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ADAPTATION OF ELDERLY TO INSTITUTIONAL RELOCATION:

A CONCEPTUAL MODEL

by

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DISSERTATION

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Abstract

ADAPTATION OF ELDERLY TO INSTITUTIONAL RELOCATION:

A CONCEPTUAL MODEL

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A conceptual model was developed and tested for investigating the relocation of older adults from acute care to long-term care facilities. The structural components of the conceptual model were based on systems theory and consisted of personal, interpersonal, social and environmental domains. The process components of the model were synthesized from stress and adaptation theory and utilized the concepts of stress impact, resource-deficit potential and adjustment level. Instruments compatible with the model were constructed, validated and used for assessing factors facilitative of adjustment of the older adults to this relocation transition. The five research questions addressed the problems of: formulation of a conceptual model which would be inclusive of relevant factors affecting older adults in the relocation transition; instrument construction and validation for researching the relocation problem; identification of factors predictive of adjustment; determination of the relationship of predictive factors to coping types; and identification of points of transitional change within the four month relocation period under study.

The sample was composed of 90 subjects over 60 years of age who had been institutionalized in the long-term care facility less than four months. A modified cross-sectional design based on length of time in the institution was used for proportional selection of subjects, and for

determining points of transitional change in the relocation adjustment phase. The subjects had varying degrees of physical disability but were free of mental impairment.

Six questionnaires were administered to the subjects in multiple interview sessions based on the tolerance level of the individual. These questionnaires centered around stresses experienced and resources perceived by the subject, coping action and emotional patterns, demographic data and various correlates of adjustment. Following each interview, a behavioral rating of physical and psychosocial functioning was completed on each subject along with a staff estimate of the subject's adjustment level in the institution.

Rao's canonical factoring procedure was used to derive fifteen composite variables from the stress, resource, deficit and adjustment indicators. Reliability coefficients omega and validity coefficients rho were obtained for these composites using the canonical-factor-regression method. Five coping types emerged from cluster analysis of subjects on specific coping strategies: actions and emotions. The fifteen composites and five coping types formed the newly emerged conceptual framework which supported some areas of the initial conceptualization and altered others. In order to identify factors predictive of adjustment, the data were analyzed by a stepwise multiple regression procedure with the morale-adjustment composite forming the dependent variable and the resource, deficit, and stress composites forming the independent variables along with the coping types.

The results indicated that five composites were most predictive of adjustment: high environmental control and perceived well-being, low stress from personnel, low physical dependency, and low anxiety-

depression. Two coping types which had indirect effects on adjustment were the self-oriented, discontent subjects and the information seekers, worrisome type. Profiles of standardized group mean responses on the variables predictive of adjustment revealed two points of transitional changes during the four months following the relocation: between the first and second month, and between the second and third month. Findings suggest the need for further validation of the instruments and model. Implications are drawn for policy making and service as well as for future research.

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CONTENTS

Title Page	i
Abstract	ii
Acknowledgements	v
Contents	vii
Illustrations	x
Tables	xi
I. Introduction	1
Purposes of Study	4
Research Questions	5
Background of the Study	5
Relocation: Relevant Research	6
Conceptual Model: Relevant Theory	13
Underlying Assumptions	14
Structural Components	15
Process Components	19
Cross-classification of Components	23
II. Methodology	26
Subjects	26
Instruments	28
Demographic Data Profile	29
Semi-Structured Interview	29
Stress Events Questionnaire	30
Major Resources Index	31
Geriatric Coping Schedule	32
Adjustment Ladder Scales	34

Staff-Rated Adjustment Scale	34
Modified Physical and Mental Impairment-of-Function Evaluation	35
Procedure	36
III. Results	39
Descriptive Analyses	39
Data Reduction Measures	41
Deficit Composites	43
Resource Composites	45
Stress Composites	56
Adjustment Composites	62
Coping Types	62
Factors Predictive of Adjustment	72
Relationship of Predictive Adjustment Factors and Coping Types	76
Transitional Changes and Time in Institution	78
Age and Sex Differences: Coping Strategies and Composite Variables	79
Correlations Between Open-ended and Structured Responses	82
IV. Discussion	
Findings Related to Research Questions	84
The Assessment Instruments	88
Findings Relevant to Other Research	89
Instrument Comparison	92
Relevancy of Research to Nursing	93
Implications of Findings for Policy Making and Service	96
Further Research Implications	100

References 104

Appendix A: Operational Definitions of Cross-Classified
 Components 113

Appendix B: Instruments 119

Appendix C: Coding Categories 136

Appendix D: Consent Forms 140

Appendix E: Canonical-Factor-Regression Method Formulas . . . 143

ILLUSTRATIONS

Figures

1. Structure Components of the Person-Environment Model	17
2. Process Components of the Person-Environment Model	22
3. Cross-Classification Cube of Structure and Process Components with Originating Points	25
4. Revised Structure Components of the Person-Environment Model	71
5. Predictive Relationships among Coping Types and Dimension Composites	77
6. Profiles of Standardized Group Mean Responses for Subjects Institutionalized Varying Lengths of Time on Variables Predictive of Adjustment	78a

TABLES

1. Hostile-Paranoid Deficit Composite	44
2. Physical Dependency Deficit Composite	46
3. Anxious-Depressed Deficit Composite	47
4. Behavioral Deterioration Deficit Composite	48
5. Perceived Well-Being Resource Composite	50
6. Self Satisfaction Resource Composite	51
7. SES Resource Composite	53
8. Environmental-Control Resource Composite.	54
9. Familial Resource Composite	55
10. Nursing Personnel Stress Composite	57
11. Family Conflict Stress Composite	58
12. Dependency-Control Stress Composite	60
13. Environmental Change Stress Composite	61
14. Activity Change Stress Composite	63
15. Morale-Adjustment Composite	64
16. Variables Constituting the Coping Strategy Clusters	66
17. Age (by decade), Sex, and Coping Cluster Typology Membership	68
18. Significant Variable Definers of the Five Coping Types . . .	69
19. Stepwise Multiple Regression Analysis of the Criterion	
Variable Morale-Adjustment	73
20. Standardized Group Means of Predictive Adjustment Factors	
by Length of Time in Institution	75
21. Frequency Group Means of Selected Actions and Emotions by	
Age and Sex	81

I

INTRODUCTION

"...we have made old age in this country a wasteland...the nowhere in between this life and the great beyond."

(Moss, 1974)

As developmental transitions decrease in later life, situational transitions increase through social and physical crises, thus facilitating the passage into a wasteland of old age. These situational transitions, idiosyncratic in nature, often occur unexpectedly or off-time, not allowing for individuals to adapt through anticipation of and preparation for the event (Lowenthal, Thurnher & Chiriboga, 1975; Neugarten, 1969). One such situational transition is the involuntary relocation of the older person from an acute care hospital to a long-term care facility. The latter constitutes "the most troubled and troublesome component of our entire health care system", according to the report of the U.S. Senate Committee on Long-Term Care (Moss, 1974). Yet, today in the United States, long-term care beds exceed in number those in general or acute hospitals, a fact reflected in medicaid expenditures for the elderly.

The entire long-term care industry has mushroomed in the past decade. Facilities have increased by 140 percent and clients by 210 percent, according to governmental statistics (Moss, 1974). In those communities where adequate home health care and supportive services are still minimal, this need continues to exist. A sampling of facilities

in the metropolitan area within which this study was conducted disclosed that approximately 90 percent of long-term care admissions are from acute care facilities. In turn, those 90 percent represent about 10 percent of total hospital discharges of older clients. Approximately one half of those clients admitted to the long-term care facility eventually return to their homes within the community. As more viable health care alternatives are developed, a decrease is anticipated in the length of residency within long-term care institutions.

According to Kastenbaum and Candy (1973), one out of every five older persons will spend some time in such facilities during his life time. Furthermore, the fastest growing population group is the over 75 years of age group. Unless the needs of these elderly for home health care and supportive services can be met, institutionalization is inevitable. Tobin and Lieberman (1976) maintain that the very old will always require long-term care regardless of the efforts made to prevent premature institutionalization. The children may themselves be elderly and too debilitated or too burdened with other responsibilities to provide this care to their parents. Also, with the present governmental insurance funding policies and subsequent health care classification systems, older clients are increasingly faced with the prospect of long-term institutionalization following even a brief sojourn in an acute care hospital. The provision of quality long-term care then becomes the challenge for the health delivery system.

Nursing is a pivotal component in the long-term care controversy, but presently lacks the scientific base for its practice and role in the relocation transition. The need for a sound scientific basis as indispensable in assisting clients in such environmental adaptations has been

documented within the nursing literature. In order to begin establishing this scientific base, nursing as a new discipline, has tended to borrow theories and constructs from other fields and synthesized them into conceptual models for use in nursing.

Johnson (1968) and Augur (1976) have espoused a behavioral systems model in which the environment impinges upon man through one or more of his systems, and the effects of the interaction are thus manifested in system behavior output. Neuman (1974) also uses systems theory within a more psychiatrically-oriented approach, including prevention levels and man-environment resources as important components.

Highley (1967) uses elements of both behavioral systems theory and adaptation theory in her conceptual model. Adaptation theory and symbolic interaction theory are two other theoretical bases popular to nursing. Proponents of the former include Redman (1974) who relates adaptation with man-environment interactions and environmental management, and Murphy (1971) who views adaptation as a unifying theory for nursing with a dynamic component which takes into account man's relationship to his environment. Meleis (1975) prefers to view nursing in the symbolic interactionist framework with role manipulation as a major focus.

Many of these models have been constructed primarily as curriculum models and as such have influenced the practice of students. Other models have been developed specifically for practice. However, there is one major drawback. Although many of these models have assumptions and theoretical formulations relating their concepts, most of them have not been subjected either partially or en toto to empirical testing.

Generally, theoretical models for research tend to be more limited in scope than the conceptual models, which make them amenable to empirical validation (e.g., Hallburg, 1969). Although assessment tools are frequently constructed for purposes of clearer understanding and interpretation of the conceptual framework in the practice setting, only infrequently have they been grounded in research. Hence, there continues to exist a sparcity of empirically validated frameworks and instruments despite a recent proliferation of such models.

Purposes of Study

In view of the identified research needs, one of the purposes of this exploratory study was to develop and empirically validate a conceptual model to be used by both researchers and health care practitioners (primarily nurses) in assessing potential and actual problem areas which plague clients who must be or have been transferred from the acute care to the long-term care facility. The components of the model would be grounded in actual verbalizations of the subjects (older clients) and would be intended as foci for interventions and policy decisions. A second purpose of this research was to delineate valid and reliable items and instruments compatible with the empirical model for assessing and analyzing those factors which are facilitative or non-facilitative of the adjustment of the older adult to the long-term care facility. To be utilized by other nurses and/or other health professionals, these instruments must have relevancy and parsimony.

Research Questions

Five research questions thus emerge for this exploratory study:

- 1) Can a specific empirical model account for the range of phenomena found in the adaptation of older adults to the stresses inherent in the long-term institutional transitional adjustment from the acute care hospital?
- 2) Which assessment items will contribute to the reliability, validity, and parsimony of instruments compatible with the empirical model?
- 3) What factors or combination of factors are predictive of institutional adjustment?
- 4) What is the relationship of the predictive adjustment factors and the coping types?
- 5) At what point in time are transitional changes most discernible among older adults relocated to the long-term care facility?

Background of the Study

The review of literature relevant to the proposed research is divided into two sections. In the first section, research relevant to the relocation transition problem is reviewed. Only one of the relocation studies actually investigated to even a limited extent the particular transition under study here -- from acute care to long-term care facility. However, a review of the other relocation transitions (community to institution and interinstitution) discloses variables of import which were included within the conceptual framework of the present

research. The second part of the literature review includes theoretical support for the conceptual model. The structure and process components of the model are delineated and clarified in relation to this study.

Relocation: Relevant Research

The significance of the institutional relocation shock and the need to determine, through research, ways to minimize it have been well documented within the literature. Foremost among researchers in this area is Lieberman, who both individually and with colleagues has been researching this problem for over 15 years. His early research (Lieberman, 1961) concentrated on the mortality hypothesis. The study involved a post hoc analysis of 640 subjects who had relocated over an eleven-year period from the community to a Jewish Home for the Aged. His major finding was a two and one-half percent increase in deaths within the first year with a significantly higher proportion occurring among the younger half of the population. Since this finding did not correlate with the physical status of the subjects, he concluded that future investigations should include the psychological aspects of death.

