuals who did not select this profession.

For example, Redden and Scales (1961) used the Edwards

Personality Preference Schedule (EPPS) to compare nursing students with college women. Significant differences were found between these two groups on 12 of the 15 variables. Nursing students scored higher on the traits of deference, introception, nuturance, endurance, and aggression, and lower in order, exhibition, autonomy, affiliation change, dominance, and heterosexuality.

Costello (1967), in his review of seven nursing studies which examined the need personality characteristics of nursing students, found results which gave some support to the work of Redden and Scales (1961). The assessment tool used in all these studies was the EPPS. The results of this investigation demonstrated that nursing students had a greater need for deference and endurance and less need for dominance and autonomy than the comparable group of female college students.

The assumption that the personality need pattern of nurses was different from that of other mental health professionals was addressed by Bailey and Claus (1969). They used the EPPS to compare the responses of medical, dental and nursing students to Edwards (1959) norm group of general college women. The results of this study revealed that all three groups of health science students had greater needs of endurance than the norm group, while the nursing sample was unique in their high scores on nurturance and intraception and lower scores on succorance, aggression, exhibition, and heterosexuality.

A study by Caputo and Hanf (1965), however, failed to support the existance of an occupational need personality in nursing. Using the EPPS, they compared two groups of registered nurses, two groups of senior nursing students, two groups of freshmen nursing students, one group of college women, one group of adult women and one group of high school graduates. The results of the study showed that all groups correlated significantly with each other on all scales.

> In general, rank-ordered correlation methods appear to demonstrate that, although there is a communality of personality attitudes as measured by the EPPS among most nursing groups, these groups are not consistently discriminated from other groups of females who are not involved in nursing. (p. 434)

In attempts to explain their results, these authors suggested that because nursing represents an expedient way of obtaining financial security and independence prior to marriage, personality needs may not be influential in choosing this career. Also of interest is their statement that further research may be needed because the nursing profession is too diverse to use a broad vocational designation.

Aldag and Christenson (1967) examined the personality characteristics of male student nurses to determine if they differed from females in this profession. An analysis of their Minnesota Multiphasic Personality Inventory (MMPI) results revealed that the personality profile of male nursing students was

> more similar to female students of nursing than the profile of male junior college students to female

> junior college students. The MF scale analyses indicated that male and female nursing students are more "feminine" than male and female junior college students. (p. 376)

Hecht (1980) used the SDS to examine the personality codes of male and female nursing students in order to determine race and sex differences in nursing groups. No significant differences were found in the Holland personality codes by race but differences were observed between men and women. Men were more likely to have a high point code of I or R instead of the predominate S high point code found in the female nurse population.

Description of Nurse Personality Characteristics in Specialty Areas of Work

Some investigations have shown that personality differences are evident in nurses who chose certain specialty areas of work. For example, Miller (1965) investigated the personality characteristics of graduate nursing students majoring in four different clinical nursing specialties--Medical-Surgical, Maternal-Child, Public Health, and Psychiatry. The Medical-Surgical majors tended to be more passive, less independent and more conventional than the other majors. The Maternal-Child group were characterized by a higher degree of feminine interests, a more gentle and sympathetic manner, and a slower, more relaxed pace than were the other groups. A greater emphasis on values, social approval, orderliness, efficiency and promptness was displayed by the nurses in the Public Health group. The

Psychiatric nurses were found to be more forceful, independent, rebellious, preoccupied with personal conflicts and more similar to creative individuals in their interests than were the other majors.

Charter (1967) studied a sample of 95 female nurses, enrolled full time in a Masters of Science degree program. Four groups of clinical majors were represented--Medical-Surgical, Maternal-Child, Psychiatry and Public Health. The results of this study indicated that the Medical-Surgical and Maternal-Child group were more dependent and conforming, while the Public Health and Psychiatric students were characterized by a greater degree of independence and autonomy. In the area of intellectual disposition, nurses majoring in Psychiatry had the highest scores, while the Maternal-Child subjects received the lowest scores. The Psychiatric and Maternal-Child groups appeared to be more socially oriented than did the Medical-Surgical and Public Health group. The author concluded this study supported the differences found between these groups in Miller's (1965) study.

Description of Nurse Personality Characteristics in Specific Roles

As well as identifying differences in the personality characteristics of nurses who chose certain specialty areas, the various roles within these areas selected by nurses gives evidence of significant differences in terms of their personalities. For example, Miller (1966) used the four

major clinical groups of his 1965 study--Medical-Surgical, Maternal-Child, Public Health, and Psychiatry--but extended his research to investigate the differences between individuals in these groups who chose teaching or supervision specialties.

This study found that the teaching group had more capacity for emotional experience, were more well-groomed and well dressed, and were generally more warm, charming, and insightful with a wide range of interests and high personal aspirations when compared with the supervisor group. The supervisor group, on the other hand, were found to be more sensitive, moralistic, rebellious, lacked verbal facility, avoided close interpersonal relationships and did not have a clearly formulated personal philosophy. The author concluded that the data from these two studies suggest that personality differences are not only found in nurses who chose different specialty areas but also those who chose teaching or supervision.

A study by Graham (1967) focused on identifying the differences between graduate nursing students who were preparing for teaching or supervisor roles in the clinical nursing specialties of Medical-Surgical and Psychiatric nursing.

The results of this study demonstrated measurable differences in personality traits between graduate students selecting teaching and supervisor roles in terms of inner life and social happenings. Within the psychiatric group,

the teachers demonstrated a higher need to achieve success through personal effort and to have approval for contemplation and interpersonal development than did the supervisor group. More value was placed by the supervisor group on social position, status in work, monetary gains, and the acquisition of property. The author concluded that although some differences between the teaching and supervisor group could be traced to the particular functionary role, the clinical specialty area was a better predictor of personality traits than was the functional role served within the area.

Personality Characteristics and Achievement in Nursing

Some investigators have supported the view that personality characteristics are important variables in the prediction of success in a nursing program.

For example, a concern for the high attrition rates in schools of nursing prompted Mowbray and Taylor (1967) to investigate the relationship of students' interest profiles to their successful completion. The results of this study showed that both the Kuder Preference Record (KPR) and the Strong Blank for Women--Revised (SBFWR-R) could be used to discriminate between students who remained in the school and those who left.

> Students who are strongly oriented towards working with people in a helping relationship tend to stay in school and effect a good adjustment to their educational experience. (p. 81)

Brenna and Marsico (1980) found that the nurses who were successful in completing their training demonstrated a higher degree of socialization, dominance, tolerance and self-control than did the nurses who left the training program.

Lewis (1980) investigated the personality characteristics of 402 qualified and active nurses at various stages of their careers. This author found that successful nurses appeared to be more intelligent, conscientious, persevering, imaginative and creative, but at the same time socially aware and in control of their emotions, more emotionally mature and more experimenting.

Thurston (1968), however, using the MMPI, failed to find any relationship between personality factors and achievement in nursing. None of the scales produced a significant difference between achiever and underachiever or achiever and failure, or underachiever and failure categories. This author concluded that

> the MMPI cannot be used to predict academic success in nursing education, and if the MMPI were used at all for selecting and counselling student nurses, it would be necessary to employ a psychologist who was skilled in the use of the MMPI and willing to submit his judgement to empirical test. (p. 267)

Personality Characteristics and Job Performance in Nursing

Some researchers have shown that personality characteristics are related to job performance. For example, Cohen, Trehub and Morrison (1965) found that nurses who were rated poorly by their supervisors demonstrated higher needs for

exhibition and autonomy and lower needs for deference, while high supervisor performance ratings were found in nurses who displayed high achievement and lower succorance needs.

The relationship of on-the-job performance to personal history, personality and ward administrative climate were studied by Dyer, Cope, Monson and Van Dremmelon (1972). These authors found that nurses who received the highest performance ratings had higher California Personality Inventory (CPI) profiles for social presence, sense of well-being, responsibility, tolerance, achievement via conformance, and intellectual efficiency. They were motivated people who wanted to achieve professionally. The authors cautioned that these nurses' motivation levels "may make them more restless employees unless they are provided with opportunities to match their abilities and goals" (p. 303).

Summary

The importance of personality characteristics as a variable in nursing has been supported. Nursing students have been generally found to differ significantly from female college students on the EPPS scale. One study by Caputo and Henf (1965), however, failed to support differences between these groups. Significant differences in personality traits have been found in nursing graduate students who were studying in different specialty areas, as well as in nurses who chose specific roles in these areas.

All but one study by Thurston (1968) has demonstrated that

personality characteristics are important for achievement and success in nursing. Differences in practicing nurses' scores on EPPS and CPI variables have shown how personality characteristics are related to job performance.

Job Satisfaction in Nursing

The relative importance of job satisfaction among nursing samples has been investigated by some researchers. For example, Diamond and Fox (1958) found in their study of staff nurse turnover, that 30-40% of the resignations were directly based on dissatisfaction with job-related factors. Similarly, Salch (1965) reported that 32% of nurse resignations in his study were due to dissatisfaction with work-related factors.

McCloskey (1974), in a sample of 152 registered nurses from two metropolitan areas, attempted to determine which factors would influence the length of time a hospital staff nurse stayed on her job. Her results indicated an unanimous choice of psychological rewards and safety and social rewards by hospital staff, suggesting that nurses left jobs for lack of external rewards.

Two studies (Clarke, 1975, and Linehan, 1978) found no relationship between job satisfaction and absenteeism on the job.

Some investigators have attempted to identify the factors which contributed to job satisfaction in nurses as compared to other workers in the health field. For example, Slocum, Susman and Sheridan (1972) looked at need satisfaction in a

hospital setting. A significant difference in need satisfaction was found to exist between professional and paraprofessional employees. Professional nurses reported higher job satisfaction with job security, prestige within the organization and job autonomy than did the paraprofessional group. Job performance was found to correlate significantly with the fulfillment of self-actualization needs for the professional employees.

Palola and Larson (1965) found the job satisfaction criteria of registered nurses differed from practical nurses, nurses' aides, medical technologists, x-ray technicians, office workers and unskilled employees. In comparison to these other groups, nurses demanded more from their environments, wanted more independence in career participation, desired recognition from others for their work as well as receiving external rewards from the job, and wanted to be seen as professional persons rather than as physician's or head nurse's axcillary hands.

Most of the research on job satisfaction in nursing has been directed towards exploring the specific factors which contribute to job satisfaction within the nursing profession. For example, Longest Jr. (1974) requested a sample of 195 registered nurses to rank in order of importance, ten factors of job satisfaction identified by House and Wigdor (1967). These factors were based on six studies reported by Herzberg (1966). The rank order of the ten factors, from most to least important, were achievement, interpersonal relations,

work itself, policy and administration, responsibility, supervision-technical, salary, working conditions, recognition and advancement.

When these findings were compared with the rank order identified by Herzberg, the correlation coefficient was .164. The author concluded that the perception of registered nurses in this sample did not add much support to Herzberg's findings.

The same rank ordering task was then given to a sample of 24 directors of schools of nursing. They were requested to rank the factors a registered nurse would perceive as contributing to her job satisfaction. The ordering of the factors, from most to least desirable, by the directors were achievement, recognition, interpersonal relations, responsibility, policy and administration, advancement, salary, supervision-technical, work content and working conditions.

A correlation of +.467 was found between the director's ranking and Herzberg's findings, while the registered nurses' rankings only received a +.311 correlation with the director's results.

The author concluded

> registered nurses do not perceive the factors that influence their job satisfaction with the same relative importance as many other categories of workers. Furthermore, there are differences in the way the practicing R.N. and nursing educators perceive these factors. (p. 52)

Longest Jr. suggests these differences in perception between nursing educators and registered nurses may result in students

being unrealistically prepared to deal with the actual job satisfaction factors present in a real work situation.

Munson and Heda (1974) developed a job satisfaction measure based on Porter and Lawler's (1965, 1968) questionnaire. After administering it to 351 registered nurses working in a hospital setting, an analysis demonstrated that job satisfaction of hospital nurses involved not only extrinsic rewards such as salary, but also factors related to interpersonal relationships, self-fulfillment on the job, and professional autonomy.

Everly and Falcione (1976) investigated the perceived contributions of job satisfaction in a sample of 114 female registered nurses working in diverse clinical areas. Although the intrinsic and extrinsic reward factors were significant, the most important variable which contributed to job satisfaction in this sample was relationship orientation. This suggested to these authors that interpersonal relationships with co-workers, immediate supervisors and general supervisors were significant in terms of job satisfaction.

In a two-year research project by Slavett, Stamps, Piedmont and Haase (1978), the Index of Work Satisfaction was developed and administered to a sample of 336 nurses in 1972, and a sample of 450 nurses in 1974. Using a factor analysis approach, these authors identified seven factors which they concluded were important dimensions of job satisfaction in their sample: pay, autonomy, task requirements,

administration, interaction, professional status and doctor-nurse relationships.

Breton and White (1972) surveyed a sample of 565 registered nurses to determine their responses concerning the importance of satisfaction of certain job factors. The constructs provided in Maslow's need hierarchy were used by a panel to categorize sixteen job factors. The safety and security factors, including adequate personnel per shift, job security, physical working conditions and appropriateness of hours worked per shift, received the highest rating. Second in importance were the social needs which included congenial work associates and appreciation by patients. Esteem needs ranked third. This component included authority and responsibility to do the job and management recognition of nurses' personnel unit. Self-actualization, including patient care ranked fourth.

House (1972) looked at the relationship between personality characteristics and job satisfaction in a group of diploma and baccalaureate degree nurses in Newfoundland. She found that regardless of the educational program, nursing students who expressed dissatisfaction "obtained a higher score on the EPPS subscale of autonomy and a lower score on the subscale of order" (p. iv).

Summary

Some support has been found for the relationship of job satisfaction to staff turnover and absenteeism in the nursing

profession. Job satisfaction has been found to relate more to a higher level of need fulfillment in the professional group of nurses than in the paraprofessional hospital employees. An examination of various studies has outlined the specific factors nurses ranked as important for their job satisfaction. One study by House (1972) has identified the personality characteristics related to job satisfaction in a sample of nursing students.

Chapter III will outline the methodology of the study, including a description of the sample, procedure, instrumentation and techniques of data analysis.

CHAPTER III

METHODOLOGY

For the purposes of this study, a random sample of nurses working in the Intensive Care and Psychiatric units of hospitals in the Province of Newfoundland and Labrador were selected. The nurses completed a questionnaire designed to assess their personality characteristics: The Self-Directed Search (Holland, 1982); and their level of job satisfaction, The Job Descriptive Index (Smith, Kendal & Hulen, 1965). This information was then coded for purposes of analysis.

The Sample

The sample consisted of 74 nurses working in the Intensive Care area and 78 nurses working in the Psychiatric area who were randomly selected from eight hospitals in the province of Newfoundland and Labrador.

Six of these hospitals provided general nursing care to an adult population with a variety of health needs; one was classified as a pediatric institution and one specialized in meeting the needs of the emotionally ill individual. These hospitals had an average bed capacity of 300, with an average bed census of 12 in the Intensive Care units and 20 in the Psychiatric areas.

The number of nurses used in the sample by sex and specialized area is outlined in Table 1.

Table 1

Sample Nursing Population by Sex and Specialized Area

Sex	Specialized Area		
	ICU	Psych.	Total
Male	1 (1.35%)	7 (8.97%)	8 (5.26)
Female	73 (98.65)	71 (91.03)	144 (94.74)
Total	74 (100%)	78 (100%)	152 (100%)

The typical ICU nurse was between 26-30 years of age and had worked in this specialty area from 1-3 years. The average nurse in the Psychiatric area was between 31-35 years old, and had worked in the specialty area for 4-5 years.

Sampling Procedure

The study involved the use of a survey type questionnaire (Appendix A) which was designed to assess the Holland personality characteristics and job satisfaction of nurses working in the Intensive Care and Psychiatric areas.

Because of differences in hospital policies in releasing the names and addresses of nurses working in their institutions, two procedures were used for questionnaire distribution. From the list of nurses' names obtained from six of the contacted institutions, a random sample of 150 nurses was chosen using a table of random numbers. Each of these nurses were mailed a cover letter outlining the purpose of the study (Appendix B), a copy of the assessment questionnaire, and a stamped self-addressed envelope.

In the remaining two hospitals, cover letters, assessment questionnaires and returning envelopes were hand delivered by the researcher to the nursing supervisors of these specialized areas. These supervisors followed the instructions for the use of the table of random numbers and selected a random sample of 50 nurses from this group. The supervisors hand delivered and picked up these questionnaires and presented them to the researcher on a return visit to the hospital.

Respondents in both groups were informed that all information received would be confidential in nature. This was assured by assigning all questionnaires a code number corresponding to their name and specialized unit of employment. All data was subsequently handled by this code number with the master list accessible only to the researcher.

Two methods were used for follow up procedures.

Letters of reminders were sent to nurses who were mailed the questionnaire. The supervisors of the remaining two hospitals made personal contact with the nurses in their sample and returned these responses to the examiner by mail.

Eighty-six per cent of the questionnaires were returned. Of these, 37% were ICU nurses and 39% were psychiatric nurses. Ten per cent of the returned questionnaires were deemed unusable due to insufficient information.

Instrumentation

The Self-Directed Search

The instrument used to measure the personality characteristics of nurses in this study was the Self-Directed Search (SDS) (Holland, 1982) (Appendix A). Because this assessment tool grew directly from Holland's research and theory of vocational choice, the composition of the SDS and Holland's personality types and environmental model share the same constructs (Holland, 1972).

This instrument is self-administered, suitable for persons 15 years of age and over, with an estimated reading level of grade 7 and 8 (Holland, 1972).

A number of uses are claimed for the SDS. As well as helping individuals with career choice, Holland (1972) has suggested that the tool may be useful in personnel work

> to place employees in their first position with an organization; to explore transfers from one unit to

> another; to suggest possible career ladders; and to assess employees with work adjustment problems. (p. 5)

Although the SDS is composed of two parts--a five subscale Assessment Booklet and the Occupations Finder--only four of the subscales in the Assessment Booklet were deemed relevant for use in this study. These four subscales--activities, competencies, occupations, and self-estimates--are all composed of items which determine an individual's resemblance to each of the six personality or environmental types outlined by Holland (1972)--Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C).

An individual's responses on the Activities subscale indicates his/her preference for six kinds of activities--R,I,A,S,E,C. Although these activity scales have not been tested for predictive validity, Holland (1972) has stated that "the scales in which similar items were embedded have low to moderate predictive validity" (p. 13).

Holland (1972) describes the Competencies subscale as "complex measures of a person's proficiencies and aptitudes" (p. 13). Thus, by scoring this section as indicated, an individual reports his/her competencies in six areas--R,I,A, S,E,C. The items listed in the Competencies subscales were derived from the studies of Holland and Nichols (1964b) and Richards, Holland and Lutz (1967). A low to moderate degree of concurrent validity was found between these competency scales and two aptitude tests--the Bennett Mechanical

Comprehension Test and the Minnesota Paper Form Board (cited in Holland, 1972).-

The Occupations subscales were adopted directly from the same named scales of Holland's Vocational Preference Inventory (VPI, 1965). In this section, an individual is able to indicate his preference for six kinds of occupations --R,I,A,S,E,C. Holland (1972) states, "these scales correlate with a great variety of interest and personality variables ... and also discriminant among students and adults who aspire to or are employed in different occupations" (p. 13). These scales have been found to correlate with the Kuder Scales (Rezler, 1967), the Strong Occupational Scales (Lee, 1970), and the Strong-Campbell Interest Blank (Campbell, 1971) (cited in Holland, 1972).

The final subscale of the Assessment Booklet, Self Estimates, assists the individual in estimating his/her abilities in the six R,I,A,S,E,C, areas on a scale of 1 to 7. The discriminate ability of these scales has been supported in the studies of Abe and Holland (1965a, 1965b) and Holland (1968a). Richards, Holland and Lutz (1967) found that selected self-ratings possessed low to moderate predictive validity (cited in Holland, 1972).

The summed numerical data obtained from these four subscales resulted in a personality summary code for each individual. This summary code describes a person's resemblance to each of the six personality types--R,I,A,S, E,C. Although a six letter profile is obtained, only the

three letters with the highest numerical value are used to describe the personality. The letter with the highest numerical value is the first letter of the summary code and is the most important because "it is the product of a person's most outstanding characteristics" (Holland, 1972, p. 11).

The internal consistency coefficients for Activities, Competencies and Occupational scales were calculated in a sample of 358 males and 366 females. The KR 20's for these scales ranged from .63 to .88 (Holland, 1972). In another sample of 2000 to 6000 college freshmen, Holland (1968a) reported KR 20's for the 6 VPI scales of the SDS ranged from .67 to .94.

The intercorrelations of these four scales of the Assessment Booklet, based on a sample of 347 college women, and 344 to 358 college men, are found in Holland, 1972, p. 6.

The retest reliabilities studies reported by O'Connell and Sidback (1971), and Zener and Schnville (1972), show that the final three-letter summary code of the SDS is reasonably stable for males and females. The coefficients vary from .45 to .92 and are fully reported by Holland (1972, p. 15).

The relationships between the summary scales and the individual SDS scales were studied by Holland (1971). He found that every individual scale correlated most highly with its corresponding summary scale. Holland (1971) indicated that "these results are correctly keyed to the corresponding summary scale that students use to obtain their three letter summary code" (p. 170).

The Job Descriptive Index

In this study, the job satisfaction of the sample of Intensive Care and Psychiatric nurses was assessed by the Job Descriptive Index (JDI) (Smith, Kendall & Hulen, 1975) (Appendix A).

The JDI measures satisfaction with five different aspects of a job: work itself, pay, opportunities for promotion, supervision, and co-workers on the job. Each of the job aspects on the scale contains a list of adjectives or short phrases which describe that facet in a positive or negative manner. The respondent is requested to indicate whether the descriptor applies to his present job.

A sixth sector, that of Job In General (JIG) was added to the JDI in this study following correspondence with Patricia Smith, co-author of the JDI scale. The JIG is an 18-item subscale recently developed to supplement the JDI and measures the overall satisfaction with the job in general. The response format is the same as the JDI.

The JDI developed from the authors' feelings of

dissatisfaction with the job satisfaction measurement tools available at that time. They believed that many of the inconsistencies reported in job satisfaction studies resulted from

> the overly simplified models of satisfaction used in some instances, and to other aspects of strategy, including the non-equivalence of the measures used in research in terms of the frame of reference, the extent to which the measures are evaluative, and the time perspectives to which they refer.
> (Smith, Kendal & Hulen, 1969, p. 7)

These authors have thus chosen to define job satisfaction as

> the feeling a worker has about his job ... these feelings are associated with a perceived difference between what is expected as a fair and reasonable return and what is experienced, in relation to the alternatives in a given situation. (p. 6)

Factor analysis done on the works of a variety of researchers such as Ash (1954), Austin (1958), Bachr (1954, 1956), Bachr and Renck (1958), Dalias (1958), Harrison (1961), Heizberg, Mausner, Pettison and Copwell (1957), Kahn (1951), Tevery, Schmid and Veriqley (1958), Wherry (1954, 1956), and Wrigley (1958), has resulted in the identification of five factors perceived as relevant to job satisfaction (cited in Smith, Kendal & Hulen, 1969). These five factors were labelled work, pay, promotion, supervision, and co-workers.

The selection of appropriate words and phrases to use as descriptors for each of these five job satisfaction facets were obtained from "a study of the available job-satisfaction questionnaires; from the factor analytic literature on job satisfaction; and from our own experience"

(Smith, Kendal, & Hulen, 1969, p. 13).

Four feasibility studies were conducted by these authors using a variety of workers and scoring techniques to determine the validity of the scales for a variety of occupational and educational groups. A detailed description of these studies is found in Smith, Kendal, and Hulen, 1969, pp. 40-67. The results of the studies showed consistent convergent and discriminant validity as scored by the direct method.

Two studies were conducted by Smith, Kendal and Hulen (1969) to test the internal consistency of the JDI. In their first sample of 168 Cornell students

> preliminary studies of split-half estimates of internal consistency of both the direct and triadic JDI scales yielded an average corrected reliability estimate of .79 for the JDI Direct Scales and .74 for the JDI Tried Scales. (p. 74)

Split-half reliabilities estimated for the final revised JDI scales, using a sample of 80 male employees from two electronic plants, produced corrected estimates of over .80 (p. 74).

Tables 2 and 3 outline the intercorrelations of the JDI scales and the means and standard deviations for large samples of men and women pooled across all companies listed in the main studies by these authors.

Table 2

Intercorrelations of JDI Scales

Scale	Work	Pay	Promotions	Supervision
Work	-			
Pay	.40	-		
Promotions	.39	.42	-	
Supervision	.39	.32	.42	-
Co-Workers	.36	.28	.29	.41

N=980 males pooled across 21 plants

Scale	Work	Pay	Promotions	Supervision
Work	-			
Pay	.16	-		
Promotions	.33	.31	-	
Supervision	.43	.20	.34	-
Co-Workers	.38	.19	.28	.52

N=627 females pooled across 21 plants

(Smith, Kendal & Hulen, 1969, pp. 77-78)

Table 3

Means, Standards Deviations of JDI Sample

Male Employees Pooled Across 21 Plants

Scale	Raw Scores N	Mean	Standard Deviation	Difference of Mean from Equated Neutral Point
Work	1971	36.57	10.54	10.57
Pay	1966	29.90	14.53	7.90
Promotions	1945	22.06	15.77	2.06
Supervision	1951	41.10	10.58	8.10
Co-Workers	1928	43.49	10.02	11.49

Female Employees Pooled Across 21 Plants

Scale	Raw Scores N	Mean	Standard Deviation	Difference of Mean from Equated Neutral Point
Work	638	35.74	9.88	9.74
Pay	635	27.90	13.65	5.90
Promotions	634	17.77	13.38	-2.33
Supervision	636	41.18	10.05	8.13
Co-Workers	636	42.09	10.51	10.09

(Smith, Kendal & Hulen, 1969, p. 80)

The only information on the status of the Job-In-General subscale was found in the letter from Dr. Patricia Smith (1983) (Appendix C). She reported that

> the initial analysis of the JIG indicate both high external consistency reliability and good convergent validity. The coefficient alpha reliability was .93 for a sample of 670 employees in clerical, technical, engineering and administrative positions, and .96 for a sample of 132 county employees.