Several studies by Lieberman and associates have focused on the psychological effects of relocation, delineating negative and positive traits affecting institutional adaptation and mortality. In 1968, Lieberman, Prock and Tobin discussed a study of three sample groups -- 24 mentally and physically non-deteriorated subjects, institutionalized one to three years; 25 subjects awaiting institutionalization; and 40 community residents comprising the criterion group. Findings revealed that the waiting period was clearly destructive for that group as

measured by lower future time perspective, increased psychological distance from others, and increased feelings of despair. These traits had previously been attributed to the effects of institutionalization itself. In the institutionalized group, negative traits included disorientation to time and space, increased bodily preoccupation and lowered emotional responsivity, all suggesting increased environmental insulation. However, herein lies a criticism to this study. The institutionalized subjects were selected on the basis of their mental alertness and physical health, yet disoriented behavior was evidenced in the findings. In a cross-sectional study of this nature, no determination can be made of an environmentally induced etiology.

Forty-five mentally alert ambulatory women who were transferred from one home for the aged to another less desirable one were assessed along dimensions of affective capacity, affect, and morbidity-mortality criteria (Miller & Lieberman, 1965). The most powerful predictor of the outcome was the degree of hope versus despair. The latter was characterized by a negative evaluation of the past life, feeling life is meaningless, and a future, nonexistent. These subjects were followed until 18 weeks after the move, at which point 23 of the 45 evidenced negative change.

The effect of relocation has been found to be influenced not only by personal but also by environmental characteristics. Turner, Tobin and Lieberman (1972) have thus identified two approaches to the study of relocation. The first approach (that of the preceding studies) focuses on psychological qualities and is based on the assumption that deficits in adaptive potential will be predictive of increased vulner-

ability in any relocation experience, which supports the mortality hypothesis. The second approach relates the psychological qualities of the individual to the situational demands in the new location. The assumption underlying this approach is that with increased congruence between the person and the environment, there will be a decrease in stress due to relocation.

The second approach is evident in a longitudinal study of 85 subjects (Turner, Tobin & Lieberman, 1972; Lieberman, 1974; and Tobin & Lieberman, 1976), who were followed through three phases of institutional adjustment, while a fourth phase, the pre-decision period in the community was also discussed. Following the pre-decision period was the anticipatory period awaiting institutionalization at which point the subjects actually entered the sample. The length of this period varied, dependent upon available space within the selected sectarian facilities. For the initial adjustment period, subjects were evaluated within a two month time frame. Subjects in the final phase, the adaptation period, were assessed at the end of one year. Despite an initial disequilibrium, the investigators found with time a remarkable continuity in self definition. Morbidity and mortality were associated with passivity, hopelessness and denial of the impending events. A successful institutional adaptation was statistically associated with high activity, aggressiveness, environmental intrusiveness, and a narcissistic body image. For those who survived, a remarkable stability in functioning was apparent as only minimal changes were shown. Two critical variables limit the generalizability of this study: the voluntariness of the relocation decision and the sectarian nature of the institutions.

In summarizing their studies, Lieberman and associates delineate their critical factors for lessening the relocation shock and making an environment facilitative: autonomy for the relocatee as evidenced by the staff allowance of individuation; a feeling of personalization derived from staff expression of interpersonal warmth; and integration of the relocatee into community activities, through staff provision of opportunities for social engagement. Two critical intrapersonal variables affecting adjustment are level of cognitive functioning and degree of physical healthiness.

The most complete longitudinal study of involuntary institutional relocation to date is that of Marlowe (1972) who followed 429 mentally impaired patients in their transition from a large state hospital to smaller community facilities. She found that relocation was extremely stress-inducing for some patients. Persons without adequate adaptive or coping resources may "give up" with decrease in functional performance, withdraw from interaction with others, or manifest increased psychiatric symptomatology. Her findings revealed that environmental variables are far more crucial in the prediction of outcomes with relocation than the adaptive capacity. Marlowe found critical environmental variables to be the independence of the residents, the facilitation of resident relationships and the nature of the social interactions which the resident has with other residents, as well as the physical attractiveness of the units. Other critical variables included opportunities for trying out new skills along with independence in decision-making and use of time and space. Additional crucial variables were a lack of tolerance for deviance on the part of peers and staff and expectations of normal behavior in a facility or institution.

The importance of the environment was demonstrated in the way in which it responded to and fulfilled the basic needs of the residents. Many of these findings parallel those of Lieberman (1974), especially his study with similar mentally impaired samples, although he also generalized his findings to cognitively normal samples.

Other investigators of relocation have found results similar to those detailed in the Lieberman and Marlowe studies. Aldrich and Mendkoff (1963) studied the relocation of 182 patients for two years after they had learned of the impending move. The highest death rate occurred within the first three months after relocation. Depressed, regressed and/or denying patients were the most vulnerable. In a similar study of 82 male veterans, inter-institutionally transferred, Ogren and Linn (1971) found an important variable for survival to be self dependence for the client. Also of importance in facilitating a good adjustment following relocation was an understanding by the staff of the needs of individual clients.

Markus et al (1972) investigated the inter-institutional relocation of 373 subjects with varying degrees of physical and mental impairment. Since relocation was conceptualized in two stages -- deprivation of former environmental cues and supports, and coping with new environmental stimuli -- perceptual field dependence, mental status and physical status were the major variables. When the investigators were unable to replicate their findings, they raised the the question of a threshold beyond which changes become more stressful. They also questioned that stress may be institutionally induced in different relocations. A criticism of this study is the use of age-specific field-dependent measures for children rather than for adults, without any mention of

pretesting these on older adults. Also, the authors themselves admit that the unavailability of data on 88 senile subjects skewed findings. This influenced the data computations according to the authors.

Other variables found to be of import in relocation stress and mortality include the degree of life style (environmental) change experienced by the client, whether the move was voluntary or involuntary, and the degree and type of planning and preparation. Bourestom and Tars (1974) reported a study of 98 patients who had been hospitalized over three years with cardiovascular, neurological or musculoskeletal pathology. The subjects were divided into three groups on the basis of the degree of environmental and interpersonal changes they experienced in the relocation — radical change, moderate change, and no change. These changes were measured by both self-reported changes in activities and interpersonal relationships and by time-sampled behavioral observations. The findings of a strikingly higher mortality rate for the radical change group, both in the three months preceding and the one year following relocation, supported previous findings that the degree of environmental change is a potent factor. The researchers suggest that planning and preparation can reduce fatalities and facilitate adjustment.

In a study of mortality rates among 96 male relocated extended-care patients, findings of Gutman and Herbert (1976) concurred with the findings of Bourestom and Tars that the key factors in mortality risk were the degree of environmental change and the actual transfer procedure, e.g., preparation and planning. These investigators documented staff roles in the prevention and alleviation of the relocation stress, as well as differences in physical facilities, staffing patterns and

patient grouping patterns. However, the issue of preparation and planning is frequently unfeasible for the population who are relocated from acute to long-term care facilities. Often, sufficient time is not available for such planning as the client may not be notified until just a few hours in advance of the move.

Most of these cited studies have investigated the relocation of the long-term patient from one institution to another. Few have followed the acutely ill patient into the extended care facility. One such study is that of Linn and Gurel (1969) in which they followed 238 men both pre-transfer and one week post-transfer. When they found no significant disability or attitudinal changes within the one week period, they concluded that the negative reaction frequently associated with the critical first three months must be an insidious process rather than an abrupt one, and occurs sometime after the first week post-transfer. One major confounding effect was not controlled for in this study, that of medication use which increased significantly ($p < .05$) in the post-relocation period. The nature of the medication is not disclosed, which gives no indication of the potential effect of same on both the disability ratings and the assessed attitudes of the clients toward their nursing home placement. Based on these facts, the conclusions of the researchers that the negative reactions are an insidious process would be questionable until further tested, controlling for possible masking effects of medications.

In a review of the literature on relocation and institutionalization, Kasl (1972) concludes that the most convincing evidence of the adverse effects of relocation has come from studies of interinstitutional transfers. He states that longitudinal studies are needed

which clarify the dynamics of several stages of institutionalization. Four stages he proposes for study are: the decision making process; the stage of anticipation of change; the short-term adjustment stage; and the long-term adaptation stage. Similarly, Munnichs and Bigot (1973) feel that research is needed on the effect of transfers on the adaptive capacity of the individual in his adaptation to both illness and environmental change. They suggest a study of the client from pre-admission to long-term care, considering both the personal meaning of the impact for the individual and the environmental demands for new patterns of behavior as well as the effect of the transfer upon the client. From a very comprehensive review of the literature, Lawton (in press) concludes that relocation is here to stay, so continued research will be necessary to determine ways for improvement of existing institutions and for minimization of the relocation shock for older adults.

The time frame investigated in the present study is the early adaptation or transitional phase (one through four months post-transfer) from acute hospitalization to long-term institutionalization for both men and women. All of the moves were involuntary, and the anticipatory period was too brief for adequate preparation, a reality which is frequently found in the acute to long-term institutional phases of the health delivery system.

Conceptual Model: Relevant Theory

The relocation transition from acute care to long-term care institutionalization was investigated in this research within the parameters of a conceptual model for nursing. Both the initial formulation of the

model and its later modifications were part of the research endeavor. Four phases can be identified in the framework construction: clarification of assumptions; development of structural components; development of process components; and cross-classification of structure and process components, with operationalization of these elements.

Underlying assumptions. Initially, two assumptions were made about nursing and its clientele. One assumption posits that man is an open system in a changing universe. As such, the client (man) continually adapts to internal and external environmental press to maintain balance and order. Due to the interactive nature of this man-environment exchange, the impact of any event of import or stress which occurs within either the person or the environment will reverberate throughout all involved systems. (The focus of this study, the relocation transition, is believed to be one such event of import.) Likewise, strengths (resources) and weaknesses (deficits) occurring in either the person or the environment influence the individual's competence for adaptation. The support of this assumption is found in Helson (1964) who posits that life consists of internal and external stresses with the responses determined by the prevailing adaptation level of the individual.

A second assumption is that nursing encompasses holistic man and, therefore, is concerned not only with physical aspects of the client, but also with the client's psychosocial and environmental relationships. This holistic approach in the sphere of nursing is well documented in nursing literature. Rogers (1970), King (1971), Orem (1971), Bryne and Thompson (1972) and Johnson (1974) all perceive the role of nursing as extending beyond the physical realm into the psychological,

social, and environmental realms. These two basic assumptions underly the structural and process components of the conceptual model.

Structural components. Since the person is assumed to be an open system in interaction with the environment, the basic theory underlying the person-environment conceptualization is systems theory, which encompasses ecology theory. The selection of systems theory for nursing was deemed appropriate since a person in health or illness, interacts with the environment, and thus responds to personal and environmental feedback. The client also demonstrates change over time, competitiveness, dominance, purposiveness and organization in daily living, all essential elements of general systems theory as defined by Von Bertalanffy (1968) and clarified by Boulding (1968). Exchange of information, matter, and energy occur between the person and the environment. It is within this interchange that stresses are created by either personal and/or environmental disruptive forces, and adaptation is an ongoing process.

Ecology theory includes not only the person-environment interaction of systems theory, but also the adaptive patterns of the interaction. According to Redman (1974), ecology, or the person-environment relationship, is a socially relevant concept for nursing, and is closely related to another concept, adaptation, which is fostered by environmental management in which nursing has considerable expertise. Lawton (1970) maintains that it is difficult to conceive of an ecology which does not include concepts of an individual and both physical and social environments. He sees an ecological approach as being especially relevant for problems of older adults since they are particularly sensitive to environmental variation. Therefore, an ecological system

structure seemed appropriate for study of the selected relocation transition.

In formulating the structural components of the present conceptual framework, four systems (termed domains) were delineated for the person-environment (ecological) structure. The four domains included one personal domain (man) and three environmental domains: 1) interpersonal (micro systems); 2) social (macro systems or institutions); and 3) environmental (the physical environment). Sixteen critical dimensions are conceptualized within these four domains (see Figure 1).