Analysis Procedures

The Holland environmental summary codes of the Intensive Care and Psychiatric areas were obtained by using the Environmental Assessment Technique (EAT) (Astin & Holland, 1961).

The resemblance of the ICU and Psychiatric environments to Holland's (1973) six environmental types was calculated by summing the numbers of R,I,A,S,E,C, types in each environment as obtained from the SDS data. The absolute numbers of these distributions was then converted to a percentage of the total number of nurses in each of these environments. The environmental types receiving the three highest percentage scores were then selected to describe the environments. The environmental type with the highest score indicated the Holland environmental type; the second and third highest scores represented the other descriptors of the environmental code.

The degree of differentiation between the two environments was analysed by two methods: Holland's (1973)

formulae for differentiation, and chi square analysis. Using Holland's method, the percentage difference between the most and least common personality types in each environment were calculated.

The chi square procedure involved an analysis of the four characteristic environmental types of the environments in order to determine significant differences in these variables.

The level of consistency of each environment was defined by the placement of their environment types on the hexagonal model (Holland, 1973) and the criteria as outlined by Holland (1973).

> Profile patterns composed of adjacent types on the hexagon are most consistent; ... profile patterns composed of opposite types on the hexagon are least consistent; ... and profile patterns composed of every other type on the hexagon form an intermediate level of consistency. (p. 24)

Congruence was defined on six levels as outlined by Holland (1972) in the Self-Directed Search. Table 4 shows the conversion which was used.

Table 4

Scaling of Six Levels of Congruence for Personality and Environmental Codes

Level of Congruence	Description of 3-level codes
6	Codes are exactly alike
5	The first two letters of the codes are in the same order
4	The first three letters are the same, but are out of order
3	The first letter in each code is the same
2	The first two letters of one code match any two letters in the other code
1	The first letter of either code matches any letter in the other code
0	The first letter of one code is not included in the other code

(Holland, 1972, p. 7)

Congruence scores were then correlated with job satisfaction scores to determine the relationship between these two variables.

Summary

This chapter has presented a description of the nature of the sample used in the study and an overview of the procedure used. An outline of the analyses used to examine the research question and hypotheses was also presented. Chapter 4 will analyze and interpret the data.

CHAPTER IV

ANALYSIS OF THE DATA

Introduction

The purpose of this chapter is to present, analyse, and interpret the data gathered in the study. The presentation of the data follows the order of the research questions and hypotheses outlined in Chapter One.

Research Question 1: What are the environmental descriptors for the Intensive Care and Psychiatric Nurse as defined by the Environmental Assessment Technique?

Table 5 presents the EAT data used to define the ICU and Psychiatric nursing environments.

The three letter Holland environmental summary code for the Intensive Care area was social (70.27%), artistic (16.22%), and investigative (8.11%) (SAI).

The Psychiatric area was defined by the three letter Holland environmental summary code of social (83.33%), artistic (5.13%), and enterprising (5.13%) (SAE). Because there is no difference in the percentage of artistic and enterprising types in this environment, the Psychiatric summary code could also be defined as social, enterprising, and artistic (SEA).

Four of Holland's personality types--social, artistic, enterprising, and investigative--were found to be characteristic of these two nursing environments. While ICU and

Table 5.

Percentages of Personality Type in ICU and Psychiatric Nursing Environments

Personality Type	Absolute Frequency	% of Types
Realistic		
ICU	0	0
Psych	1	1.28
Investigative		
ICU	6	8.11
Psych	2	2.56
Artistic		
ICU	12	16.22
Psych	4	5.13
Social		
ICU	52	70.27
Psych	65	83.33
Enterprising		
ICU	1	1.35
Psych	4	5.13
Conventional		
ICU	3	4.05
Psych	2	2.56
Total		
ICU	74	100
Psych	78	100

Psychiatry both contained social and artistic types, differences were noted in the investigative nature of the ICU environment and the enterprising composition of the Psychiatric environment.

Hypothesis 1: There is no significant difference between the Intensive Care and Psychiatric nursing environment as determined by the Environmental Assessment Technique.

Table 6 and Figure 2 present the data for the degree of differentiation in the ICU and Psychiatric nursing environments using the EAT.

These results show that both environments are well defined. The high social peaks indicate that both environments are more characteristic of the social type than any of the other personality types. The Psychiatric environment, with its 82.05 degrees of differentiation in the social area, suggests that it is more well defined than the ICU environment with its social differentiation score of 70.27.

A chi square test of independence was calculated on the four personality types which characterized both environments: social, artistic, investigative, and enterprising. Data for this analysis is presented in Table 7.

The chi square value of 9.1417, with three degrees of freedom, indicated that there were significant differences between the ICU and Psychiatric nursing environment on these four variables.

Chi square tests of independence were calculated on the SA, SI, and SE combinations of these variables to further

Table 6

Degree of Differentiation in ICU and Psychiatric Nursing Environments

Environment	% of Most Common Personality Type	% of Least Common Personality Type	Degree of Differentiation
ICU	S = 70.27	R = O	70.27
Psych	S = 83.33	R = 1.28	82.05

Figure 2

Profile of Degree of Differentiation in ICU and Psychiatric Nursing Environments

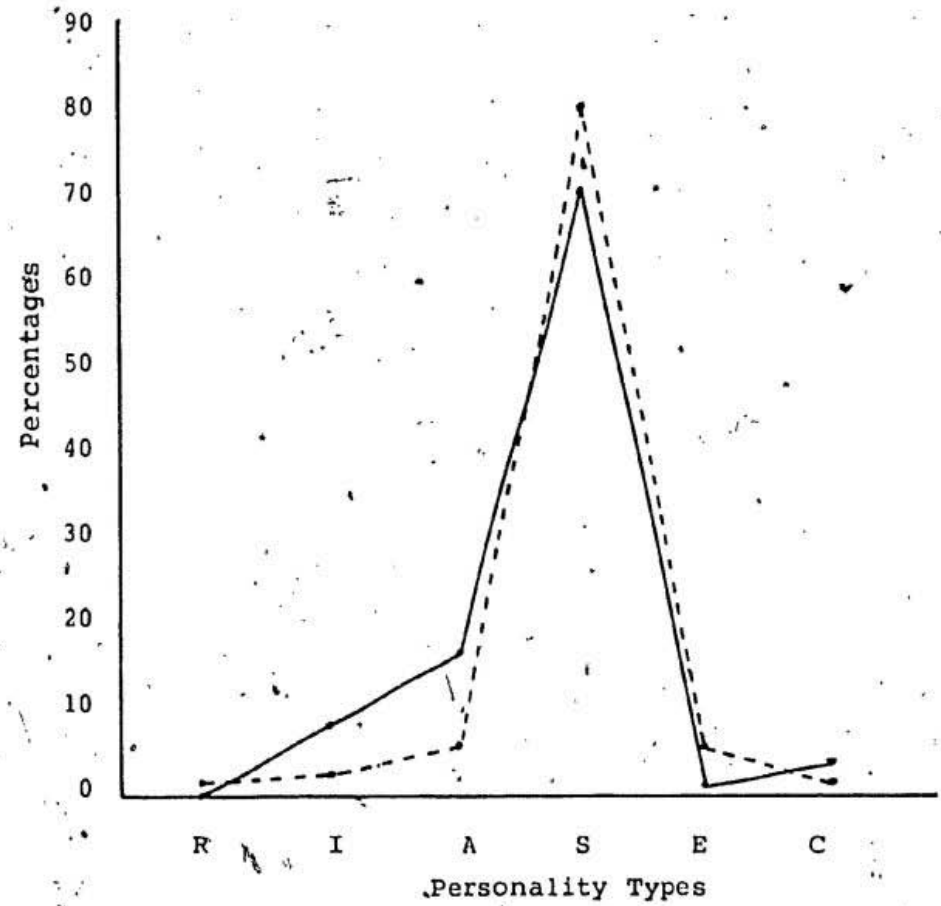


Table 7

Chi Square Test of Independence on S,A,I.E Variables For ICU and Psychiatric Environments

Frequencies and % of Types	Environments ICU	Psych	Total
Social			
Frequency	52	65	117
%	73.24	86.67	-
Artistic			
Frequency	12	4	16
%	16.90	5.33	-
Investigative			
Frequency	6	2	8
%	8.45	2.67	-
Enterprising			
Frequency	1	4	5
%	1.41	5.33	-
Total	71	75	146

$X^2 = 9.1417$, dF = 3, Significant at .05 level

analyze these differences. Table 8 presents the data for these calculations.

Table 8

Chi Square Test of Association for SA, SI, SE Combinations Compared Across Environments

Variables	X^2	dF
S & A	5.2639*	1
S & I	2.811	1
S & E	1.166	1
Total	9.2409	3

*X^2 significant at .05 level.

A X^2 of 5.2639 with 1 degree of freedom demonstrated that significant differences were found in the S and A combination. The 16.90% of artistic types found in the ICU environment was significantly greater than the 5.33% of artistic types in the Psychiatric environment. Thus, the ICU environment was significantly more artistic in nature than was the psychiatric environment, while the Psychiatric environment was found to be significantly more social (86.67%) in composition than the ICU environment with its 72.24% of social types.

These results show that the Psychiatric environment was somewhat more differentiated than the ICU environment. Because no significant differences were found in the artistic and enterprising types of the Psychiatric environment, this area was primarily social in nature and the placement of the artistic and enterprising types in the summary code did not make any significant difference in its composition.

The ICU environment, however, is characterized by a primary social type, a secondary type of artistic, with the third placement of investigative types probably not being of significance, compared with the other emplaced types of conventional, realistic and enterprising.

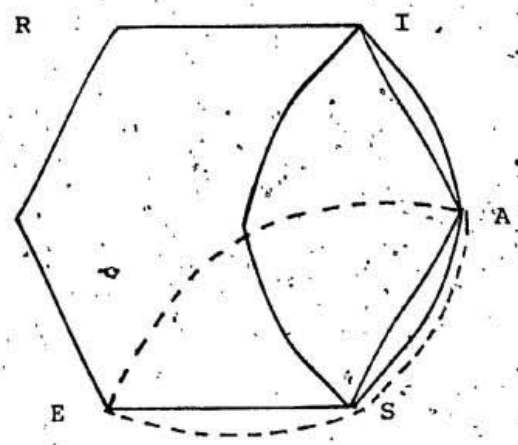
Differences in the level of consistency between the ICU and Psychiatric environments were examined by using the hexagonal model (Holland, 1973). Figure 3 outlines these differences.

The Psychiatric environment had a high level of consistency because both the artistic and enterprising components of the summary code occupied adjacent positions to the primary social type on the hexagonal model.

The ICU environment had an intermediate level of consistency. Although the artistic type was adjacent to the primary social type on the hexagonal model, the investigative component had an 'every other' placement on the model.

Figure 3

Level of Consistency for ICU and Psychiatric Nursing Environments



ICU = SAI ( )

Psych = SAE,SEA ( )

Thus the Psychiatric environment was more consistent than the ICU environment.

Hypothesis 2: There is a significant difference between the job satisfaction scores and congruency scores of nurses working in the ICU and Psychiatric environment as defined by the EAT congruency method.

The relationship between the satisfaction scores of each of the six categories of the JDI--work, pay, promotions, supervision, people, and job in general, and the six EAT congruency levels were examined for the ICU and Psychiatric groups. Tables 9 to 14 and Figures 4 to 9 outline this data.

When congruency was defined on six levels, as described by Holland (1973), there was no clear differentiation between the satisfaction scores of nurses who obtained a 3, 5 and 6 congruency level. These nurses did, however, tend to be higher on the job satisfaction variables than nurses with 1, 2 and 4 levels of congruency.

The only significant difference was noted in the ICU group. Congruent ICU nurses were significantly more satisfied on the people scale than were incongruent nurses.

It was assumed that the inability to distinguish between levels 3, 5 and 6 congruency was due to the high degree of differentiation of both environments. The 1 to 6 scaling of this congruency method did not account for the high number of primary social types in the environment.

Therefore, the congruency levels were redefined to

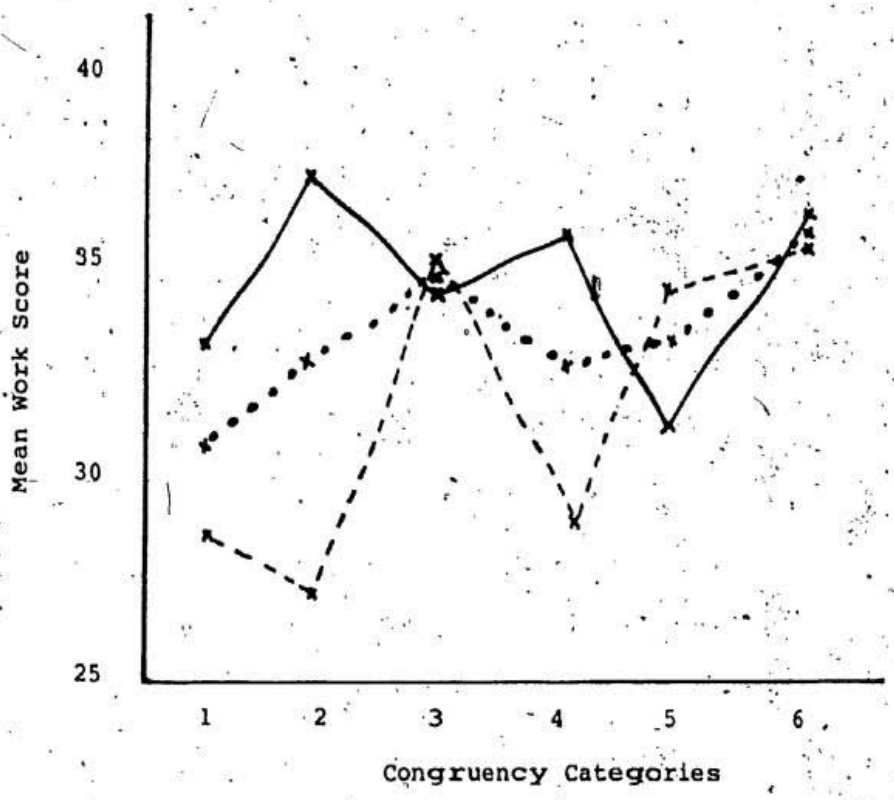
Table 9

Relationship of Mean Work JDI Scores to EAT Congruency Categories

	EAT Congruency Categories					
GROUP	1	2	3	4	5	6
ICU						
$\bar{X}$	33.1667	37.2857	34.5676	36.0000	31.2000	36.3333
SD	5.1153	9.3401	6.2296	5.7071	8.2280	4.6188
N	6	7	37	15	5	3
Psych						
$\bar{X}$	28.4286	27.0000	35.1471	28.5000	34.6000	35.7000
SD	14.9092	17.0294	10.5087	10.2824	10.7103	6.8646
N	7	5	34	12	10	10
Total						
$\bar{X}$	30.6154	33.0000	34.8451	32.6667	33.4667	35.8462
SD	11.3177	13.4570	8.4914	8.7574	9.7897	6.2429
N	13	12	71	27	15	13

Figure 4

Relationship of Mean Work JDI Scores to EAT Congruency Categories



ICU: _____

Psych: ------

Total: .....

Table 10

Relationship of Mean Pay JDI Scores to EAT Congruency Categories

	EAT Cohgruency Categories					
GROUP	1	2	3	4	5	6
ICU						
$\bar{X}$	16.6667	15.0000	18.1351	14.5333	17.0000	16.3333
SD	5.0465	4.3970	4.9619	5.7429	4.6368	3.7859
N	6	7	37	15	5	3
Psych						
$\bar{X}$	14.5714	12.4000	15.9706	10.7500	18.0000	19.5000
SD	6.9007	2.7928	6.4408	8.6036	5.2068	5.9301
N	7	5	34	12	10	10
Total						
$\bar{X}$	15.5385	13.9167	17.0986	12.8519	17.6667	18.7692
SD	5.9668	3.8954	5.7797	7.2627	4.8795	5.5401
N	13	12	71	27	15	13

Figure 5

Relationship of Mean Pay JDI Scores to EAT Congruency Categories

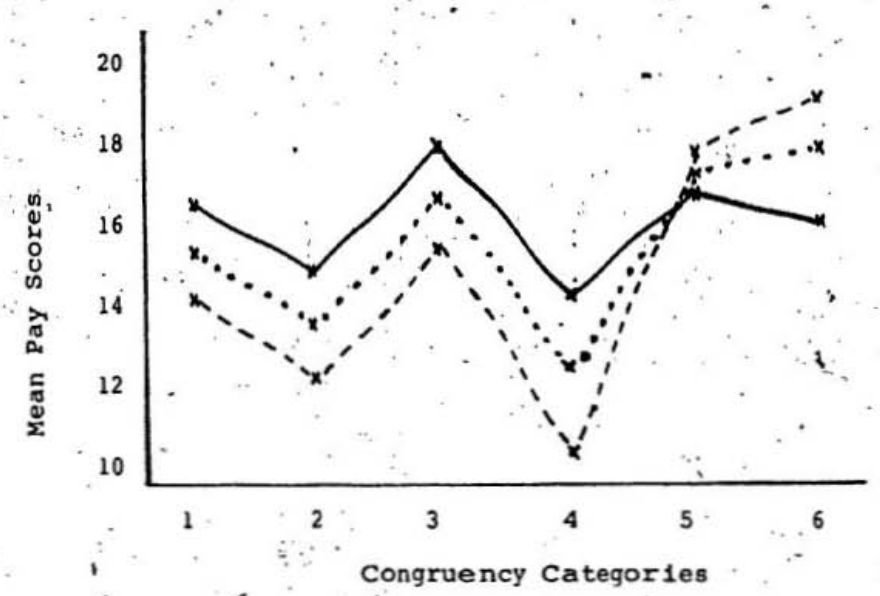


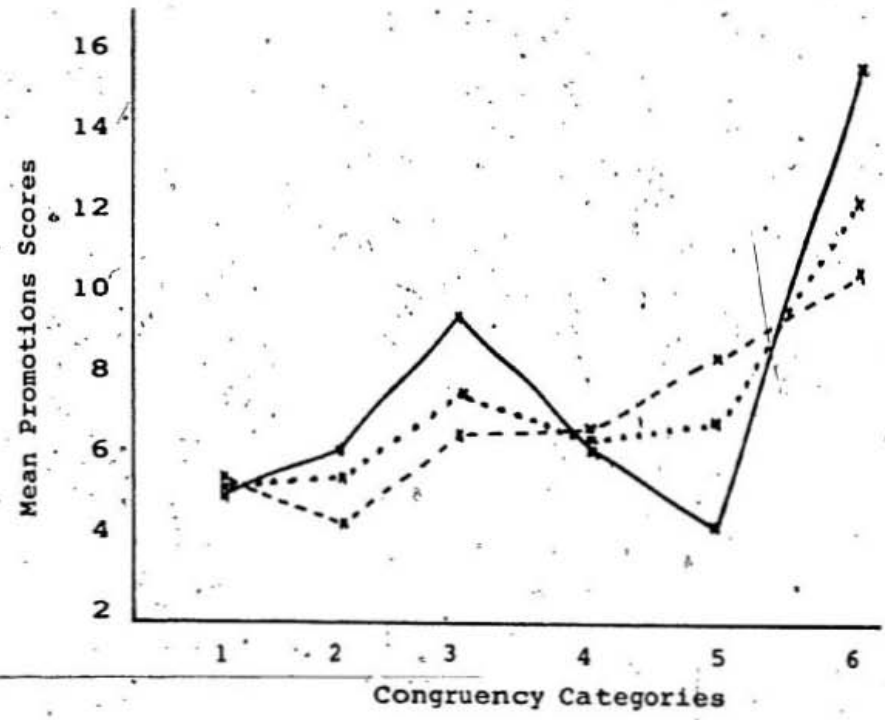
Table 11

Relationship of Mean Promotions JDI Scores to EAT Congruency Categories

	EAT Congruency Categories					
GROUP	1	2	3	4	5	6
ICU						
$\bar{X}$	5.1667	6.1429	9.5946	6.3333	4.2000	15.6667
SD	3.0605	6.0945	6.9060	5.0803	2.8636	9.2376
N	6	4	37	15	5	3
Psych						
$\bar{X}$	5.2857	4.4000	6.9706	6.4167	8.6000	10.8000
SD	5.5592	2.4083	4.6871	6.3455	9.0333	6.4773
N	7	5	34	12	10	10
Total						
$\bar{X}$	5.2308	5.4167	8.3380	6.3704	7.1333	11.9231
SD	4.3999	4.8140	6.0520	5.5619	7.7078	7.0883
N	13	12	71	27	15	13

Figure 6

Relationship of Mean Promotions JDI Scores to EAT Congruency Categories



ICU: ———

Psych: - - - - - -

Total: . . . . . .

Table 12

Relationship of Mean Supervision JDI Scores To EAT Congruency Categories

	EAT Congruency Categories					
GROUP	1	2	3	4	5	6
ICU						
$\bar{X}$	37.5000	34.0000	37.1351	39.3333	34.4000	40.6667
SD	8.0187	10.8012	13.7157	14.1202	12.5817	18.7705
N	6	7	37	15	5	3
Psych						
$\bar{X}$	30.4286	41.0000	40.7647	29.9167	42.7000	45.8000
SD	16.4708	17.0147	12.8442	18.3326	10.9448	9.3429
N	7	5	34	12	10	10
Total						
$\bar{X}$	33.6923	36.9167	38.8732	35.1481	39.9333	44.6154
SD	13.2626	13.4871	13.3362	16.5011	11.7745	11.3691
N	13	12	71	27	15	13

Figure 7

Relationship of Mean Supervision JDI Scores to EAT Congruency Categories

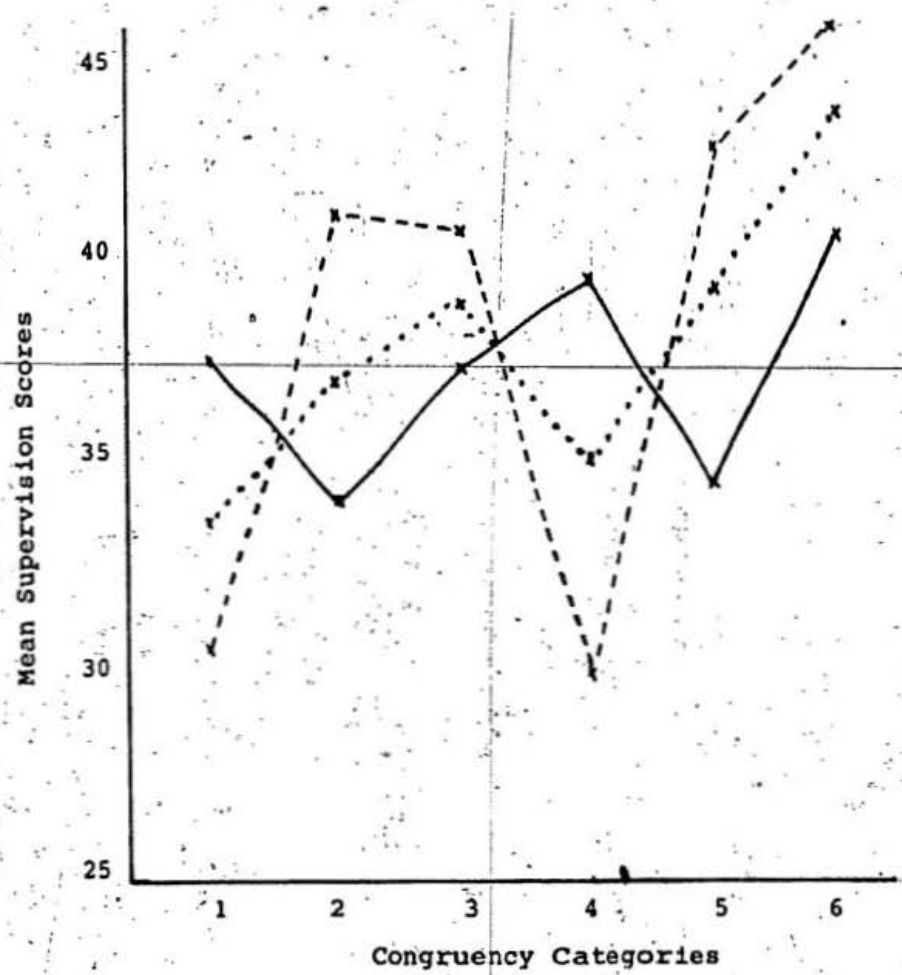


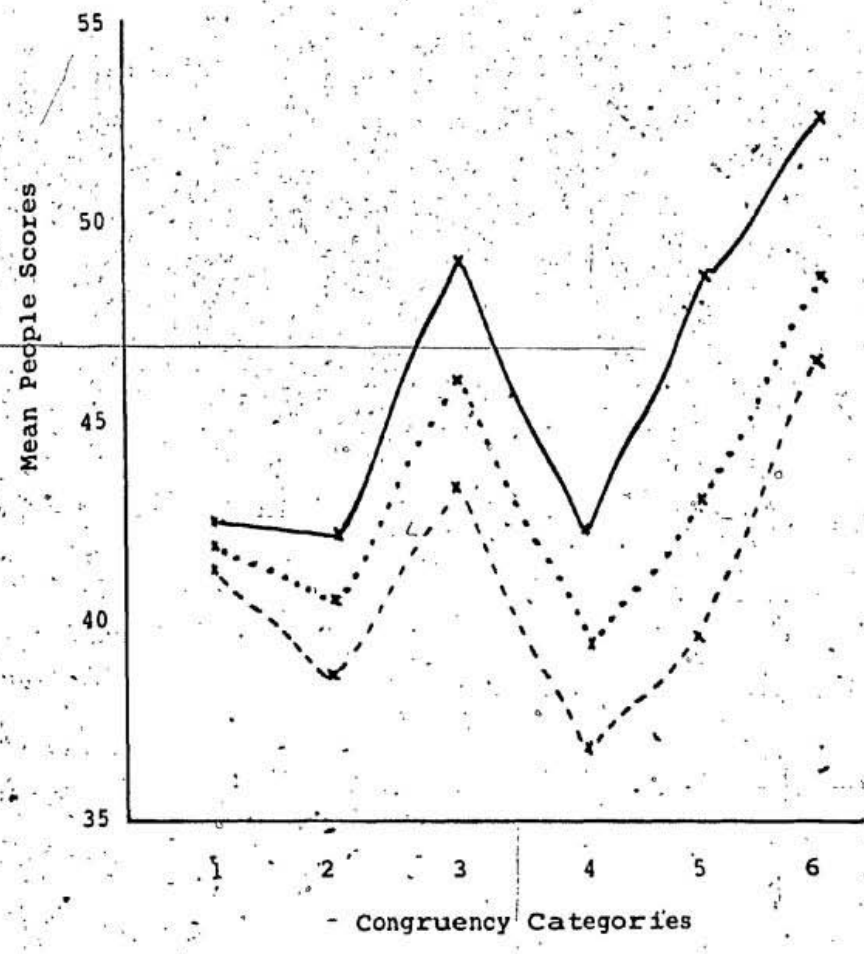
Table 13

Relationship of Mean People JDI Scores to EAT Congruency Categories

	EAT Congruency Categories					
GROUP	1	2	3	4	5	6
ICU						
$\bar{X}$	42.5000	42.0000	49.0000	42.0000	48.4000	52.6667
SD	7.9436	5.9161	4.7199	8.2894	6.0249	1.1547
N	6	7	37	15	5	3
Psych						
$\bar{X}$	41.1429	38.6000	43.2059	36.6667	39.6000	46.6000
SD	6.8440	17.1406	11.9438	12.6515	13.6072	6.1319
N	7	5	34	12	10	10
Total						
$\bar{X}$	41.7692	40.5833	46.2254	39.6296	42.5333	48.0000
SD	6.9899	11.3575	9.3384	10.5835	12.1589	5.9582
N	13	12	71	27	15	13

Figure 8

Relationship of Mean People JDI Scores to EAT Congruency Categories



ICU: ———

Psych: - - - - - -

Total: . . . . . .