The personal domain is man in his individuality, uniqueness and integrity. This domain consists of six dimensions derived from medical science and social psychology, i.e., physiological, physical, cognitive and affective functioning, perceived self concept, and an existential or belief dimension. The physiological dimension encompasses the functional range of the eight bio-physiological systems: cardiovascular, pulmonary, integumentary, musculo-skeletal, nervous and special senses, endocrine, genito-urinary, and gastrointestinal. The physical functioning dimension is defined as the functional range of competence in physical self care attainable in the activities of daily living. The functional range of general mental abilities delineates the cognitive functioning dimension. These abilities include comprehension and orientation level, perceptual acuity, recall acuity, and problem solving abilities. The self concept dimension is defined as a valuative, basically stabilized self definition which includes feelings about the self and self worth as derived from significant others within the environment. The intensity of emotions, moods and feelings define the affective dimension, while the existential dimension encompasses levels of faith,

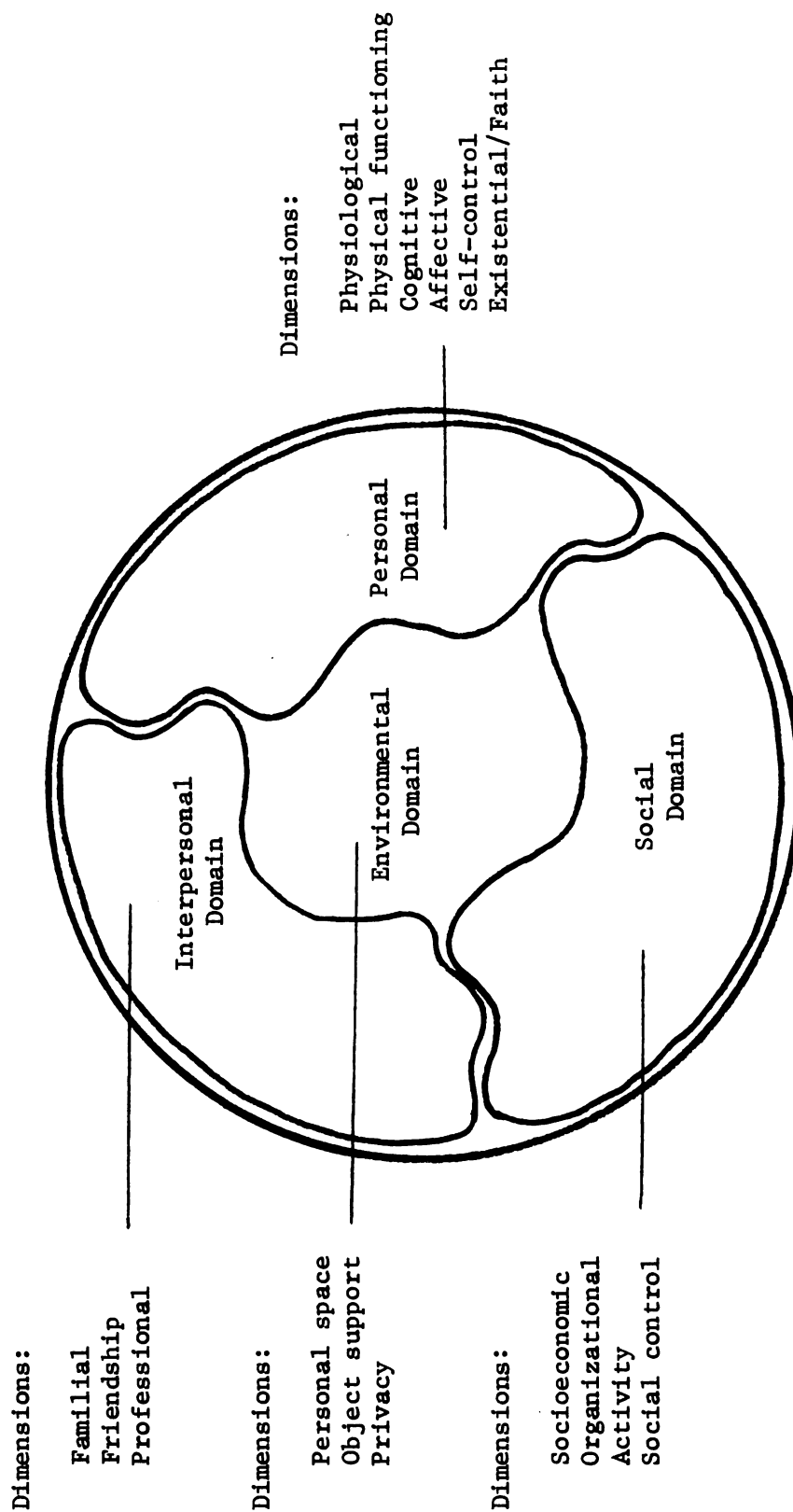


Figure 1. Structure Components of the Person-Environment Model.
The amoeboid configuration comotes a state of fluctuation due to interaction.

hope, and perceived life meaningfulness.

The interpersonal domain consists of the micro systems or close support systems of the person. These micro systems encompass primary social relationships found within three psychosocial dimensions: familial, friendship, and professional. The familial dimension is defined as the range of support and quality of interaction among spouse, children, parents and siblings. The range of support and quality of interaction among close associates generally designated as friends delineates the friendship dimension. This dimension also includes casual relationships with acquaintances, church affiliates, and neighbors. The professional dimension encompasses the range of support and quality of interaction with individuals designated by society as professional. This dimension is extended in this research to include paraprofessionals and non-professionals assisting within a professional field.

Macro systems or institutions define the social domain which encompasses secondary group or organizational relationships and societal indicators found within four sociological dimensions: socioeconomic, organizational, activity range, and social control range. The range of financial, educational, and occupational achievement and current status of the person is delineated in the socioeconomic dimension. The organizational dimension is defined as the range of participation in formal organizational functions including both social, religious, and health-related agencies. The activity dimension encompasses the range of participation in informal social, recreational, professional, and/or creative activities. The range of external control (social limitations or pressures) imposed upon the individual by governmental and/or institutional regulations is determined by the social control dimension.

The environmental domain consists of the material territory or physical milieu within which the individual functions as well as psychological aspects of the physical environment. This domain encompasses three dimensions identified from environmental psychology as crucial to the physical environment: personal space, privacy, and support from material objects. The personal space dimension is defined as the amount of space controlled by the individual for personal use, while the privacy dimension encompasses the range of control which the individual has over his personal-psychological (private) realm. Lastly, the object support dimension is defined as the range of emotional and/or physical support derived from significant and valued material objects within an individual's environment.

The formulation and definition of the structural components (both domains and dimensions) concluded the second phase in the model construction. Nursing literature and relocation research confirm the importance of these dimensions for the problem under study.

Process components. In the third phase of model construction the process components were selected for their relevancy to the research question at hand. The underlying theoretical base for the process components is found in stress and coping theory. House (1974) proposed a comprehensive paradigm which would encompass psychological and social components previously delineated by McGrath (1970), Levine and Scotch (1970) and French, Rodgers, and Cobb (1974). Five classes of variables are identified: 1) social conditions presumed conducive to stress; 2) the subject's perception of stress; 3) responses to stress (physiological, cognitive/affective, and behavioral); 4) and the more enduring outcomes of stress responses, with the interrelationships of these four

classes of variables being modulated by 5) individual and situational conditioning variables.

The influence of Lazarus (1966) is evident within House's paradigm as the individual and situational conditioning variables are analogous to his antecedent factors (stimulus configuration and psychological structure). Once the condition conducive to stress is perceived by the individual as stressful (analogous to Lazarus' primary cognitive appraisal, then responses to stress occur (physiological, cognitive/affective, behavioral). Neither of these theories allows for a reaction prior to the cognitive appraisal nor for individual stress reactions in the absence of the ability to cognitively appraise a situation as stressful due to mental aberrations. This point of controversy is now being raised in relation to stress responses of mentally impaired older populations.

House (1974) delineated in his paradigm the immediate stress responses from more enduring outcomes of stress responses, again analogous to the Lazarus stress model. However, House omitted the secondary cognitive appraisal, though inference can be made to some type of further assessment of the initial stress perception. In developing theory relevant to environment and aging, Schooler (1975) synthesized the theoretical formulations of Lazarus with those of Cassel (1973), thus adapting the concepts of social and biological buffers between stimulus and stress.

In the present study, the paradigms of House, Lazarus and Schooler have been further modified for appropriateness to the study of relocation within the nursing context. The relocation transition is the social condition conducive to stress. This transition is defined as the period of involuntary movement and subsequent adaptation of a per-

son from the acute care hospital to the long-term care facility. This transition period is limited to four months in the present research. The outcome variable is the attained level of institutional adjustment, as determined from a composite measure of life satisfaction correlates.

Three constructs are assumed to be both antecedent to the relocation transition and mediating variables between this stress inducing situation and the attained level of adjustment. These variables are stress impact, resource-deficit potential, and coping response patterns of the individual. Stress impact is defined as the magnitude of the cognitive and affective impingement of perceived and presumed stress events upon the individual. The resource-deficit potential includes the balance between the intensity of personal strengths and vulnerabilities, and between the presence and magnitude of environmental supports and inhibitors. The coping response patterns are the constellations of learned habitual action and emotional responses used by the individual in adjusting to stress situations. According to Coleman (1973), the coping responses would be subsumed under psychological resources. However, in this research they are believed to be of sufficient import to warrant separate consideration.

Stresses, resources and deficits are found in both the person and the environment prior to the relocation as well as arising from the institutionalization. Therefore, any complete paradigm of the stress and adaptation process in the relocation transition should include both pre-institutional stress impact and pre-institutional resource-deficit potential which results from institutionalization. The coping response pattern is also antecedent to the relocation but is seen to influence both the relocation and the level of adjustment (see Figure 2).

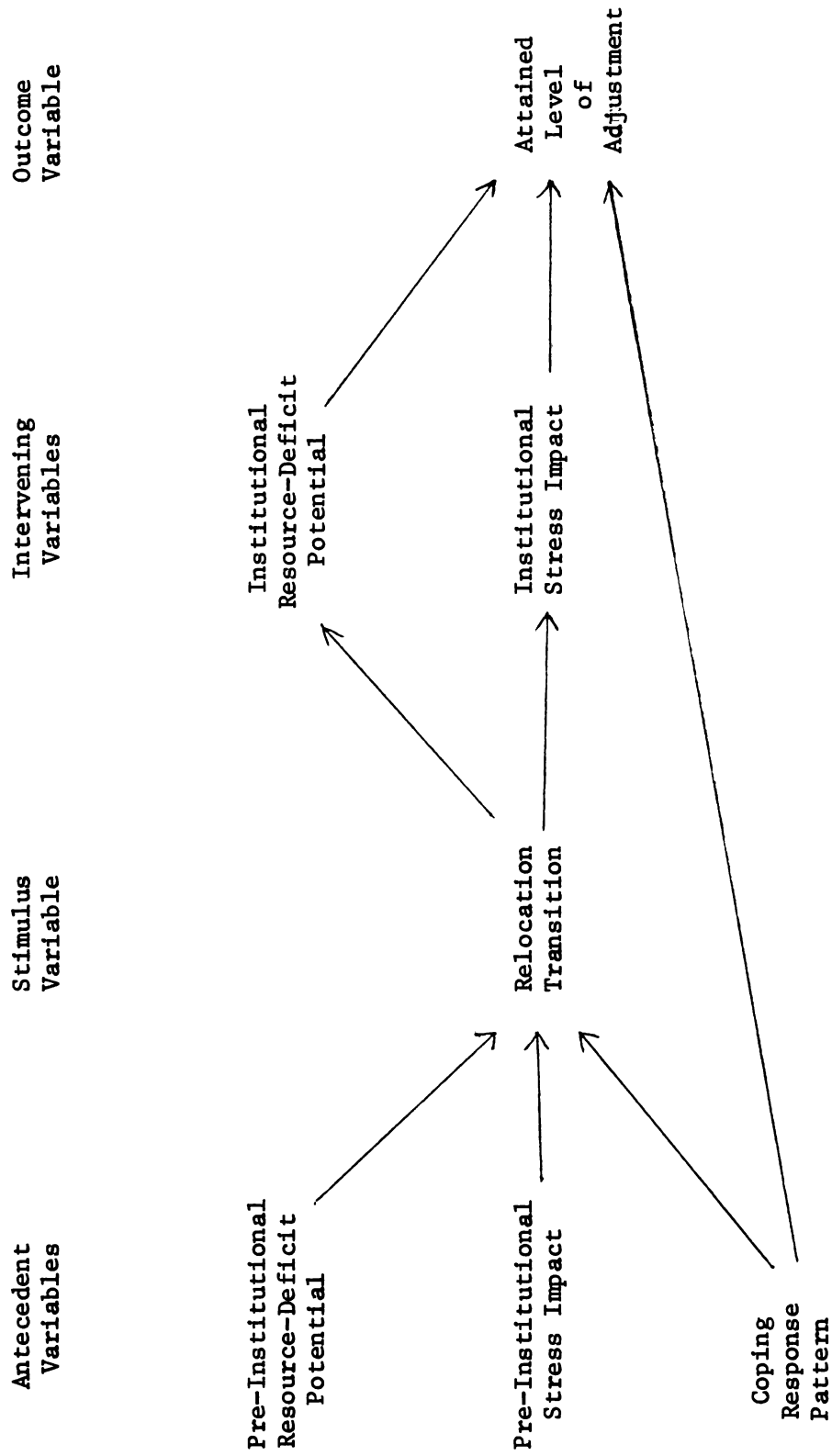


Figure 2. Process Components of the Person-Environment Model.