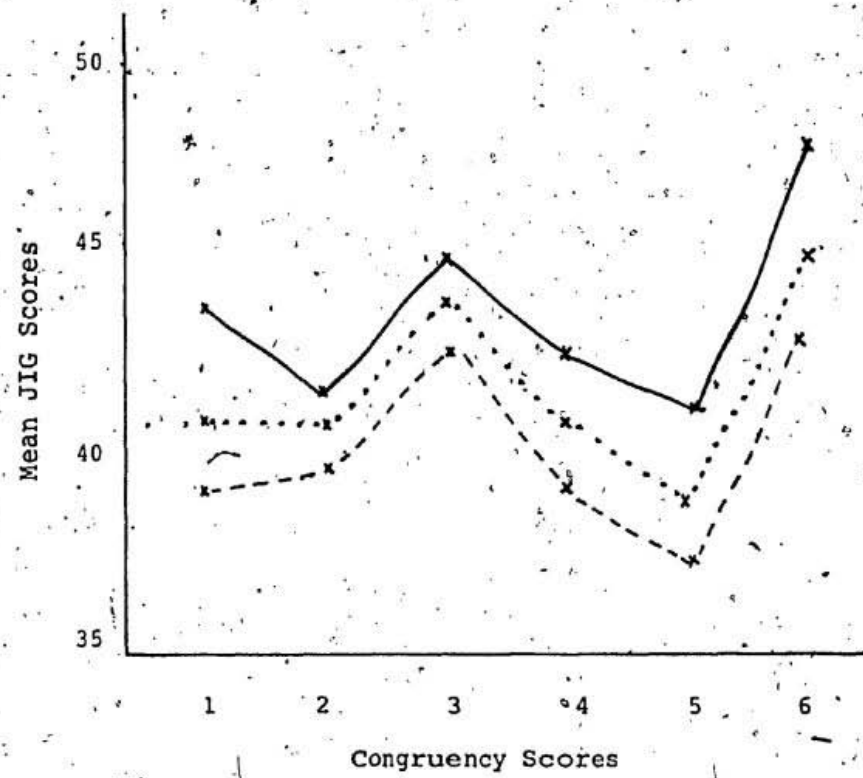
Table 14

Relationship of Mean Job In General JDI Scores to EAT Congruency Categories

	EAT Congruency Categories					
GROUP	1	2	3	4	5	6
ICU						
$\bar{X}$	44.8333	41.4286	44.7027	42.2000	41.0000	47.6667
SD	3.1885	9.3960	7.3290	6.5159	14.3527	2.5166
N	6	7	37	15	5	3
Psych						
$\bar{X}$	39.0000	39.4000	43.4706	39.0000	37.1000	43.3000
SD	13.4007	13.7040	8.5040	8.8215	16.0239	6.2902
N	7	5	34	12	10	10
Total						
$\bar{X}$	41.6923	40.5833	44.1127	40.7778	38.4000	44.3077
SD	10.2175	10.8415	9.8804	7.6427	15.0845	5.8649
N	13	12	71	27	15	13

Figure 9

Relationship of Mean Job In General Scores to EAT Congruency Categories



two categories--high congruency and low congruency. Nurses having high point social (S) codes were placed in the high congruency category, and nurses not having a high point social (s) code were placed in the low congruence category.

The reason for this redefinition of congruency categories is based on the chi square results of significant differences in the two environments. Referring to Table 6, it can be seen that congruency categories 3 and 6 would describe exactly the same levels of congruency, given these statistical findings. Congruency category 4, as defined by Holland, would actually indicate high incongruence in these environments.

The Psychiatric environment can only be described as having a high point code of social as none of the other Holland environmental descriptors revealed any significant differences. Although the ICU environment showed significant differences in both the social and artistic categories, the level of artistic in the environment was very low compared to the level of social. Therefore, because of the extremely dominant social code, the rescaling of the congruency levels into a high and low category on the basis of this code was seen to be appropriate.

A two-way analysis of variance was calculated with one independent variable being the type of nurse, ICU or Psychiatric. The other independent variable was congruency level, either high, or low. Satisfaction scores of the six

categories of the JDI was the dependent variable. Table 15 outlines this data.

On the work scale, an F value of 7.527 with 1 degree of freedom, indicated significant differences in this variable between the two groups of nurses. The ICU nurses were more satisfied with their work, regardless of their level of congruency, than were the Psychiatric nurses.

An F value of 7.139 with 1 degree of freedom demonstrated a significant interaction on the work scale between the ICU and Psychiatric nurses and low and high congruency levels. Low congruence Psychiatric nurses were found to be significantly less satisfied with their work than high congruent Psychiatric nurses. High congruence Psychiatric nurses were as satisfied with work as were all ICU nurses. Figure 10 outlines this interaction.

On the pay scale, an F value of 5.724 with 1 degree of freedom demonstrated a significant difference in the means of low and high congruent nurses. Low congruent nurses were less satisfied with pay than were the nurses with high congruence. Figure 11 outlines this data.

An F value of 5.965 with 1 degree of freedom on the promotions scale, also indicated a significant difference in the means of low and high congruent nurses. Nurses with high congruence scores were more satisfied with the promotional aspects of their jobs than were the nurses with low congruency levels. Figure 12 outlines this data.

Table 15

Relationship of Mean JDI Subscale Scores for ICU and Psychiatric Nurses and Revised Congruency Categories

Subscale	Categories of Congruency	Statistics	ICU	Psych	Total
Work (a,c)	Low	$\bar{X}$	35.8	26.2	32.3
		SD	6.44	15.55	11.53
		N	22	13	35
	High	$\bar{X}$	34.5	34.4	34.4
		SD	6.39	9.66	8.33
		N	52	65	117
	Total	$\bar{X}$	34.9	33.0	
		SD	6.39	11.16	
		N	74	78	
Pay (b)	Low	$\bar{X}$	14.5	13.5	14.1
		SD	5.13	5.27	5.13
		N	22	13	35
	High	$\bar{X}$	17.8	15.9	16.7
		SD	4.76	7.09	6.21
		N	52	65	117
	Total	$\bar{X}$	16.8	15.5	
		SD	5.07	6.85	
		N	74	78	
Pro (b)	Low	$\bar{X}$	6.05	4.8	5.6
		SD	4.48	4.23	4.37
		N	22	13	35
	High	$\bar{X}$	8.9	7.8	8.3
		SD	6.95	6.12	6.50
		N	52	65	117
	Total	$\bar{X}$	8.1	7.3	
		SD	6.42	5.93	
		N	74	78	

Table 15 (Cont'd)

Subscale	Level of Congruency	Statistics	ICU	Psych	Total
Super	Low	$\bar{X}$	36.2	32.9	34.9
		SD	12.66	17.63	14.54
		N	22	13	35
	High	$\bar{X}$	37.5	40.3	39.1
		SD	13.22	13.51	43.40
		N	52	65	117
	Total	$\bar{X}$	37.1	39.1	
		SD	12.99	14.42	
		N	74	78	
People (a,b)	Low	$\bar{X}$	41.9	38.2	40.5
		SD	7.65	13.04	9.98
		N	22	13	35
	High	$\bar{X}$	48.4	42.4	45.1
		SD	5.37	11.45	9.70
		N	52	65	117
	Total	$\bar{X}$	46.5	41.7	
		SD	6.77	11.75	
		N	74	78	
JIG (a)	Low	$\bar{X}$	42.9	37.8	41.0
		SD	7.06	13.38	10.02
		N	22	13	35
	High	$\bar{X}$	44.1	41.9	42.9
		SD	7.77	9.61	8.86
		N	52	65	117
	Total	$\bar{X}$	43.8	41.3	
		SD	7.54	10.35	
		N	74	78	

a: Differences in means of Psych and ICU significant at .05 level

b: Differences in means of low and high congruent nurses significant at .05 level.

c: Interaction significant at .05 level.

Figure 10

Relationship of Congruency and Work Environment for Work Scales

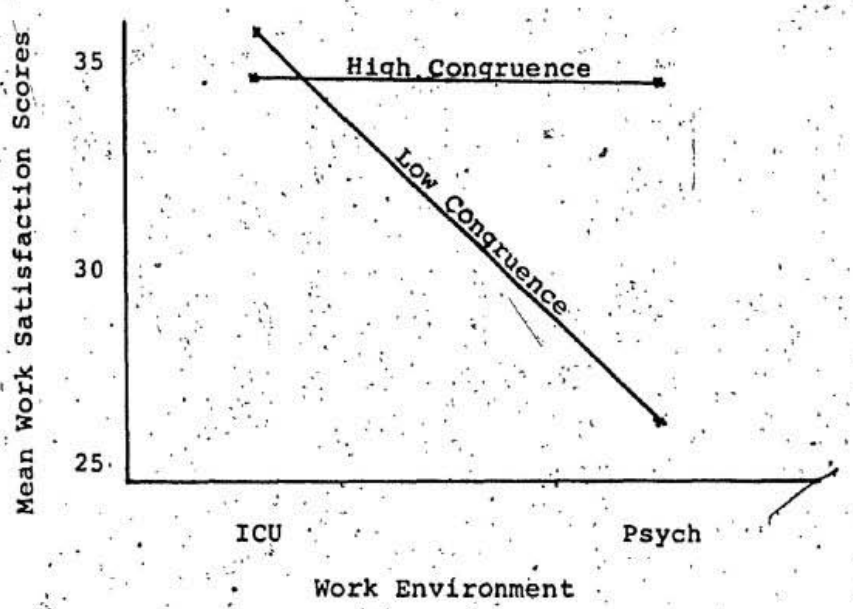


Figure 11

Relationship of Congruency and Work Environment for Pay Scales

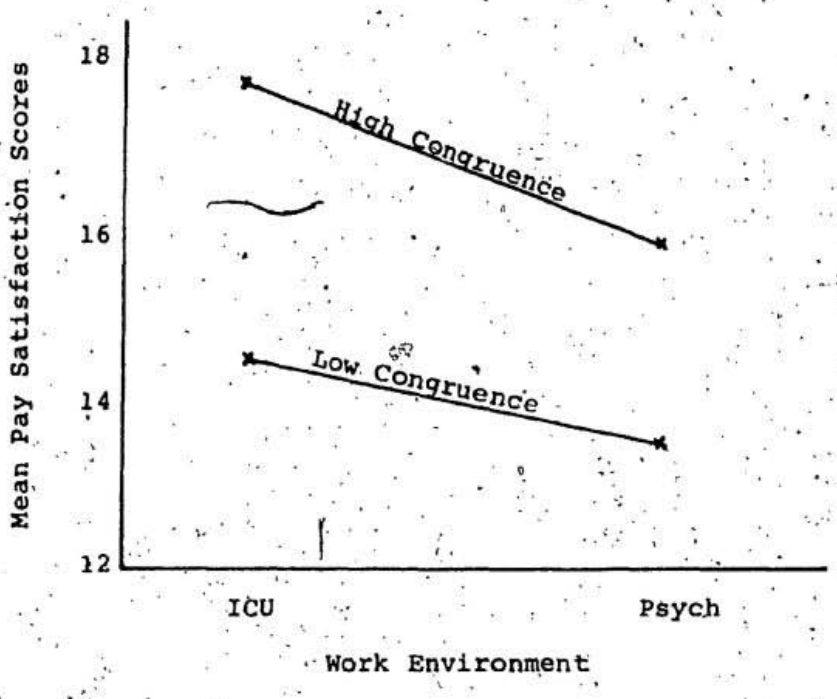
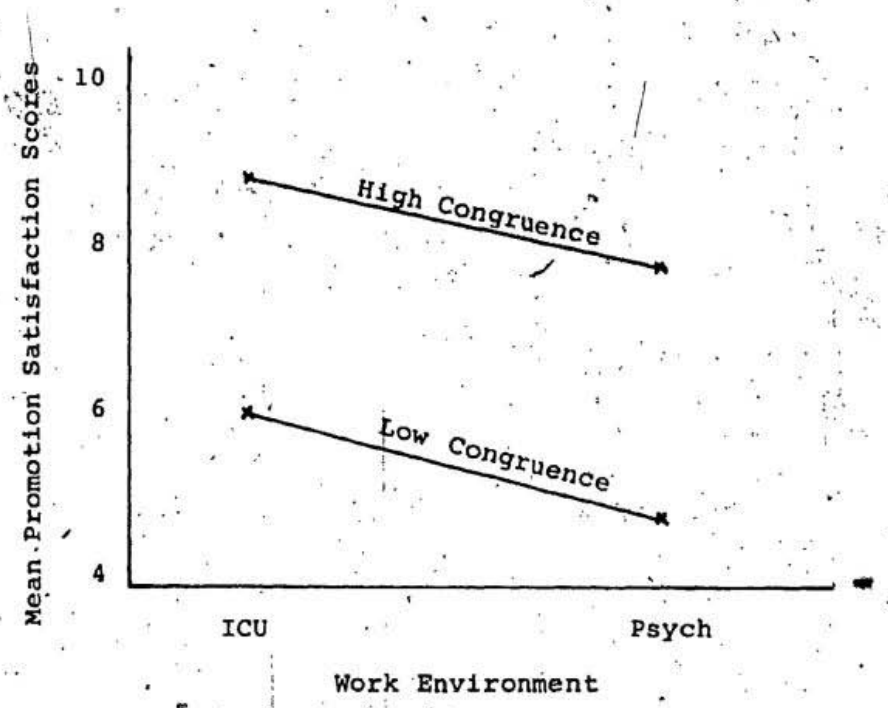


Figure 12

Relationship of Congruency and Work Environment for Promotions Scale



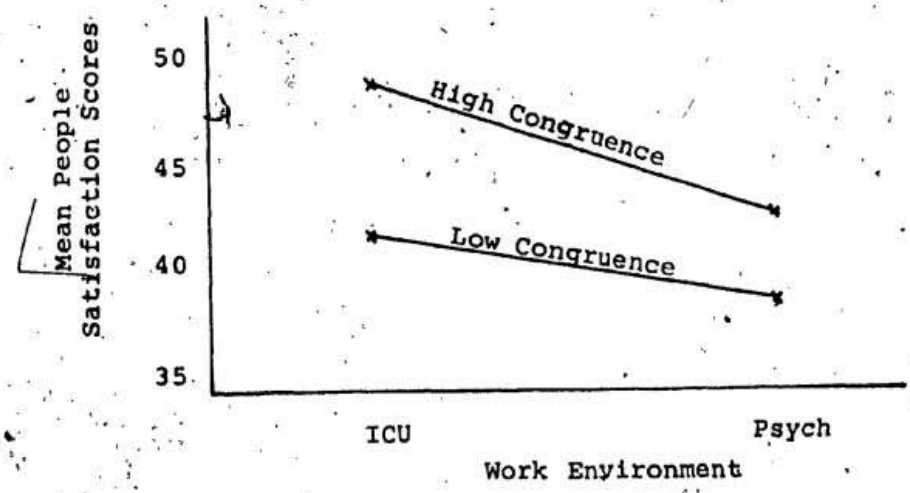
No significant differences were found in any of the variables on the supervision scale.

On the people scale, an F value of 8.210 with 1 degree of freedom demonstrated a significant difference in the means of low and high congruent nurses. High congruent nurses were more satisfied with the people aspects of their work than were the low congruent nurses.

An F value of 6.899 with 1 degree of freedom on the people scale also indicated a significant difference in the means of the ICU and Psychiatric nursing groups. ICU nurses were more satisfied with the people aspects of their work than were the Psychiatric nurses. Figure 13 outlines this data.

Figure 13

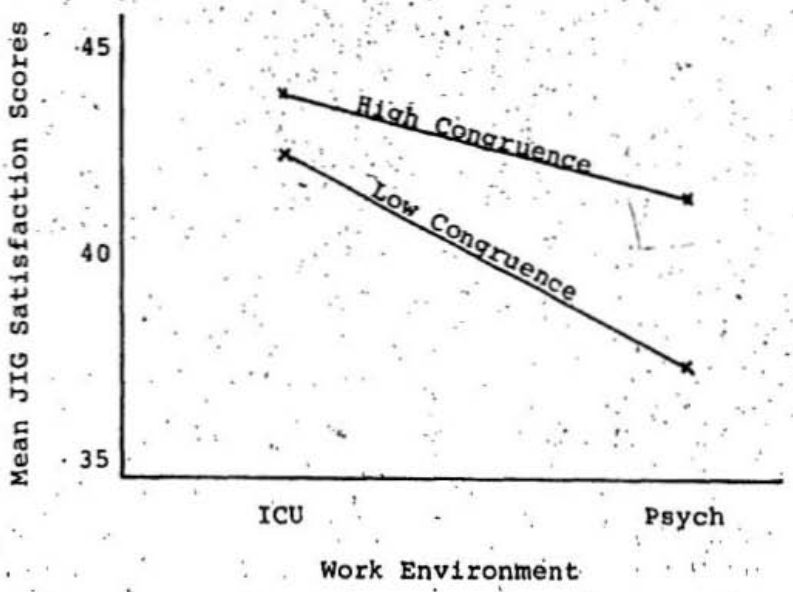
Relationship of Congruency and Work Environment for People Scale



On the job in general scale, an F value of 4.143 with 1 degree of freedom indicated significant differences in the means of the ICU and Psychiatric groups. In general, ICU nurses were more satisfied with the job in general than were Psychiatric nurses. Figure 14 outlines this data.

Figure 14

Relationship of Congruency and Work Environment for Job in General Scale



Summary

This chapter presented an analysis and interpretation of the data obtained in this study. Holland's environmental summary codes were obtained for both the ICU and Psychiatric environments. Significant differences in the composition of these environments were examined in terms of their degree of differentiation and level of consistency. The EAT congruency method was used to examine significant differences between the job satisfaction scores and congruency scores of nurses working in the ICU and Psychiatric environments. Chapter five presents the conclusions of the study and recommendations for future research.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this chapter is to examine the differences between the Intensive Care and Psychiatric nursing environment and to discuss the findings of Holland's (1973) congruency-satisfaction relationship in this nursing sample. The conclusions which were drawn from the results and recommendations for further research are presented.

Conclusion I

The Holland environmental summary code for the ICU environment is social, artistic and investigative (SAI). The Psychiatric environment is defined by social, artistic, enterprising code (SAE) or a social, enterprising and artistic code (SEA).

Both the ICU and Psychiatric environments were found to be primarily social in nature. The basic philosophy of the nursing profession, which states that nursing is an interpersonal process with its focus of care directed towards meeting the needs of the patient, reflects the characteristics of the social environment as outlined by Holland (1973). He describes this environment as one which is dominated by interpersonal rewards, demands and competencies

with a focus on helping and understanding others.

The relationship between the high social codes of nurses in this sample, and the basic philosophy of nursing to the social types described by Holland, becomes evident if the traditional status of the nursing profession is examined.

In his discussion on sex bias issues, Holland (1974) describes women as having a social and artistic orientation and men as having a more mechanical-technical orientation with realistic, investigative and enterprising codes. He describes these differences as the natural result of socialization in our culture and are reflected in the SDS raw scores because such an instrument "simply tally the effects of one's life history and heredity" (Holland, 1974, p. 215).

Nursing today, "with more men entering the field, is 97% female" (Cohen, 1981, p. 105). The random sample for this study contained 94.74% females and 5.26% males. If, as Holland suggests, women are more often classified as social and artistic, the high social codes of nurses in this study supports this assumption.

The traditional stereotyped attitudes toward nursing today reinforce the Holland description of social types. For example, Wilson (1971) states that the expectations of the general public in our culture assume nurses "to be maternal, caring, compassionate and as emotionally involved with patients as mothers are with sick children" (p. 214).

A female student's motivation for choosing nursing as

a career may highlight the link between her female identity and her image of the stereotyped nursing role. Many researchers have found that, traditionally, students enter nursing for nurturant reasons--they want to help people. Meyer (1960) found in her study, for example, that the majority of students entering nursing could be described as mother surrogates. Similar findings by researchers throughout the following two decades, such as Kratz and Martin (1972), Schoenmaker and Radosevech (1976), and Simpson and Simpson (1969), support this belief.

A recent study by Cohen (1981) found that two-thirds of her sample of 734 entering nursing students chose nursing because they thought taking care of people was important. She describes these nurses as

> idealistic, and this idealism is related to their female interpretation of the nursing role. They emphasize those virtues considered female in our society and transfer them into nursing professional traits. (p. 109)

The traditional view of nursing is evident in the Newfoundland culture. A study by House (1972) on the personality characteristics and expressed vocational satisfaction of degree and diploma student nurses in this province, found the primary reason given by both groups for choosing nursing as a career was "a liking for people and a desire to meet and help them" (p. 87).

A strong parental influence was also evident in this group's occupational decision.

> Parents were shown to be important in influencing the career choice of students. High school sources were

> indicated as having a minor influence on student career and nursing school selection. (p. 87).

The problem inherent is that such a caretaker motivation and view of nursing could result in few students emerging "with the conceptual tools to integrate nurturance with the technical and professional aspects of nursing" (Cohen, 1981, p. 113).

Cohen (1981) suggests that modern nurse educators are aware of the sophisticated and often highly technical changes in the nursing role and attempts to "exculcate attitudes that reflect the primary values of knowledge of the field and technical competence" (p. 110).

Studies by Meyer (1960), Davis and Oleson (1964), Oleson and Whittaker (1968) and Cohen (1981) have all shown, however, that attempts to change the nursing student's attitude have resulted in small changes; in some instances only "10% had changed their minds" (Cohen, 1981, p. 110). Cohen (1981) concluded that

> this small change in attitudes and values attest to the strength of the motivation that brings women into nursing and to the importance of the nurturant view of nursing in their self-concept. (p. 111)

Thus, the nursing profession, despite its growth in technology, specialization and complexity, and the efforts of nurse educators to implement a broader attitudinal view of the profession in its nurses, is still traditionally characterized by the nurturant and humanitarian described in Holland's social classification.

Other researchers, using Holland's Environmental

Assessment Technique, have also found support for the prevalence of the social characteristics of nurses. Hecht (1980), for example, in her study of 210 nursing students, found that 62% of these nurses were primarily social types. The most common occurring Holland summary code of this sample was social, investigative, and artistic (SIA); "Codes consisting of SIA and its permulations accounted for 37% of the respondants, and one of these three letters was the high point code in 90% of the cases" (p. 210).

In the Occupations Finder Booklet (Holland, 1973), the professional nurse was categorized as "SIA" (p. 115). Similarly, the Canadian Classification and Dictionary of Occupations (1983) code certain nursing specialties as follows: School Nurse (SAI), Public Health Nurse (SIA), Occupational Health Nurse (SIA), Doctor's Office or Clinic Nurse (SIA), General Duty Nurse (SIA), Private Duty Nurse (SIA), and Psychiatric Nurse (SIA).

Conclusion 2

The Psychiatric nursing environment had a greater degree of differentiation and consistency than the ICU environment.

The significantly higher number of social types in the Psychiatric milieu, produced a well defined environment, characterized by its resemblance to a single type, that is social, and to none of the other personality types. The dominance of the social traits in the psychiatric setting is an expected conclusion if the nature of the environment is examined. The primary focus of work rewards, demands and

competencies in this area are social in nature. It has been classified as "people-oriented" (Molde & Wiens, 1968, p. 45), with a strong emphasis on interpersonal relationships among staff, staff and patients, and patients themselves. Thus, the social nature of the job encourages and reinforces the social characteristics of the nurse in this environment, producing a narrow range of overall behavior--that of the social type.

The ICU environment, however, although also characterized by a social type personality, has a more diverse focus of work. This setting has been classified by Molde and Wiens (1968) as "task-oriented" (p. 45), with a strong emphasis on the technical components of nursing care. Thus, the work rewards, demands and competencies in this environment would be broader in nature as technical components as well as interpersonal relationships must be considered.

The pervasiveness and importance of the technical aspects of the ICU environment would lead one to expect that this environment would be significantly different from the psychiatric environment in terms of Holland's (1973) investigative types. This assumption was not supported in this study. The differences between the two environments were in the levels of the social and artistic components. The reason for these findings is evident if the hexagonal model is examined. The artistic component lies midway between the social and investigative categories on the model. Thus, artistic is as consistent with investigative as it is with social. As discussed earlier, it can be inferred that social

motives govern the initial entry of persons into nursing, particularly in Newfoundland. In addition to this, the literature has shown a strong tendency for females to be social types. Considering these two points, it follows that for Newfoundland, specialty nurses come from a population of highly social, female nurses, and that therefore, the social-artistic type found in the ICU environment is the nearest compromise possible to the Social-Investigative type expected.

The high level of consistency in the Psychiatric environment was evident in the relationship of its summary code types on the hexagonal model. The social, artistic and enterprising types, all have adjacent positions on the model and are all characterized by interpersonal tendencies with deficits in systematic and technical competencies. These common characteristics would thus strengthen the interpersonal rewards and demands of this environment.