Lowenthal and Chiriboga (1973) caution against a too rigid assignment of variables to independent, mediating and outcome parameters, noting the shortcomings of such models. However, for purposes of examining the present research question, a preliminary assignment is imperative, allowing for flexibility in the interrelationships.

Since this is an exploratory study, no attempt is made at this time to formalize the relationships between these process components which will be more clearly delineated in the data analysis. However, this design is relevant for the third research question concerning factors predictive of adjustment.

Cross-classification of components. During the final phase of the framework construction, the structural and process components were not altered essentially, but were combined into smaller researchable units. Although the presence of intervening variables (e.g., stress) in one domain are assumed to reverberate in other domains, the impact of these variables in each domain would vary. Therefore, in order to delineate specific areas of stress, as well as the location of resources and deficits in each domain, these process components (stresses, resources, deficits, and coping patterns) were cross-classified with the structural domains (personal, interpersonal, social and environmental) and with the assumed originating points (pre-institutional or institutional). This resulted in more manageable segments of the model for analysis, which could then be more meaningfully interpreted. Furthermore, since nursing's realm is holistic man, than any assessment instruments compatible with a holistic person-environment model should include all aspects of that model within it. Hence, the cross-classification scheme provided an appropriate test grid for identifying required

items. Figure 3 depicts in cuboidal form the cross-classification of the structure and process elements with the origins. The operational definitions of the resultant constructs are found in Appendix A. However, in the definitions the indicators are not separated by institutional and pre-institutional, since some indicators are ambiguous in this regard.

In summary, in this chapter long-term institutionalization has been identified as the most troublesome component of the health delivery system. Yet involuntary relocation from acute care hospitals to long-term care facilities is a reality for many convalescing older adults. Hence, there is need for a research and practice model to guide nursing in this regard. In the present conceptual model based on systems and stress-adaptation theory, four structural components or domains (personal, interpersonal, social and environmental) were identified and subdivided into 16 dimensions. Of the process components, the relocation transition was identified as the stress inducing stimulus, with adjustment level as the outcome variable. Stress impact, resource-deficit potential, and coping response patterns were seen as both antecedent and consequent to the relocation. These structure and process components were cross-classified to facilitate instrument construction. The five research questions addressed the issues of: model formulation, instrument construction and validation, identification of factors predictive of adjustment, interrelationships of factors with coping types (to be derived from coping response patterns), and points of transitional change.

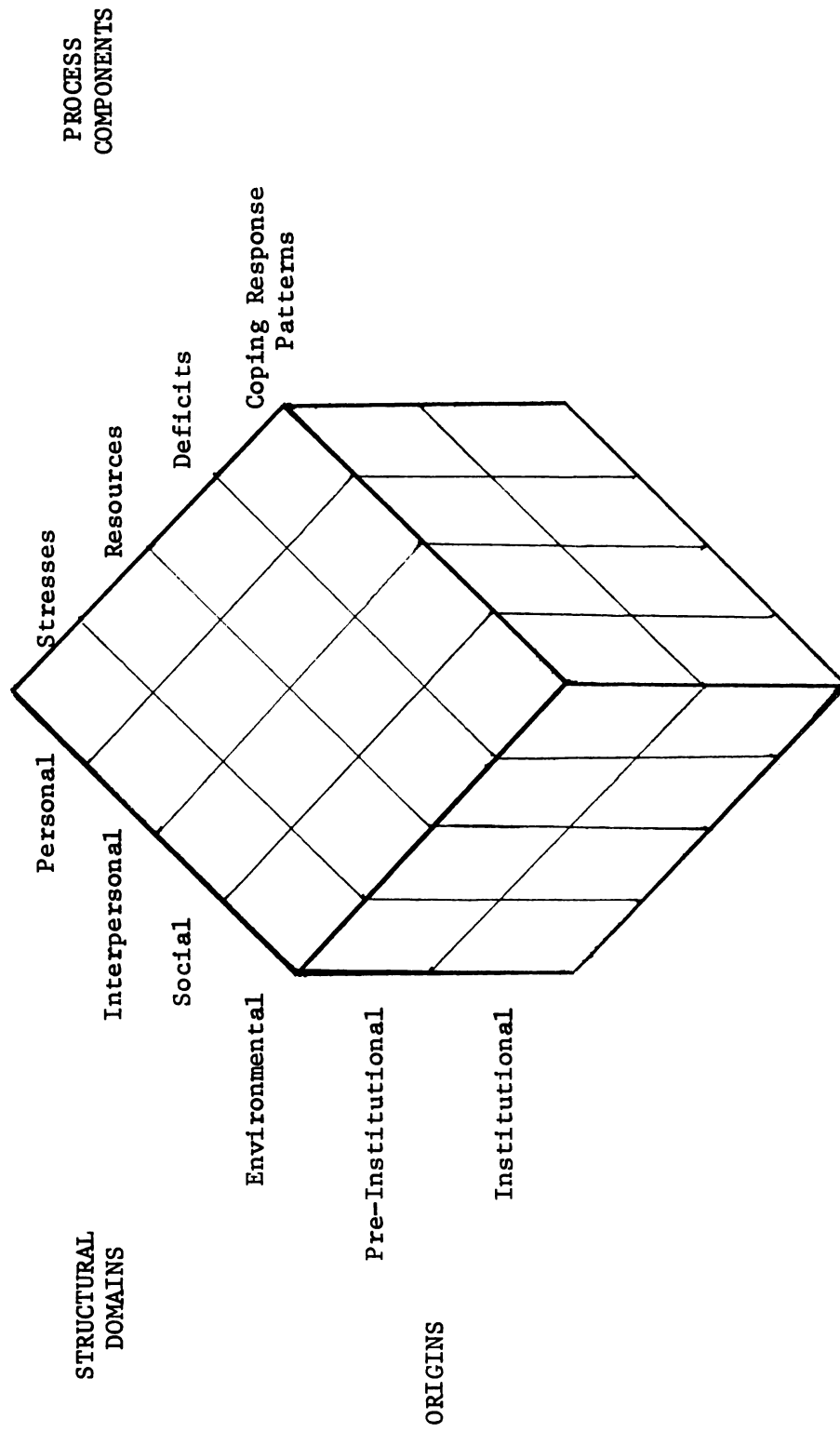


Figure 3. Cross-Classification Cube of Structure and Process Components with Originating Points.

II

METHODOLOGY

The relocation transition period examined in this study encompassed four months. Ideally, a transition is researched longitudinally, but time limitations and sample constraints made a longitudinal study unfeasible for the present research. Therefore, a cross-sectional design was used here. The transition period was divided into four time frames from date of admission to the long-term care facility through the fourth month, thus taking into account the three months following relocation which have been identified from previous research as critical (Aldrich & Mendkoff, 1963; Marlowe, 1972). Analysis of the transition process per se was limited to a group profile, with the variable -- length of time in the institution -- being used as an interval variable for the identification of the point in time of transitional change. However, the same variable was treated as a continuous variable for the purpose of categorizing and cluster analyzing the total group data.

Subjects

Ninety subjects over 60 years of age (25 men, 65 women; mean age = 77.4 years) were proportionately selected from one of three proprietary long-term institutions (termed "convalescent") in a large western metropolitan area. Proportionate selection was based on the percentage of the total client population for each facility. Each derived per-

tage was then subdivided into four time frames thus determining the proportion of subjects (22-24) to be selected from each institution for a given number of months institutionalized there. All clients over 60 years of age who met the research selection criteria and design limitations were considered eligible to participate in this study, and were approached by the investigator until the sample quota for each time frame was exhausted. All subjects voluntarily participated in the study and were conversant in English.

The subjects had been institutionalized in the long-term facilities four months or less. The sample was stratified into four groups based on their length of time in the institution from the date of transfer to the date of interview. The subjects had varying degrees of physical impairment, but were basically stable mentally as verified by physician and/or professional staff, and by congruence of the subject's responses between selected demographic information and chart admission data. The most common medical problem for these subjects was fractures of hip, spine, or extremity (25 subjects). Thirteen subjects were recovering from strokes, although none evidenced impairment of communication processes or speech mechanisms. Eleven subjects had cardiac problems, ten subjects had chronic lung problems, and another ten subjects disclosed circulatory problems of either a hypertensive or thrombic nature. Seven subjects had cancer, with bladder, lung, spine or prostate the primary site. Osteoarthritis affected five of the subjects. The remaining nine subjects were recovering from various medical and/or surgical problems. Although these were the presenting diagnoses necessitating long-term care, 67 percent of the subjects had histories of additional chronic problems with which they had been coping prior to being hospitalized.

None had histories of psychiatric symptomatology.

Ethnically, the sample consisted of 85 caucasian and five black subjects. For twelve of these subjects, English was not their first language though they were conversant in it. Fifty-nine of the subjects were widowed, while 10 were single, 12 married, seven divorced, and two classified themselves as other than these. Thirty-two subjects had no living children. Of those subjects having offspring, 92 percent were living within close proximity to the subject.

Most of the subjects (70%) were Protestant, with 13 percent Catholic, and 11 percent Jewish. Subjects in the higher socioeconomic brackets tended to own their homes, while those in the lower socioeconomic brackets primarily rented apartments. The small apartment was the most common type of residence, with retirement hotels or similar residential facilities second. A majority of the sample had lived alone and considered themselves their own decision makers (62%). All but two of the subjects were retired from gainful employment. The income range of the sample varied from below poverty level to greater than \$25,000 per year.

Instruments

Eight instruments were used for collecting data relevant to the phenomena found in the relocation transition under study. The selection and formulation of these instruments were guided by the components of the conceptual model. See Appendix B for the instruments. Validity and reliability coefficients for instrument items measuring the constructs were obtained by factor analytic methods which will be discussed in the following chapter.

Demographic Data Profile

The Demographic Data Profile, a 20 item questionnaire, included both index variables for population description and demographic resource variables. The ten index variables (e.g., sex, ethnicity) were assigned categorical or nominal codes for analytic purposes. The remaining 10 variables had interval data ratings suitable to the nature of the question. Occupational level was rated on a one to nine point scale (unskilled to professional) using a modified form of the major classifications of the United States Census Bureau. The seriousness of illness rating for the medical diagnosis was obtained from a modified coding of the Seriousness of Illness Rating Scale (Wyler, Masuda & Holmes, 1968). Consensual agreement was obtained from a panel of three nurse clinicians for the ranking and scoring of items not included in the scale. Seriousness of illness is defined by the authors of the scale as the magnitude of the potential for death if the condition is untreated. Several of the questions were also used in conjunction with routine institutional admission data to verify the cognitive accuracy of the subject for participation in the research. One of the questions from the Demographic Data Profile -- length of time in the institution at date of interview -- was used to measure the stimulus variable, the relocation transition, by operationalizing specific points of time during the transition period.

Semi-structured Interview

The Semi-Structured Interview consisted of ten open-ended questions developed by the investigator which were directly or indirectly related

to the conceptual model. These questions were modified by a pilot study with seven institutionalized older adults. Six questions pertained to either resources, deficits, stresses, action, or emotional responses. Two questions related to decision making limitations with the final two questions relevant to meaningfulness of life. The responses from all of the questions have been coded into logical categories. The resource responses were coded according to the Major Resource Index, the stress responses were coded according to the Stress Events Questionnaire, and the coping responses were coded according to the Geriatric Coping Scale situational action categories, thus making comparative analysis possible between structured and open-ended responses. The open-ended questions allowed for expansion of item responses beyond the control format of the respective instruments, thus permitting discovery and identification of new items of import (see Appendix C).