The adjacent positions of the social and artistic types of the ICU environment on the hexagonal model also reflected interpersonal competencies. The placement of the investigative type on the model, with its adversion to interpersonal qualities and its preference for systematic and technical activities suggested an environment somewhat more diverse in its rewards and demands.

Conclusion 3

The level of job satisfaction depends upon the combination of the type of nurse and the level of congruency. In the ICU group, no significant differences were found between

congruency and satisfaction. In the Psychiatric group, however, low congruent nurses were found to be significantly less satisfied with their work than were the high congruent nurses.

Contrary to Holland's (1973) theory, high and low congruent ICU nurses were equally satisfied with all aspects of their work. One possible expanation for this finding is the somewhat lower degree of differentiation and consistency of the ICU environment. Despite its high social component, the broader range of demands and rewards in this environment offer more diversity and flexibility in terms of satisfying nurses with other personality types. Theoretically, the fact that it is a high I environment suggests that nurses with I, A, and R characteristics will all find some measures of satisfaction. If the ICU environment was as highly differentiated in terms of I, as the psychiatric environment was in S, then greater differences in low and high congruent nurses might be seen. The high number of social types in the nursing profession, however, tends to bias the selection of nurses for this specialty area in terms of the social component. This means that a logical analysis of the ICU working environment could suggest a different code than that actually found.

The high degree of differentiation and consistency of the Psychiatric environment may account for the low congruent nurses being less satisfied with the work aspects of their job. The primary social characteristics of this milieu offer a limited amount of rewards and demands, applicable primarily to the social personality type. The structure of the work

environment, with its strong emphasis on interpersonal competencies, would be an expected area of job dissatisfaction for nurses not possessing social characteristics.

Conclusion 4

Job satisfaction was found to differ in nursing types, in that ICU nurses, as a group, were more satisfied with the work, people and job in general aspects of their job than were the Psychiatric nurses.

Differences in the group satisfaction with the work aspects of the job may be explained by the differences in the degree of differentiation of the environments with the variety or limited amounts of rewards and demands offered in each setting as discussed in Conclusion 3.

The nature of the work environment suggests another reason why the ICU nurses, as a group, are more satisfied with work and people and job in general than the Psychiatric group. The Psychiatric environment, with its 'people orientation', may cause nurses entering this setting to have greater expectations of the people in that environment and thus their work rewards.

Much emphasis is placed on the nurse's ability to be self-aware, to self-disclose, to be perceptive, empathetic and have a high communication ability. The nurse's role in this area centers around the utilization of these qualities, not only with patients, but also with other staff members working as a team.

In reality, the abstract nature of these characteristics make them difficult to define and measure. Interpretation may differ from staff to staff resulting in interpersonal conflicts on this level which will be reflected on the decision made by the team regarding patient care.

The technical emphasis of the ICU work environment offers more concrete, scientific interventions which are less open for individual interpretation. Nursing roles are more clearly defined and people and work expectations may be more realistic and universal in this group.

The job, in general measurement, is an overall scale which tends to confirm the ratings on the other five scales of the Job Descriptive Index. Because the ICU group had high job satisfaction scores on two of these scales--the work and people scales, these results would be reflected in the job in general measure.

Conclusion 5

Job satisfaction was found to be related to the level of congruence in that high congruent nurses, as a group, were more satisfied with the pay, promotions and people aspects of their job than were low congruent nurses.

This finding suggests that nurses with high congruence are able to find enough satisfaction in the work aspects of their job without concern for the peripheral aspects of pay and promotional opportunities. Nurses with low congruence, however, may not be obtaining the necessary need satisfaction

in the work aspects of their jobs, and so place more emphasis on other job aspects such as pay and promotion.

According to Holland (1973), nurses high in S, or in this study, the high congruent group, are not motivated by economic gain or organizational goals. Similarly, Cohen (1981) states that the caretaking motivation of nurses takes preference over other career choice motivations such as monetary and advancement possibilities. Therefore, the pay and promotional aspects of job satisfaction are not the primary concern of the social-personality type as one would expect to find in nurses with incongruent personality types such as realistic, enterprising, or conventional.

The validity of these findings should be viewd with some caution due to the questionable application of Holland's theory to women in traditional occupations found by some researchers (Osipow, 1973; Prediger & Hanson, 1976). Wolfe and Betz (1981), in their sample of 184 college women, investigated the relationship between traditionality of choice and sex-role identification to the congruence of occupational choice among college women. They found that

> the concurrent validity of Holland's theory is greater for women whose occupational preferences are in non-traditional career fields .... Holland's postulate that people choose occupational environments correspondent with their personality orientations seems to better predict the preferences of women who have resisted the effects of socialization toward traditionally female career fields then of those whose choices continue to correspond with socialization pressures. (p. 53)

If nursing remains a traditionally female profession, and nursing roles continue to be defined by social

characteristics, the inclusion into the profession of other personality types needed to care for patients with specialized needs, such as the technical aspects of the intensive care patient, may be hindered. Environmental tasks, especially those of a technical nature, may be redefined by the social type that populate this environment, thus altering the efficiency of the unit and the quality of scientific patient care.

Recommendations for Further Research

This study has provided direction for further studies which might deal with more specific concerns and better clarify some of the findings in this study.

1. The development of a research program to examine the career pattern of nurses as they select their specialty area of work. Efforts could be directed at examining the general application pool of prospective nursing students, the selected group of nurses, and the nursing education program itself, to determine their influence on the high number of social personality types working in these environments. Identification of a bias towards the social type personality in any of these areas would enable steps to be taken to broaden the personality types who enter and are successful in all specialty areas of nursing.

2. The impact of high school guidance and counselling approaches used with students in assisting them with their

career choice of nursing could also be examined. Emphasis could be placed on widening the view of nursing to include more than just the traditional aspects of the profession.

3. Research could be conducted into the attrition rates of students in nursing schools with a focus on examining which Holland personality types are successful in the program and which personality types drop out, and the reasons associated with this.

4. Investigation of nursing educational programs should be undertaken to determine the attempts being made to help nursing students bridge the gap between the primary nurturing view of nursing and the complexity of other qualities needed for the success in their future professional roles.

5. Further investigation into other nursing specialty areas is required to identify the Holland personality codes of these milieus.

6. Research efforts could be directed into examining the possibility that the technical tasks of the ICU environment are being affected by the social make-up of nurses in this specialty area.

7. An examination of the psychiatric working environment should be undertaken to determine if it reflects a social orientation independent of the nurses who work there.

8. Further examination of the Holland Environmental Code of Nurses will be required as more males enter the profession.

9. Defining congruence by a non-ipsative approach,

such as a geometric difference from the mean raw scores of the personality types in an environment would enable a more complete assessment of the total personality pattern and its relationship to satisfaction.

10. A content analysis of the Self-Directed Search could be undertaken to investigate the possibility of sex bias in the response items.

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APPENDIX A

GENERAL INFORMATION SHEET

Please indicate your responses by placing a check mark ( ) in the appropriate place, or fill in the blank provided to the right of the question.

1) Code Number _____

2) Sex: Male _____ Female _____

3) Age Category: Under 25 _____
26-30 _____
31-35 _____
36-40 _____
41-45 _____
46-50 _____
50+ _____

4) Marital Status: Single _____
Married _____
Divorced/Separated _____
Widowed _____

5) Professional Education:
R.N. Diploma _____
B.N. Degree _____
Master's Degree _____
Post-Graduate Course - ICU _____
Post-Graduate Course - Psychiatry _____
Other (please specify) _____

6) Years of Nursing Experience:
Less than 1 _____
2-5 _____
6-10 _____
11-15 _____
16+ _____

7) Clinical Areas Worked in as an R.N.:

Medicine _____
Surgery _____
Obstetrics _____
Pediatrics _____
Psychiatry _____
I.C.U. _____
O.R. _____
Recovery Room _____
Emergency _____
Public Health _____
School Nursing (teaching) _____
In-Service (teaching) _____
Other (please specify) _____

8) Present Specialty Area of Work:

Intensive Care _____ Type of Intensive Care _____
Psychiatry _____ Type of Psychiatry Unit _____

9. Reason for Selecting Specialty Area:

Self-requested _____
Only Employment Available _____
Other (please specify) _____

10) Years of Working in Specialty Area:

Less than 1 _____
1 _____
2-4 _____
5-7 _____
8-10 _____
11-13 _____
14+ _____

11) Type of Employment: Full-time _____ Part-time _____
Casual _____

12) Number of Hours Worked per Week:

Less than 10 _____
11-20 _____
21-30 _____
31-40 _____
41+ _____

13) Type of Position held: Staff Nurse ____
Team Leader ____
Head Nurse ____
Other (please specify) _____

14) Number of Beds in Hospital of Employment: Under 100 ____
100-150 ____
151-200 ____
201-250 ____
251-300 ____
Over 300 ____

15) Number of Beds in Specialized Unit: Under 5 ____
5-10 ____
11-15 ____
16-20 ____
21-25 ____
26-30 ____
Over 30 ____

16) Number of Female R.N.'s in Specialty Unit: _____

17) Number of Male R.N.'s in Specialty Unit: _____

18) Most Preferred Clinical Area of Work:

Medicine ____
Surgery ____
Obstetrics ____
Pediatrics ____
Psychiatry ____
I.C.U. ____
O.R. ____
Recovery Room ____
Emergency ____
Public Health ____
School of Nursing (teaching) ____
In-Service (teaching) ____
Other (please specify) _____

19) Would you like Feedback on Study Results: Yes ___ No ___

THE JOB DESCRIPTIVE INDEX

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

WORK ON PRESENT JOB

____ Fascinating
____ Routine
____ Satisfying
____ Boring
____ Good
____ Creative
____ Respected
____ Hot
____ Pleasant
____ Useful
____ Tiresome
____ Healthful
____ Challenging
____ On your feet
____ Frustrating
____ Simple
____ Endless
____ Gives sense of accomplishment

Think of the pay you get now. How well does each of the following words describe your present pay? In the blank beside each word, put

____ if it describes your pay
____ if it does NOT describe it
____ if you cannot decide

PRESENT PAY

____ Income adequate for normal expenses
____ Satisfactory profit sharing
____ Barely live on income
____ Bad
____ Income provides luxuries
____ Insecure
____ Less than I deserve
____ Highly paid
____ Underpaid

Think of the opportunities for promotion that you have now. How well does each of the following words describe these? In the blank beside each word put

____ for "Yes" if it describes your opportunities for promotion
____ for "No" if it does NOT describe them
____ if you cannot decide

OPPORTUNITIES FOR PROMOTION

____ Good opportunities for promotion
____ Opportunity somewhat limited
____ Promoted on ability
____ Dead-end job
____ Good chance for promotion
____ Unfair promotion policy
____ Infrequent promotions
____ Regular promotions
____ Fairly good chance for promotion

Think of the kind of supervision that you get on your job. How well does each of the following words describe this supervision? In the blank beside each word below, put

____ if it describes the supervision you get on your job

____ if it does NOT describe it

____ if you cannot decide

.....

SUPERVISION ON PRESENT JOB

____ Asks my advice

____ Hard to please

____ Impolite

____ Praises good work

____ Tactful

____ Influential

____ Up-to-date

____ Doesn't supervise enough

____ Quick tempered

____ Tells me where I stand

____ Annoying

____ Stubborn

____ Knows job well

____ Bad

____ Intelligent

____ Leaves me on my own

____ Around when needed

____ Lazy

Think of the majority of the people that you work with now or the people you meet in connection with your work. How well does each of the following words describe these people? In the blank beside each word below, put

____ if it describes the people you work with

____ if it does NOT describe them

____ if you cannot decide

.....

PEOPLE ON YOUR PRESENT JOB

____ Stimulating

____ Boring

____ Slow

____ Ambitious

____ Stupid

____ Responsible

____ Fast

____ Intelligent

____ Easy to make enemies

____ Talk too much

____ Smart

____ Lazy

____ Unpleasant

____ No privacy

____ Active

____ Narrow interests

____ Loyal

____ Hard to meet

JOB IN GENERAL

Think of your job in general. What is it like most of the time? In the blank beside each word given below write

____ for "Yes" if it describes your job
____ for "NO" if it does NOT describe it
____ if you cannot decide

____ Pleasant
____ Bad
____ Ideal
____ Waste of time
____ Good
____ Undesirable
____ Worthwhile
____ Worse than most
____ Acceptable
____ Like to leave
____ Better than most
____ Disagreeable
____ Makes me content
____ Inadequate
____ Excellent
____ Rotten
____ Enjoyable
____ Poor

■ ■ ACTIVITIES

Blacken under "L" for those activities you would like to do. Blacken under "D" for those things you would dislike doing or would be indifferent to.

R

	L	D
Fix electrical things	☐	☐
Repair cars	☐	☐
Fix mechanical things	☐	☐
Build things with wood	☐	☐
Drive a truck or tractor	☐	☐
Use metalworking or machine tools	☐	☐
Work on a hot rod or motorcycle	☐	☐
Take Shop course	☐	☐
Take Mechanical drawing course	☐	☐
Take Woodworking course	☐	☐
Take Auto mechanics course	☐	☐

Total No. of L's ☐

I

Read scientific books or magazines	☐	☐
Work in a laboratory	☐	☐
Work on a scientific project	☐	☐
Build rocket models	☐	☐
Work with a chemistry set	☐	☐
Read about special subjects on my own	☐	☐
Solve math or chess puzzles	☐	☐
Take Physics course	☐	☐
Take Chemistry course	☐	☐
Take Geometry course	☐	☐
Take Biology course	☐	☐

Total No. of L's ☐

A

Sketch, draw, or paint	☐	☐
Attend plays	☐	☐
Design furniture or buildings	☐	☐
Play in a band, group, or orchestra	☐	☐
Practise a musical instrument	☐	☐
Go to recitals, concerts, or musicals	☐	☐
Read popular fiction	☐	☐
Create portraits or photographs	☐	☐
Read plays	☐	☐
Read or write poetry	☐	☐
Take Art course	☐	☐

Total No. of L's ☐

S

	L	D
Write letters to friends	☐	☐
Attend religious services	☐	☐
Belong to social clubs	☐	☐
Help others with their personal problems	☐	☐
Take care of children	☐	☐
Go to parties	☐	☐
Dance	☐	☐
Read psychology books	☐	☐
Attend meetings and conferences	☐	☐
Go to sports events	☐	☐
Make new friends	☐	☐

Total No. of L's ☐

E

	L	D
Influence others	☐	☐
Sell something	☐	☐
Discuss politics	☐	☐
Operate my own service or business	☐	☐
Attend conferences	☐	☐
Give talks	☐	☐
Serve as an officer of any group	☐	☐
Supervise the work of others	☐	☐
Meet important people	☐	☐
Lead a group in accomplishing some goal	☐	☐
Participate in political campaign	☐	☐

Total No. of L's ☐

C

	L	D
Keep your desk and room neat	☐	☐
Type papers or letters for yourself or for others	☐	☐
Add, subtract, multiply, and divide numbers in business, or bookkeeping	☐	☐
Operate business machines of any kind	☐	☐
Keep detailed records of expenses	☐	☐
Take Typewriting course	☐	☐
Take Business course	☐	☐
Take Bookkeeping course	☐	☐
Take Commercial math course	☐	☐
File letters, reports, records, etc.	☐	☐
Write business letters	☐	☐

Total No. of L's ☐

COMPETENCIES

Blacken under Y for "Yes" for those activities you can do well or competently. Blacken under N for "No" for those activities you have never performed or perform poorly.

R

	Y	N
I have used wood shop power tools such as power saw or lathe or sander	☐	☐
I know how to use a voltmeter	☐	☐
I can adjust a carburetor	☐	☐
I have operated power tools such as a drill press or grinder or sewing machine	☐	☐
I can refinish varnished or stained furniture or woodwork	☐	☐
I can read blueprints	☐	☐
I can make simple electrical repairs	☐	☐
I can repair furniture	☐	☐
I can make mechanical drawings	☐	☐
I can make simple repairs on a TV set	☐	☐
I can make simple plumbing repairs	☐	☐

Total No. of Y's ☐

I

I understand how a vacuum tube works	☐	☐
I can name three foods that are high in protein content	☐	☐
I understand the "half-life" of a radioactive element	☐	☐
I can use logarithmic tables	☐	☐
I can use a slide rule to multiply or divide	☐	☐
I can use a microscope	☐	☐
I can identify three constellations of the stars	☐	☐
I can describe the function of the white blood cells	☐	☐
I can interpret simple chemical formulae	☐	☐
I understand why man-made satellites usually circle the earth	☐	☐
I have participated in a scientific fair or contest	☐	☐

Total No. of Y's ☐

A

I can play a musical instrument	☐	☐
I can participate in two- or four-part choral singing	☐	☐
I can perform as a musical soloist	☐	☐
I can act in a play	☐	☐
I can do interpretive reading	☐	☐
I can do modern interpretive or ballet dancing	☐	☐
I can sketch people so that they can be recognized	☐	☐
I can do a painting or sculpture	☐	☐
I can make pottery	☐	☐
I can design clothing, posters, or furniture	☐	☐
I write stories or poetry well	☐	☐

Total No. of Y's ☐

S

	Y	N
I am good at explaining things to others	☐	☐
I have participated in charity or benefit drives	☐	☐
I cooperate and work well with others	☐	☐
I am competent at entertaining people older than I	☐	☐
I can be a good host (hostess)	☐	☐
I can teach children easily	☐	☐
I can plan entertainment for a party	☐	☐
I am good at helping people who are upset or troubled	☐	☐
I have worked as a volunteer aide in a hospital, clinic, or home	☐	☐
I can plan school or church social affairs	☐	☐
I am a good judge of personality	☐	☐

Total No. of Y's ☐

E

I have been elected to an office in high school or college	☐	☐
I can supervise the work of others	☐	☐
I have unusual energy and enthusiasm	☐	☐
I am good at getting people to do things my way	☐	☐
I am a good salesperson	☐	☐
I have acted as leader for some group in presenting suggestions or complaints to a person in authority	☐	☐
I won an award for work as a salesperson or leader	☐	☐
I have organized a club, group, or gang	☐	☐
I have started my own business or service	☐	☐
I know how to be a successful leader	☐	☐
I am a good debater	☐	☐

Total No. of Y's ☐

C

I can type 40 words a minute	☐	☐
I can operate a duplicating or adding machine	☐	☐
I can take shorthand	☐	☐
I can file correspondence and other papers	☐	☐
I have held an office job	☐	☐
I can use a bookkeeping machine	☐	☐
I can do a lot of paper work in a short time	☐	☐
I can use a calculating machine	☐	☐
I can use simple data processing equipment such as a keypunch	☐	☐
I can post credits and debits	☐	☐
I can keep accurate records of payments or sales	☐	☐

Total No. of Y's ☐

OCCUPATIONS

This is an inventory of your feelings and attitudes about many kinds of work. Show the occupations that *interest* or *appeal* to you by blackening under Y for "Yes." Show the occupations that you *dislike* or find *uninteresting* by blackening under N for "No."

	Y	N
Airplane Mechanic	☐	☐
Fish and Wildlife Specialist	☐	☐
Auto Mechanic	☐	☐
Carpenter	☐	☐
Power Shovel Operator	☐	☐
Surveyor	☐	☐
Construction Inspector	☐	☐
Radio Operator	☐	☐
Filling Station Worker	☐	☐
Tree Surgeon	☐	☐
Long Distance Bus Driver	☐	☐
Locomotive Engineer	☐	☐
Machinist	☐	☐
Electrician	☐	☐
Total **R** Y's	☐	

	Y	N
Meteorologist	☐	☐
Biologist	☐	☐
Astronomer	☐	☐
Medical Laboratory Technician	☐	☐
Anthropologist	☐	☐
Zoologist	☐	☐
Chemist	☐	☐
Independent Research Scientist	☐	☐
Writer of Scientific Articles	☐	☐
Editor of a Scientific Journal	☐	☐
Geologist	☐	☐
Botanist	☐	☐
Scientific Research Worker	☐	☐
Physicist	☐	☐
Total **I** Y's	☐	

	Y	N
Poet	☐	☐
Symphony Conductor	☐	☐
Musician	☐	☐
Author	☐	☐
Commercial Artist	☐	☐
Free-Lance Writer	☐	☐
Musical Arranger	☐	☐
Journalist	☐	☐
Portrait Artist	☐	☐
Concert Singer	☐	☐
Composer	☐	☐
Sculptor/Sculptress	☐	☐
Playwright	☐	☐
Cartoonist	☐	☐
Total **A** Y's	☐	

	Y	N
Sociologist	☐	☐
High School Teacher	☐	☐
Juvenile Delinquency Expert	☐	☐
Speech Therapist	☐	☐
Marriage Counsellor	☐	☐
School Principal	☐	☐
Playground Director	☐	☐
Clinical Psychologist	☐	☐
Social Science Teacher	☐	☐
Director of Welfare Agency	☐	☐
Youth Camp Director	☐	☐
Personal Counsellor	☐	☐
Psychiatric Case Worker	☐	☐
Vocational Counsellor	☐	☐
Total **S** Y's	☐	

	Y	N
Speculator	☐	☐
Buyer	☐	☐
Advertising Executive	☐	☐
Manufacturer's Representative	☐	☐
Television Producer	☐	☐
Hotel Manager	☐	☐
Business Executive	☐	☐
Restaurant Manager	☐	☐
Master of Ceremonies	☐	☐
Salesperson	☐	☐
Real Estate Salesperson	☐	☐
Publicity Director	☐	☐
Sports Promoter	☐	☐
Sales Manager	☐	☐
Total **E** Y's	☐	

	Y	N
Bookkeeper	☐	☐
Business Teacher	☐	☐
Budget Reviewer	☐	☐
Certified Public Accountant	☐	☐
Credit Investigator	☐	☐
Court Stenographer	☐	☐
Bank Teller	☐	☐
Tax Expert	☐	☐
Inventory Controller	☐	☐
IBM Equipment Operator	☐	☐
Financial Analyst	☐	☐
Cost Estimator	☐	☐
Payroll Clerk	☐	☐
Bank Examiner	☐	☐
Total **C** Y's	☐	

SELF-ESTIMATES

1. Rate yourself on each of the following traits as *you really think you are when compared with other persons your own age.* Give the most accurate estimate of *how you see yourself.* Circle the appropriate number and *avoid rating yourself the same in each ability.*

	Mechanical Ability	Scientific Ability	Artistic Ability	Teaching Ability	Sales Ability	Clerical Ability
High	7	7	7	7	7	7
	6	6	6	6	6	6
	5	5	5	5	5	5
Average	4	4	4	4	4	4
	3	3	3	3	3	3
	2	2	2	2	2	2
Low	1	1	1	1	1	1
	R	I	A	S	E	C

	Manual Skills	Math Ability	Musical Ability	Friend-liness	Managerial Skills	Office Skills
High	7	7	7	7	7	7
	6	6	6	6	6	6
	5	5	5	5	5	5
Average	4	4	4	4	4	4
	3	3	3	3	3	3
	2	2	2	2	2	2
Low	1	1	1	1	1	1
	R	I	A	S	E	C

APPENDIX B

MEMORIAL UNIVERSITY OF NEWFOUNDLAND
St. John's, Newfoundland, Canada A1B 3X8

Department of Educational Psychology
Faculty of Education

Telex: 016-4101
Tel: (709) 737-8611

June 13, 1984

Dear

The purpose of this letter, and enclosed questionnaire, is to request your assistance in helping me collect the necessary information to complete my thesis for the Master's of Educational Psychology at Memorial University.

My thesis will attempt to identify the personality characteristics of registered nurses working in the intensive care and psychiatric units of nursing. I am using the framework of John Holland, a career theorist, who believes that most people who enter an occupational field, i.e., nursing, do so because of their interests and personality characteristics. Holland also assumes that people who are working in occupations that match their personality characteristics experience more job satisfaction than individuals who are not in a matching occupation.

In his studies, Holland has identified a personality pattern that is specific to nurses in general. No research has been found, however, which attempts to identify the characteristics of nurses who choose to work in specialized areas, such as intensive care and psychiatry. Although there are studies available which support Holland's person-occupation match in relation to job satisfaction in other professions, none have investigated the nursing profession in this manner. My experiences as a nurse have lead me to suspect that there are personality differences in nurses who select different specialized areas of work. Therefore, I feel this is an interesting, as well as pertinent study.

You have been randomly selected from all the nurses presently working in these two specialized units in the province of Newfoundland and Labrador. I realize you are a very busy person, with many work and family demands. Therefore, the 30 minutes of your time necessary to complete the questionnaire will be deeply appreciated.

All information received will be held in the strictest confidence. This will be accomplished by assigning a number code to correspond to your name, hospital, and specialized area of work. All data will be subsequently handled by these code numbers with the master list accessible only to the researchers. Neither your name nor hospital will appear in the report.

.../2

Because time is an important factor in my thesis endeavors, it would be sincerely appreciated if you would complete the questionnaire and return it to me as soon as possible. A stamped, self-addressed envelope is enclosed for your convenience.

Each specialized unit participating in the study will receive a summary of the final report. If you would like more specific information on your results, please indicate and I will attempt to fulfill this request.

Thank you so very much for assisting me in my project.

Sincerely,

(Mrs.) Barbara Thorburn,
R.N., B.Sc.N.

Norman W. Garlie, Ph.D.
Associate Professor and
Thesis Supervisor

BT/NWG/bm

APPENDIX C

Bowling Green State University

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Bowling Green, Ohio 43403
(419) 372-2301
Cable BGSUOH

Summary Report on the Job-in-General Scale of the JDI

The Job-in-General (JIG) is an 18-item subscale developed to supplement the Job Descriptive Index (JDI). The response format is the same as the JDI and can be easily included in the administration of the JDI.

The JIG was developed on several different and diverse samples. A final report describing the steps of development and the psychometric properties of the JIG is currently being prepared. The initial analyses of the JIG indicate both high internal consistency reliability and good convergent validity. The Coefficient Alpha reliability was .93 for a sample of 670 employees in clerical, technical, engineering, and administration positions, and .96 for a sample of 132 county employees. The JIG and three different measures of overall job satisfaction were administered to the sample of county employees to evaluate the convergent validity of the JIG. The intercorrelation matrix for the JIG, the Brayfield-Rothe Index of Job Satisfaction (Brayfield & Rothe, 1957), a one-item faces scale (Kunin, 1959), and a one-item overall satisfaction question is presented below.