Stress Events Questionnaire

The Stress Events Questionnaire (SEQ), a 40-item scale of personal, interpersonal, social and physical environmental stresses, was adapted from the Lowenthal (1974) Life Events Questionnaire (modified and expanded from Holmes and Rahe, 1967). This instrument was used to operationalize the construct, stress impact, having both pre-institutional and institution-specific items.

Following a piloting of the instrument with seven institutionalized older adults, the scale was further modified to include items more relevant to this population. With the SEQ, data were collected on both presumed and perceived stress events which the subject had experienced primarily within the past three years or currently. Other events of

continuing import to the subject which may have occurred before that time were also included. In addition to the frequency of occurrence of the events, a rating was also obtained on the thought intrusiveness by means of a Likert-type scale ranging from "a lot" to "not at all" (scored 3 to 1 respectively), which the subject answered in response to the question of how much he now thought about the event. An affective score was then obtained by asking the subject how he felt about the event: "very happy, somewhat happy, somewhat unhappy, or very unhappy". These responses were scored from one to four respectively. A cumulative stress intensity score was obtained for each item by multiplying the frequency of occurrence of the event by the affect magnitude by the thought intrusiveness magnitude.

One open-ended question from the Semi-Structured Interview Schedule was also used in order to exhaust response possibilities of stresses impinging upon the subject. That question asked the subject what major stresses he was experiencing at the time of institutionalization. Responses were coded according to the SEQ.

Major Resources Index

The presence and intensity of personal and environmental resources were measured by the Major Resources Index (MRI), a 34-item scale of personal, interpersonal, social, and physical environment resources which were derived by content analysis of indepth interviews from a pilot study of seven subjects over 65 years of age. These items corresponded to the critical dimensions of the initial conceptual schema. The subjects were asked to state how much each listed resource was a help to them at the present time. The perceived intensity or degree of

help of each variable or item was scored on a four point Likert-type interval scale ranging from "strong" to "none". Each item was entered as a separate variable in the analyses.

In addition to this instrument, one open-ended question from the Semi-Structured Interview Schedule was also used in order to exhaust response possibilities. That question asked the subject to identify the most helpful assets or resources in adjusting to the institution. Responses were coded according to the MRI.

Geriatric Coping Schedule

The Geriatric Coping Schedule was constructed to elicit coping responses, including both actions and emotions, from older adults to stress situations identified as relevant to the older population. The format of the schedule is reminiscent of that developed by Gleser and Ihilevich (1969) and Sidle et al (1969) for use with younger samples. Twelve stress situations representing loss or threat in five major areas -- health, finances, competency, self-concept, and interpersonal relations -- are read to the subject. The subject is asked to describe what action he would take and what emotion he would feel for each situation. Following the twelve specific situations, the subject is asked how he deals with problems in general. Eleven action strategy statements were read, with Likert-type scale responses ranging from "always" to "never" for each item. Ten of these strategy statements were adapted from Sidle et al (1969). A final, open-ended question relating to how a person generally handles stress completes the instrument.

In the early development stage of the Geriatric Coping Schedule, fourteen situations were submitted to a panel of five gerontologists

from the fields of psychology, psychiatry, sociology, and anthropology in order to establish content validity of the situations as representative of major stresses encountered by older adults. Consensual agreement was obtained for 13 of the 14 items. Following a pilot study with the schedule using 15 adults over 60 years of age, the original 14 situations were reduced to twelve since two situations (including the one without consensual agreement) failed to elicit variation of responses. Since some subjects experienced difficulty identifying with the third-person type situations originally presented, these situations were edited into the more personalized second-person form, i.e., "you", in an attempt to elicit more direct and less evasive answers. Also noted in the piloting phase was a tendency of the subjects to provide cognitive types of responses when asked for feelings. To counteract this tendency, a list of 24 emotions adapted from Lazarus (1975) was compiled with the subjects instructed to select the emotion that best described their feelings in each situation (see Appendix C).

Five major action response categories were derived from content analysis of the responses in the pilot phase, with each category containing three to seven specific actions. The major action categories are: anticipatory behaviors, tension management, manipulation of environment, avoidance behaviors, and submission-resistance measures. The subsequent scoring of action responses from 120 randomly selected responses yielded an interrater reliability coefficient of .83. A retest of the Geriatric Coping Schedule using a subsample of 20 of the subjects indicated greater consistency over time for action responses than for emotional responses (reliability coefficients = .72 for scaled action responses, .65 for open-ended action responses, and .36 for emo-

tional responses). These findings suggest a state vs. trait response on emotions, linked to time of test taking.

Adjustment Ladder Scales

The Adjustment Ladder Scales were constructed to provide a multi-dimensional measure of adjustment as subjectively determined by the subject. These scales measured variables which were found in previous research to correlate either positively or negatively with adjustment: life satisfaction, perceived control over life and decisions, perceived health status, self image, anxiety, and illness perception (Neugarten, Havighurst & Tobin, 1968; Bortner & Hultsch, 1970; Botwinick & Storandt, 1974; Edwards & Klemmack, 1973; and Medley, 1976).

The life satisfaction, control and health rating scales were modified from the Botwinick and Storandt (1974) ladder scales of these variables. The remaining three scales were patterned after these. All of the scales had a rating of one to ten, and were actually constructed in the form of a ladder similar to the one described by Kilpatrick and Cantril (1960). The subjects were shown the ladders and asked to place themselves on each ladder scale where they would see themselves now in terms of each concept. In order to obtain a rating of past satisfaction each subject was also asked to place himself on the ladder where he would have been during most of his life in regard to each concept.

Staff-Rated Adjustment Scale

The Staff-Rated Adjustment Scale adapted from Kahana (1972) was a single Likert-type scale ranging from "completely adjusted" with a rating of "10", to "not at all adjusted" with a rating of "1". The

personnel were instructed to rate the patients according to how happy and satisfied they seemed with their lives in the convalescent hospital at the present time. A single global rating was obtained and recorded by the personnel for each patient.

Modified Physical and Mental Impairment-of-Function Evaluation

The Modified Physical and Mental Impairment-of-Function Evaluation (Modified PAMIE) was adapted from the Physical and Mental Impairment-of-Function Evaluation of Gurel, Linn and Linn (1972), and used in this present research to identify deficits. The Modified PAMIE is a 76-item behavioral rating scale of physical, psychological, and social, interpersonal functioning. The major modification of the PAMIE occurred in the scoring technique, with the dichotomous coding of "yes" or "no" replaced by a tri-coding format of "always", "sometimes", or "never", which was initially used by Hefferin and Hunter (1975) in a similarly modified version of the scale for which they found an interrater reliability coefficient of 0.99. Eighteen of the 76 items in the Modified PAMIE are health indicators, while 56 items are indicators of health deficits. These 74 items are scored from one to three on the frequency of occurrence of the negative behavior, with a reverse scoring in effect for positive items. The remaining two items of the scale range from healthy behavior through four stages of illness behavior and are scored from one to five with the higher score for the more debilitating behavior. A low score on the Modified PAMIE was indicative of physical and/or mental health as a resource, while a higher score indicated varying degrees of deficiency in the functional health area. The behavioral ratings were completed

by the investigator in consultation with the nursing staff.

Procedure

All subjects were individually interviewed by the same investigator. More than one session was required for the interview which was conducted in private accommodations provided by each long-term facility. The interview sessions varied both in number (2-6) and in length (15 to 50 minutes), due to interruptions from visitors, various therapy groups, unpredictable nursing care schedules, and occasionally, the psychological mood or physical condition of the subject. No sessions exceeded 50 minutes, a time limit set by the investigator for scheduling purposes. Most of the interviews required three to four sessions for completion.

All subjects who had been transferred within a four-month time span from an acute hospital to the long-term care facility were potentially eligible to participate in the research if they met the selection criteria. Subjects were informed of the purpose of the research, and their participation was on a purely voluntary basis with the assurance of absolute anonymity. They were also informed that they could withdraw from the study at any time without jeopardy to their status as a client. No compensation was given for their participation. All 90 of the subjects who agreed in writing (see Consent Form, Appendix D) to participate in the research completed the interview. Twenty subjects refused to participate in the study, primarily due to fear of or legal advice against signing the consent form. Before asking a client to participate in the study, the investigator obtained the written consent of the client's physician. Rarely did a

physician refuse this consent, and only for medical reasons. The written consent of the physician was required by the three long-term care facilities within which the study was conducted.

All instruments were administered by interview to the subjects and followed the same order of administration. The interview began with the Demographic Data Profile, since this instrument provided a basis of comparison of responses with the routine hospital admission data thus objectively validating the cognitive ability of the client for further participation in the interview. The Semi-structured Interview was administered after the Demographic Data Profile in order that the generality and spontaneity of the open-ended responses would not be influenced by the specificity of each of the three succeeding instruments: the Stress Events Questionnaire, the Major Resource Index, and the Geriatric Coping Schedule. The interview concluded with the Adjustment Ladder Scales.

Following the final interview session, the Modified PAMIE behavioral rating was completed by the interviewer in collaboration with the charge nurse of the unit in which the patient resided. Lastly, the charge nurse, in conjunction with her nursing staff, rated the subject on the Staff-rated Adjustment Scale.

In summary, 90 men and women over 60 years of age who had been hospitalized less than four months in one of three convalescent facilities voluntarily participated in the study. The subjects had varying degrees of physical disability but were free of mental impairment. Six questionnaires were administered to the subjects in multiple interview sessions based on the tolerance level of the individual. These questionnaires centered around stresses experienced and resources perceived

by the subject, coping action and emotional patterns, demographic data, and various correlates of adjustment. Following each interview, a functional behavioral rating was completed on the subject along with a staff estimate of the subject's adjustment level in the institution.

III

RESULTS

Although subjects had been drawn from differing institutions, early analyses confirmed that except for income level demographic differences were nonsignificant to this study. An analysis of variance with Duncan a posteriori contrast of selected demographic variables and health measures (including the Modified PAMIE) by institution revealed homogeneity of the three institutional groups on all but the one variable, present income level. This difference was anticipated since a varied socioeconomic level was one of the criteria for selection of institutions. Therefore, for further data analyses, all subjects were regarded as composing a single sample.

Descriptive Analyses

Responses from the Semi-Structured Interview were categorized and coded to provide more descriptive data of the sample. When asked how they felt about being in the long-term care facility, 66 percent of the subjects expressed varying degrees of unhappiness, 20 percent were neutral, and the remaining 14 percent were relatively happy about it, relating these feelings of pleasure with adequate surroundings, good food, and self improvement physically. Twenty-eight percent who were unhappy related it back to their physical dependency and lack of control as well as the desire to be home. Twenty-two percent stated they were unhappy because of problems with personnel inefficiency and perceived

cultural and/or status differences between themselves and the staff. Ten percent of the subjects were unhappy with the institutional environment, while five percent found the roommate a problem, either because of debilitating physical conditions or interpersonal conflicts.

Fears or worries about being in the institution centered primarily around personnel (18%) and dependency and loss of control (16%). Over half the subjects (54%) denied having any fears or worries, although they later detailed stress events with high thought intrusiveness in the Stress Events Questionnaire which would indicate worry.

Half of the subjects felt they could not make any decisions about themselves in the facility. Eighteen percent felt they could make all their own decisions. Some decisions subjects mentioned they could make were to get along with personnel, and to decide on types of care after discharge. When asked to state what decisions they would like to make but felt unable to make, the subjects cited such decisions as leaving the facility, selecting roommates and personnel, and controlling own decisions.

Further data revealed that the family was the most frequent source of comfort (24%) for the subjects, followed by religion (13%), and passive diversions such as television and radio (11%). For 18 percent of the subjects, nothing gave them comfort. In response to the question concerning what made their life meaningful or worth living, 30 percent again responded with the family, while religion (11%) and independence (11%) were sources for others. For ten percent of the subjects friendship made their life meaningful, while nine percent found meaningfulness in the hope of getting well. Again, as in the response to the previous question, 18 percent found nothing which gave their life meaning. How-

ever, only one of these subjects mentioned a desire to die.

One response which was not elicited by any question in the Semi-Structured Interview Schedule, but which is found within the interview protocols, was the hope that the period of long term institutionalization would be only a temporary one. This hope was expressed by 90 percent of the subjects. Ten percent stated they were losing this hope, and feared the hospitalization would be permanent. This same fear of having to remain permanently in the facility was voiced even by those subjects who still had hope. The verbalizations of this fear were more numerous among those who had been hospitalized the longest. This finding and the descriptions of the other data analyses presented here will be related to other findings in the concluding section of the chapter.

Data Reduction Measures

Initial data analysis of the Demographic Data Profile, Stress Events Questionnaire, Major Resource Index, Adjustment Ladder Scales, Staff-rated Adjustment, Geriatric Coping Scale, PAMIE, and Semi-Structured Interview -- included a frequency count, with means and standard deviations on all the interval data. Any item which failed to show sufficient variation (at least one standard deviation above or below the mean) was rejected from further analysis. Likewise, any coded item which did not have at least a 15 percent response rate was rejected.

Further data reduction measures were undertaken in order to extricate the statistically significant phenomena found in the adaptation of older adults to stresses inherent in the institutional transfer. The initial logically conceptualized model would then be altered by the

empirically derived and, thus, more statistically meaningful model. Also, by identifying those assessment indicators loading saliently on the derived factors and thus contributing to the reliability and validity of the construct they measure, a parsimonious assessment instrument could be constructed from the reduced data.

The canonical factor regression method (CFRM: Allen, 1974) which utilizes Rao's canonical factor analysis procedure (Rao, 1955; SPSS, 1975) was employed for deriving composite scores from the multiple items or indicator variables used in the data collection to measure the personal, interpersonal, social and environmental domains of the abstract theoretical constructs, Stress Impact and Resource-Deficit Potential. An adjustment composite score was also derived. Allen delineates several important properties of this method for the construction of composite measures. First of all, the first canonical factor can be defined as the unobserved abstract variable and is maximally correlated with the observed variables loading on it. It is easier to substantively interpret a composite measure when the observed indicators are highly correlated with the first canonical factor. With several reliable common factors, differing theoretical constructs may emerge. Secondly, the regression method of deriving the composite measure from a linear weight equation results in a factor score estimate that is highly correlated with the unobserved factor score and uncorrelated with other factor score estimates. Lastly, the reliability and validity of the resulting composite is maximized by the canonical factor regression method.

In this study, indicators were separated initially into the personal, interpersonal, social or environmental domains they were pur-

ported to measure. Each domain was then factored using Rao's canonical factoring procedure with orthogonal solutions. Either an unrotated solution or a varimax or quartimax rotation was used. The determination of the suitability of the solution was based primarily on the meaningful interpretability of the resultant factors. Since the domains were viewed as general, that is, containing more than one dimension, the substantive interpretation of the underlying construct believed to be represented by a factor was made on the basis of the specific variables which loaded saliently on that factor. The composite measure score was then computed for each factor using the salient indicators ($r > .40$; Gorsuch, 1974). Lastly, reliability and validity coefficients were computed. Equations for deriving the composite scores, linear weights, reliability coefficient omega (ω CFRM), and the validity coefficient rho (ρ CFRM) according to the canonical factor regression method are found in Appendix E.

Deficit Composites

Deficits were envisioned in the initial framework as dimensions of physical and mental impairment derived from behavioral ratings. From the 20 items of the Modified PAMIE having sufficient variability, four composite variables accounting for 71 percent of the variance were abstracted using Rao's canonical factoring procedure, quartimax rotation, and the canonical-factor-regression method. The first factor corresponds to the abstract variable defined as Hostile-Paranoid Deficit which was measured by five behavioral ratings on items involving complaints and claims of mistreatment. The relevant information from the canonical factoring procedure is presented in Table 1. For all four

Table 1
Rao's Canonical Factoring, Quartimax Rotation, for defining
Hostile-Paranoid Deficit Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Complains	.9632	.9618	.0382	.4936
Gripes a lot	.9623	.9608	.0392	.4806
Claims mistreatment	.6768	.5809	.4191	.0316
Claims poor care	.5920	.4405	.5595	.0207
Easily upset*	.4792	.4933	.5067	.0185

*Salient loadings on two factors.

Reliability coefficient omega (ω CFRM) = .980

Validity coefficient rho (ρ CFRM) = .990

composite measures, the reliability coefficients range from .916 to .980, and the validity coefficients range from .957 to .990. These values are reported in the respective composite tables.

The second factor, Physical Dependency Deficit, was measured by nine behavioral ratings of physical limitations and need for assistance with the activities of daily living. The factor analytic components are presented in Table 2.

Four indicators had salient loadings on the third factor, defined as Anxious-Depressed Deficit. The indicators are items measuring worry-related behaviors and depressed feelings which are presented in Table 3.

The fourth canonical factor corresponds to the abstract variable, Behavioral Deterioration Deficit, and was measured by three behavioral rated items indicative of unkempt appearance and action. These indicators and their factor analytic components are presented in Table 4. Two items (sits and does nothing, and easily upset) tended to load on more than one factor, but could be meaningfully interpreted on both. Therefore, their contribution to each factor was determined and used in the separate analysis of each composite score. The four abstract variables with their resultant composite measures were then entered separately into further analyses as independent components of the Resource-Deficit Potential.

Resource Composites

Resources were conceptualized within the man-environment framework as being of a personal, interpersonal, social or environmental nature. Indicators of these domains of resources are selected from the

Table 2
Rao's Canonical Factoring, Quartimax Rotation, for defining
Physical Dependency Deficit Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Help dressing	.9020	.8453	.1547	.3233
Help Toileting	.8860	.7918	.2082	.2360
Given bed baths	.8810	.7998	.2002	.2440
Help bathing	.7701	.6167	.3833	.1114
Difficult ambulation	.7120	.5109	.4891	.0807
Amount of time in bed	.5949	.3927	.6073	.0543
Sits and does nothing*	.4907	.4844	.5156	.0528
Difficulty climbing steps	.4397	.2364	.7636	.0319
One or both legs paralyzed	.4381	.1962	.8038	.0302

*Salient loadings on two factors.

Reliability coefficient omega (Ω CFRM) = .945

Validity coefficient rho (ρ CFRM) = .972

Table 3
Rao's Canonical Factoring, Quartimax Rotation, for defining
Anxious-Depressed Deficit Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Seems unhappy	.9250	.9396	.0604	.6008
Looks worried and sad	.9087	.8983	.1017	.3506
States depressed feelings	.7721	.6520	.3480	.0870
Is easily upset*	.4988	.4933	.5067	.0386

*Salient loadings on two factors.

Reliability coefficient omega (Ω CFRM) = .961

Validity coefficient rho (ρ CFRM) = .980

Table 4
Rao's Canonical Factoring, Quartimax Rotation, for defining
Behavioral Deterioration Deficit Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Looks sloppy	.9118	.8604	.1396	.5459
Never neat and clean	.8785	.8335	.1665	.4410
Sits and does nothing*	.4387	.4844	.5156	.0711

*Salient loadings on two factors.

Reliability coefficient omega (Ω CFRM) = .916

Validity coefficient rho (ρ CFRM) = .957

Demographic Data Profile, the Major Resource Index, and the coded interview responses, totalling 60 items with sufficient variation. These indicators were then separated into the general resource domains they were designed to measure. Initial factoring of each domain (personal, interpersonal, social and environmental) disclosed 23 items having minimal communality ($< .199$) which were subsequently eliminated before further analysis.

From 17 indicators of a personal resource domain, five factors accounting for 58 percent of the variance were derived by Rao's canonical factoring procedure, varimax rotation. Only two of the factors had two or more indicators which were ratings of perceived adjustment ability, perceived emotional and physical strength, and peace of mind. In view of these salient loadings, the abstract personal resource was inferred to be a Perceived Wellbeing Resource. The factor analytic components are found in Table 5. The reliability coefficients for the five resource composites range from .865 to .984. The respective composite tables contain these values.

The specific factor, defined as a Self-Satisfaction Resource, had only two salient loadings — ratings of perceived intelligence and self satisfaction as resources. Table 6 provides the relevant information from the canonical factoring. Three indicators -- religious affiliation, perceived problem solving ability rating and hope rating -- had only singular but high loadings on the remaining three factors so were retained individually for further analysis. Eight indicators which failed to load saliently on any factor were discarded.

Canonical factoring of seven indicators of a social resource domain disclosed two factors accounting for 47 percent of the variance.

Table 5
Rao's Canonical Factoring, Varimax Rotation, for defining
Perceived Well-Being Resource Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Perceived adjustment ability	.9386	.9593	.0407	.9758
Perceived emotional strength	.5124	.4331	.5669	.0382
Perceived physical strength	.4514	.2373	.7627	.0250
Peace of mind	.4170	.3241	.6759	.0261

Reliability coefficient omega (Ω CFRM) = .958

Validity coefficient rho (ρ CFRM) = .979

Table 6

Rao's Canonical Factoring, Varimax Rotation, for defining
Self Satisfaction Resource Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Perceived intelligence	.9358	.9707	.0293	1.0227
Self satisfaction	.4787	.3297	.6703	.0229

Reliability coefficient omega (Ω CFRM) = .968

Validity coefficient rho (ρ CFRM) = .984

A general Socioeconomic Status (SES) Resource factor had salient loadings of three indicators: educational level, occupation level, and income level (see Table 7). Two financial indicators loaded saliently on a second more specific factor but had a reliability coefficient of only .450, so were excluded from further analysis along with two other indicators which failed to load on any factor.

Three of four indicators of an environmental resource domain loaded saliently on the general factor derived by canonical factoring, varimax rotation. (Two factors accounted for 72 percent of the total variance.) The abstract variable, Environmental Control Resource, was inferred from and measured by the ratings on personal space, privacy and safety for personal things as perceived resources. The relevant information from the factoring procedure is presented in Table 8.

Canonical factoring, varimax rotation, of nine items indicative of an interpersonal resource domain resulted in four factors which accounted for 64 percent of the variance. Only the first or general factor had even two salient loadings on it. These indicators of a Familial Resource -- number of children and number of children living near -- and their relevant components are found in Table 9.

One indicator which had a high single salient loading -- registered nurse -- was given the status of an individual variable and entered into further analyses. Six additional indicators which failed to load saliently on any factor were discarded. The scores of the five composite resource variables and the four individual resource variables were then entered separately into further analyses as independent components of the construct, Resource-Deficit Potential.

Table 7

Rao's Canonical Factoring for defining

SES Resource Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Educational level	.7786	.6101	.3899	.5019
Occupational level	.7476	.5630	.4370	.4300
Income level	.4417	.1947	.8053	.1066

Reliability coefficient omega (Ω CFRM) = .749Validity coefficient rho (ρ CFRM) = .865

Table 8
Rao's Canonical Factoring, Varimax Rotation, for defining
Environmental-Control Resource Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Amount of space for personal use	.8241	.7431	.2569	.5806
Amount of privacy	.7967	.6413	.3587	.4020
Safety for personal things	.4159	.1089	.8911	.0642

Reliability coefficient omega (Ω CFRM) = .819

Validity coefficient rho (ρ CFRM) = .905

Table 9
 Rao's Canonical Factoring, Varimax Rotation, for defining
 Familial Resource Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Children living	.9345	.9168	.0832	.4923
Children near	.9456	.9210	.0790	.5246

Reliability coefficient omega (Ω CFRM) = .956

Validity coefficient rho (ρ CFRM) = .978

Stress Composites

Five composite scores were computed for variables derived from application of the canonical-factor-regression method to the data obtained from the Stress Events Questionnaire and the coded stress-related interview responses. The 49 items having sufficient variation from these instruments were separated into the domains they were assumed to measure: personal, interpersonal, social and environmental.

Two factors which could be interpreted meaningfully emerged for the interpersonal domain from factoring 12 indicators with Rao's canonical factoring procedure, quartimax rotation. (Three variables accounted for 48 percent of the variance.) The first or general factor delineated a Nursing Personnel Stress variable which was measured by four indicators loading saliently -- change in personnel attitude, perceived personnel cruelty, crudity and inefficiency. The relevant information from the canonical factoring procedure is presented in Table 10. The reliability coefficients for all five stress composites range from .688 to .887, and the validity coefficients range from .829 to .942. These values are found in their respective composite tables.

From the second meaningfully interpretable factor a Family Conflict Stress variable was identified. The three indicators which loaded saliently on this variable were: conflicts, family interpersonal stress, and change in family concern. The factor analytic components for this composite are found in Table 11. Four additional indicators were excluded from further analysis because of non-salient loadings. One variable with a singular salient loading was retained -- loss of spouse.

Table 10
 Rao's Canonical Factoring, Quartimax Rotation, for defining
 Nursing Personnel Stress Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Change in personnel attitude	.8593	.7458	.2542	.4660
Personnel inefficiency	.8415	.7535	.2465	.4706
Personnel cruelty	.4203	.2658	.7342	.0789
Personnel crudity	.4059	.3019	.6981	.0801

Reliability coefficient omega (Ω CFRM) = .862

Validity coefficient rho (ρ CFRM) = .929

Table 11
 Rao's Canonical Factoring, Quartimax Rotation, for defining
 Family Conflict Stress Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Conflicts, intense disagreements	.8451	.8047	.1953	.8331
Family interpersonal stress	.5149	.2654	.7346	.1349
Change in family attitude	.3820*	.1739	.8261	.0890

*Non-salient, trend loading.

Reliability coefficient omega (Ω CFRM) = .808

Validity coefficient rho (ρ CFRM) = .899

Canonical factoring, with quartimax rotation, of the 10 assumed indicators of the personal domain revealed three factors which accounted for 54 percent of the total variance. Only the first factor was meaningful in interpretation, having four indicators -- changes in self care ability, control of decisions, and physical activities, and increased illness stress -- with salient loadings which defined a Dependency-Control Stress component. The relevant information from the factoring procedure is in Table 12. Four items which did not load saliently on any factor were eliminated. Two other indicators -- change in vision and hearing and change in memory and thinking processes -- which had singular high loadings were retained for further analyses.

Ten indicators assumed to measure an environmental stress domain were factored into three factors accounting for 49 percent of the variance. Four indicators loaded saliently on the general factor, defined as Environmental Change Stress as determined from the items of change in privacy, living situation, and personal space, and a loss of valued objects item. The factor analytic components for the abstract variable are presented in Table 13. One additional indicator -- giving up home -- had a high single salient loading so was retained for further analyses. Five other indicators having nonsalient loadings on all factors were discarded.

Canonical factoring of seven indicators of a social stress domain resulted in two factors accounting for 60 percent of the total variance. Only the general factor was meaningful, having salient loadings of two indicators -- change in enjoyable activities and loss of driver's license -- and a trend loading (nonsalient) of a third indicator --

Table 12

Rao's Canonical Factoring, Quartimax Rotation, for defining
Dependency-Control Stress Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Change in self-care ability	.7974	.6701	.3299	.5259
Change in control of decisions	.6122	.4580	.5420	.2458
Change in physical activities	.5862	.3461	.6539	.1951
Illness stress	.5573	.3126	.6874	.1764

Reliability coefficient omega (Ω CFRM) = .783

Validity coefficient rho (ρ CFRM) = .885

Table 13
Rao's Canonical Factoring for defining
Environmental Change Stress Composite

Indicators	Factor Loading	Communality	Uniqueness	Linear Weight
Privacy change	.8764	.8755	.1245	.7972
Loss of valued objects	.4582*	.8252	.1748	.2969
Living situation change	.4206	.2241	.7759	.0614
Personal space change	.4174	.2480	.7520	.0629

*Salient loadings on two factors.

Reliability coefficient omega (Ω CFRM) = .887

Validity coefficient rho (ρ CFRM) = .942

change in social activities. The abstract variable inferred from these salient indicators was Activity Change Stress. The factor analytic components are presented in Table 14. Other items which failed to load saliently on any factor were excluded from further analysis. The scores of the five composite variables and the four individual variables were then entered separately into further analyses as independent components of the construct, Stress Impact.

Adjustment Composite

The six Adjustment Ladder Scale scores and the Staff-rated Adjustment Scale score were conceptualized as seven components of an attained level of adjustment variable. Canonical factoring of these scale scores resulted in two factors, accounting for 50 percent of the variance. The first factor had five indicators with salient loadings, three positive -- life satisfaction, control and health -- and two negative -- illness and anxiety. Since the underlying construct inferred from the salient indicators appeared to be one of morale or wellbeing, the composite measure will be referred to as the Moral-Adjustment Level in further analyses. Table 15 provides the relevant information from the canonical factoring. The reliability coefficient omega for this abstract variable is .796 and the validity coefficient rho is .892.

Coping Types

Only 18 of 24 categorized actions and 17 of 24 emotions were retained in the Geriatric Coping Scale. All of the scaled action strategy responses showed sufficient variability for retention. These data were

Table 14

Rao's Canonical Factoring for defining

Activity Change Stress Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Change in activities enjoyed	.7881	.6533	.3467	.7097
Loss of Driver's license	.4107	.2930	.7070	.1814
Change in social activities	.3776*	.1748	.8252	.1429

*Non-salient, trend loading.

Reliability coefficient omega (Ω CFRM) = .688

Validity coefficient rho (ρ CFRM) = .829

Table 15
Rao's Canonical Factoring for defining
Morale-Adjustment Composite

Indicator	Factor Loading	Communality	Uniqueness	Linear Weight
Life satisfaction	.7558	.7296	.2704	.5711
Control	.5888	.3488	.6512	.1847
Health	.5596	.3671	.6329	.1807
Illness*	-.4363	.6510	.3490	-.2554
Anxiety	-.4117	.1886	.8114	-.1037

*Salient loadings on two factors.

Reliability coefficient omega (Ω CFRM) = .795

Validity coefficient rho (ρ CFRM) = .892

then subjected to a variable clustering (Biomedical Computer Program -- 1M; BMDP, 1975) of each of the three types of responses (categorized actions and emotions, and scaled action statements) in order to determine the degree of collinearity of responses within each grouping. Of the 18 open-ended (categorized) action strategies, only one cluster, accounting for two variables (information search and compromise), met the distance function criteria of 65 or above ($r=.30$) at the .01 significance level, thus indicating apparent independence of specific actions within the conceptualized major action categories, and lending support to the use of a separate code for each type of action. None of the 17 emotions clustered significantly, again suggesting relatively independent underlying functions. Of the 11 scaled action statements, two clusters accounted for four variables, (seeing humorous situations and drawing on past experiences; additional information search and use of alternative plans) with seven independent items remaining. Another variable clustering combining actions with emotions was then undertaken to locate additional salient homogeneous groups across categories. Six new variable clusters, accounting for 15 variables, met the distance function criteria as delineated above (see Table 16).

In an effort to determine if coping types would evolve from the coping action and emotion strategies, the next set of analyses consisted of case clustering (Biomedical Computer Program - 2M) on the basis of profiles on the individual's frequency scores on both the six new variable clusters and the remaining independent variables. Chi-squares were used as distances between clusters, with amalgamation by summation. Five clearly delineated case clusters emerged containing from 11 to 24 subjects per group. A breakdown of these subjects by age and sex is re-

Table 16
Variables Constituting the Coping Strategy Clusters

Item Clusters	Variables
C1	CM2 Seeing humorous aspects
	CM9 Drawing on past experiences
	CM10 Using tension release methods
C2	CM1 Additional information search
	CM8 Use of alternative plans
	CM11 Rehearsal
C3	CA11 Hostility directed inward
	CE2 Anger
C4	CA6 Cognitive restructuring (positive)
	CE13 Defeated
C5	CE9 Fearful
	CA3 Information search, self-directed
	CA21 Compromise or negotiation
C6	CA12 Psychosomatic manifestations
	CE17 Hopeless

ported in Table 17.

A breakdown of the same five case clusters by action strategies and emotions revealed significant group differences on 19 variables. The major definers of each of the five coping types were empirically determined by establishing confidence limits for each individual cluster mean (standardized) at the .05 confidence level. The cluster means of the significant variable definers are found in Table 18.

Coping Type I had four significant definers lending support to a logical conceptualization of this style as Information Seekers/Worriers. These subjects tended to use information search strategies and the emotion of worry in response to the situations presented them in the Geriatric Coping Schedule. They scored low on the action of withdrawal and on the emotion of depression. The subjects in this cluster had been in the institution the shortest length of time of the five groups (1.9 months) and were the least intensely ill according to the severity of illness rating. These last two findings represent trends rather than statistically significant data.

Coping Type II tended to use strategies indicative of dependence on others, that is, help seeking and talking with others. Therefore, this cluster was conceptualized by the investigator as the Other Dependent Coping Type. This group was low on strategies which altered the present environment, as well as on elicited emotions of resentment and bothered feelings. This type had the highest mean illness of all the clusters. Coping Type III (Withdrawn) selected withdrawal, inaction and not knowing what to do as their predominant responses to situations. The subjects in this cluster were low on information search strategies, involvement in other activities, and active resistance strategies. Although non-

Table 17
Age (by decade), Sex, and Coping Cluster Typology Membership

Age		60-69	70-79	80-89	90-99	Age $\bar{x}$
Cluster	N					
1 Males Females	(4) (15)	2 4	1 6	1 5	0 0	74.9
2 Males Females	(5) (19)	2 1	2 7	1 10	0 1	78.1
3 Males Females	(7) (17)	0 2	1 5	5 7	1 3	81.3
4 Males Females	(5) (6)	1 3	4 1	0 2	0 0	73.0
5 Males Females	(4) (8)	1 3	1 2	1 2	1 1	75.8

Table 18
Significant* Variable Definers of the Five Coping Types

Variables	Clusters				
	1 N=19	2 N=24	3 N=24	4 N=11	5 N=12
Information search	60		44	43	
Help seeking		55			
Hostility inward				58	
Alter present environs		45			57
Inaction			57		
Don't know			56	43	
Withdrawn	45		56		
Active compliance					42
Passive compliance				60	
Active resistance			45		61
Worried	57				
Bothered		45			
Lonely					43
Depressed	44				
Resentful		45			58
Dissatisfied				61	
Talk with others		56			
Involvement in other activities			45		56
Humor/past experiences				58	

*Beyond 95 percent confidence interval for group $\bar{X}$ of 50.

significant, this cluster had the highest mean age of 81.3 years and had the longest average time in the institution, 2.9 months. Both Coping Type II and Coping Type III had non-significant but high trend scores on loneliness. Type II was also high on depression.

Coping Type IV is conceptualized as a Self-Oriented/Discontent cluster. These subjects tended to select strategies indicative of hostility directed inward, passive compliance, and drawing upon past experiences. The significant emotion elicited to the coping situations from this group was dissatisfaction. This cluster was low on seeking information from others, and the selection of not knowing what to do as action strategies.

The fifth cluster, conceptualized as Manipulative/Resentful (Coping Type V), tended to use manipulative-type strategies such as active resistance, altering the present environment, and activity involvement in coping with the hypothetical situations presented them. The predominantly selected emotion was resentment. These subjects were low on the active compliance strategy and the selection of loneliness as an emotional response. Both Coping Type IV and Coping Type V tended to have high scores (trend, non-significant) on their selection of being bothered as an emotional response.

These five coping types, along with the fourteen canonically factored stress, resource, deficit and adjustment composite measures, plus the eight individual variables form the delineated process components of the revised theoretical approach or framework (see Figure 4). In order to obtain greater specificity from the data, the arbitrary decision was made to retain each composite measure and individual variable as a

Dimensions:

Familial:

Family resource
Family conflict
Loss of spouse

Professional:

Personnel as stress
R.N. as resource

Dimensions:

Environmental:

Environmental control
Environmental change
Giving up home

Dimensions:

Socioeconomic:

SES resource

Activity:

Activity change

Dimensions:

Physiological:

Sensory changes

Physical Functioning:

Physical dependency
Dependency-control

Cognitive Functioning:

Perceived well-being
Perceived problem solving ability
Memory changes

Affective Functioning:

Hostile-paranoid
Anxious-depressed
Behavioral deteriorated

Self Concept:

Self satisfaction

Existential:

Hope
Religious affiliation

Coping Types:

Information seekers/
worriers
Other dependent
Withdrawn
Self-oriented/discontent
Manipulative/resentful

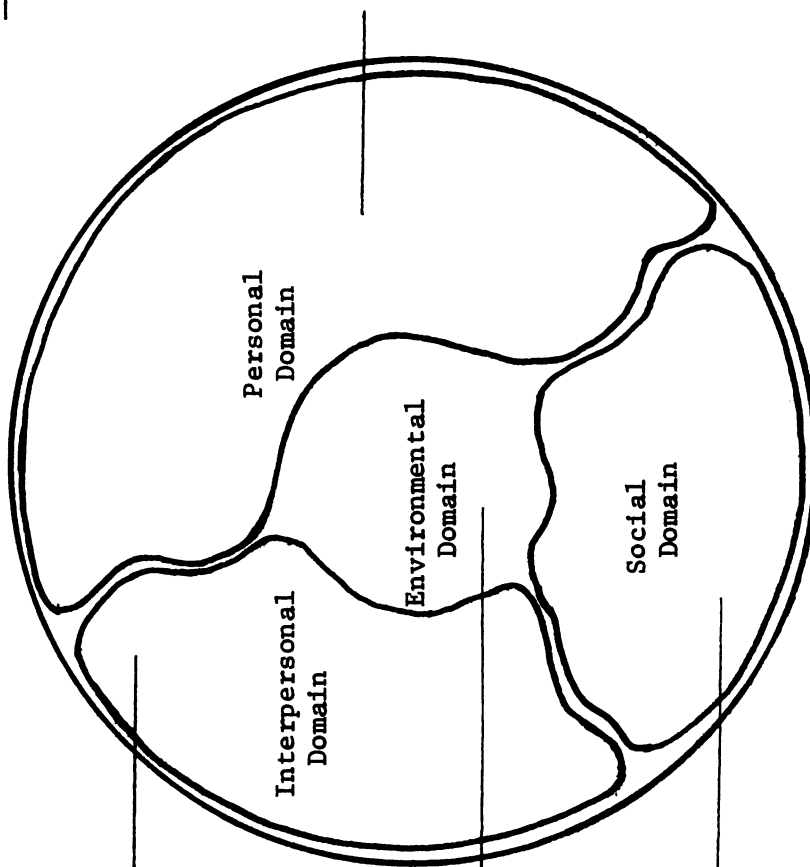


Figure 4. Revised Structure Components of the Person-Environment Model.
Change in amoeboid configuration denotes increase in number
of elements in Personal Domain, and decrease in other domains.

separate dimension under the respective major construct rather than to further combine these into second order composite measures with single stress impact and resource-deficit potential scores.

Factors Predictive of Adjustment

Once the composite variables and individual variables of import had been identified, along with the coping types, the third research question was addressed. In order to identify factors predictive of adjustment, the data were analyzed by a stepwise multiple regression procedure (SPSS, 1975; Kerlinger & Pedhazur, 1973) with the morale-adjustment composite forming the dependent variable and the resource, deficit and stress composites, and selected single variables forming the independent variables, along with age, sex, length of time in the institution and the coping types (incorporated as dummy variables). Only those variables that entered the regression equation at the .05 level of significance were retained as predictor variables. Morale-adjustment is thus predicted from a five variable regression equation with a multiple correlation (R) of .61 which is statistically significant ($p < .01$) as tested by the F value, and which accounts for 37 percent of the variance in Morale-Adjustment. The five composites which are most predictive of adjustment are high environmental control and perceived well-being, and low stress from personnel, low physical dependency, and low anxiety-depression. Results of the stepwise multiple regression analysis are reported in Table 19. The regression coefficients are in raw score form, and the beta weights are standardized. The multiple correlation resulting from the inclusion of each new variable in the equation and estimated amount of additional variance accounted for are reported in

Table 19
Stepwise Multiple Regression Analysis of the Criterion Variable
Morale-Adjustment

Variables in Equation	Regression Coefficient	Beta Weight	Multiple R	Increase in R ²
Environmental-Space Control	.32873	.33521	.41521	.17240
Perceived Well-Being	.15390	.17566	.51853	.09647
Nursing Personnel as Stress	-.19580	-.20145	.56671	.05230
Physical Dependency	-.20494	-.22342	.59011	.02707
Anxious-Depressed	-.19784	-.22674	.61117	.02530
(Constant)	-.03835			

Multiple Correlation = .61117 F (5.84) = 10.01698

R² (Accountable Variance) = .37353

p < 0.01

Standard Error Estimate = .72830

the last two columns of Table 19 (multiple R and Increase in R^2) respectively.

A longitudinal study would be required to determine any degree of rapidity in attaining adjustment, since rapidity is a function of change over time. However, inferences can be drawn from this cross-sectional study based on differences in sample means over time. In order to demonstrate some of these differences, the mean scores of morale-adjustment and its five predictor variables were examined over the four time frames from one to four months for length of time in the institution. An analysis of variance with Duncan a posteriori contrast revealed significant time differences ($p < .05$) in adjustment correlates. Trends were also noted (see Table 20). Subjects in the second time period (1-2 months) had the highest mean score of the four time frame groups on the morale-adjustment composite, and fell beyond the 95 percent confidence limits of the group mean on four of the five predictor — high on environmental control and perceived well-being, and low on physical dependency and anxiety-depression. Since these scores trend in the same direction as those of the variables previously shown to be predictive of adjustment, the inference can be made that this group was better adjusted. What cannot be determined is whether this is a function of the length of time these subjects have been in the institution or other adjustment tendencies inherent within the group.

Table 20

Standardized Group Means of Predictive Adjustment Factors
by Length of Time in Institution

Time Period	Morale- Adjustment	Space Control	Perceived Well-Being	Physical Dependency	Anxious- Depressed	Nurse Stress
0-1 mo. (N=21)	-.2928*	-.0854	-.3738*	.3562*	.1093	-.0663
1-2 mo. (N=24)	.1586	.2964*	.2318*	-.3352*	-.3580*	-.1755
2-3 mo. (N=22)	.1000	-.1536	.1073	.1585	.0832	-.0332
3-4 mo. (N=23)	.0058	-.0840	-.0035	-.1270	.1940	.2754*

Note. Contrasts determined by Duncan Multiple Range Test.

*Beyond 95 percent confidence limits for group mean.

Relationship of Predictive Adjustment Factors
and Coping Types

By time-ordering both the coping typology and the dimension composites, it was possible to study predictive relationships among these variables. Initially, all of the variables (composites, independent variables, and coping types) except those involving nursing personnel, were regressed on the variable, length of time in the institution. The assumption here is that these variables were potentially pre-institutional in origin. However, only one variable, Coping Type I (Information seekers/worriers) was predictive (negatively) of length of time in the institution. Secondly, all of the variables including length of time in the institution were then regressed in turn on each of the predictor variables of adjustment in order to identify further mediating variables. Coping Type IV (Self-oriented/discontents) was found to have a direct effect on environmental control. Three other composites -- environmental change stress, dependency-control stress, and hostile-paranoid deficit -- were found to have direct effects on at least two each of the morale-adjustment predictors. These three composites were assumed to be of institutional origin by their nature, so were placed in the model subsequent to the stimulus variable, length of time in the institution. Thus two groups of institutional variables were identified: the adjustment predictors and the variables influencing them. Figure 5 shows by means of a path diagram the direct relationships of the coping types and dimension composites to the adjustment predictors. The path coefficients are significant at the .05 level.

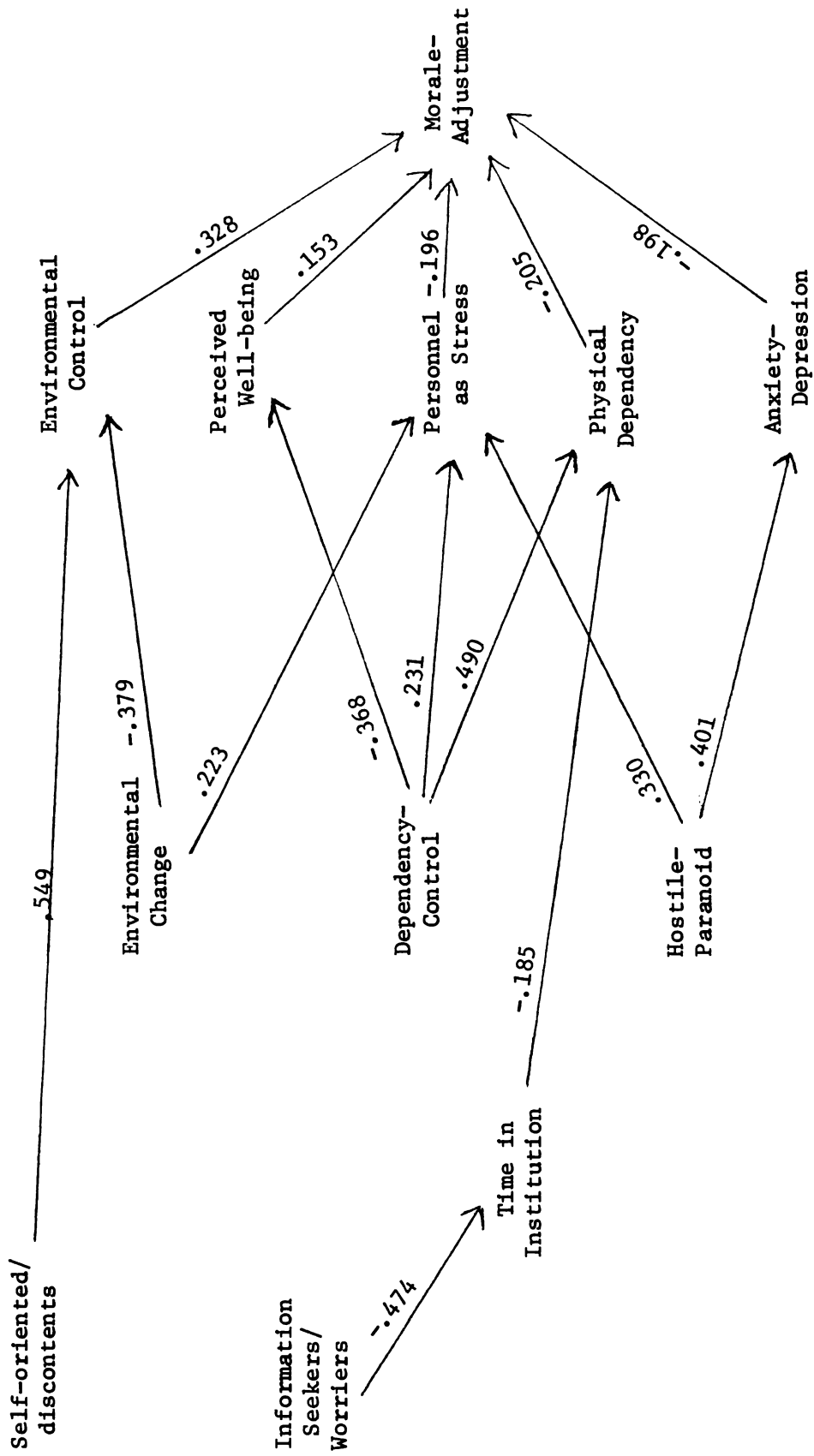


Figure 5. Predictive Relationships among Coping Types and Dimension Composites. Path coefficients are shown as 3-digit values which are significant at the .05 level.

Transitional Changes and Time in Institution

The final research question is concerned with identifying those points in time when transitional changes are most apparent in this cross-sectional data. Several graphs will be used here. An underlying assumption is that a difference will be noted in group mean scores from one time frame to another on both morale-adjustment and selected predictors. Figure 6 provides six profiles of the standardized group mean responses within four time frames on the variables predictive of adjustment. In considering the direction of the change between time periods, the profiles reveal a consistent reversal of directions from the second to the third time period as compared to the direction of change from the first to the second time period.

Subjects who had been only one month in the long-term care facility scored low on morale-adjustment, perceived well-being and environmental control, and high on anxiety-depression and dependency. These findings support an inference of disequilibrium in the initial adjustment period. However, a reversal was noted in the group scores of those institutionalized two months. These scores had characteristics of a "honeymoon" phase or over-compensation period. Here, the subjects were high on morale-adjustment, perceived well-being, and environmental control, but low on anxiety-depression and dependency as well as low on the perception of nursing personnel as stressors. A stabilizing reaction is evident by the third month, when the subject scores tended to again reverse directions from the preceding month, and regress toward the mean. These subjects in the third month of long-term care scored above the mean on dependency and anxiety-depression, and below the mean on perceived well-being and environmental control, with this profile re-

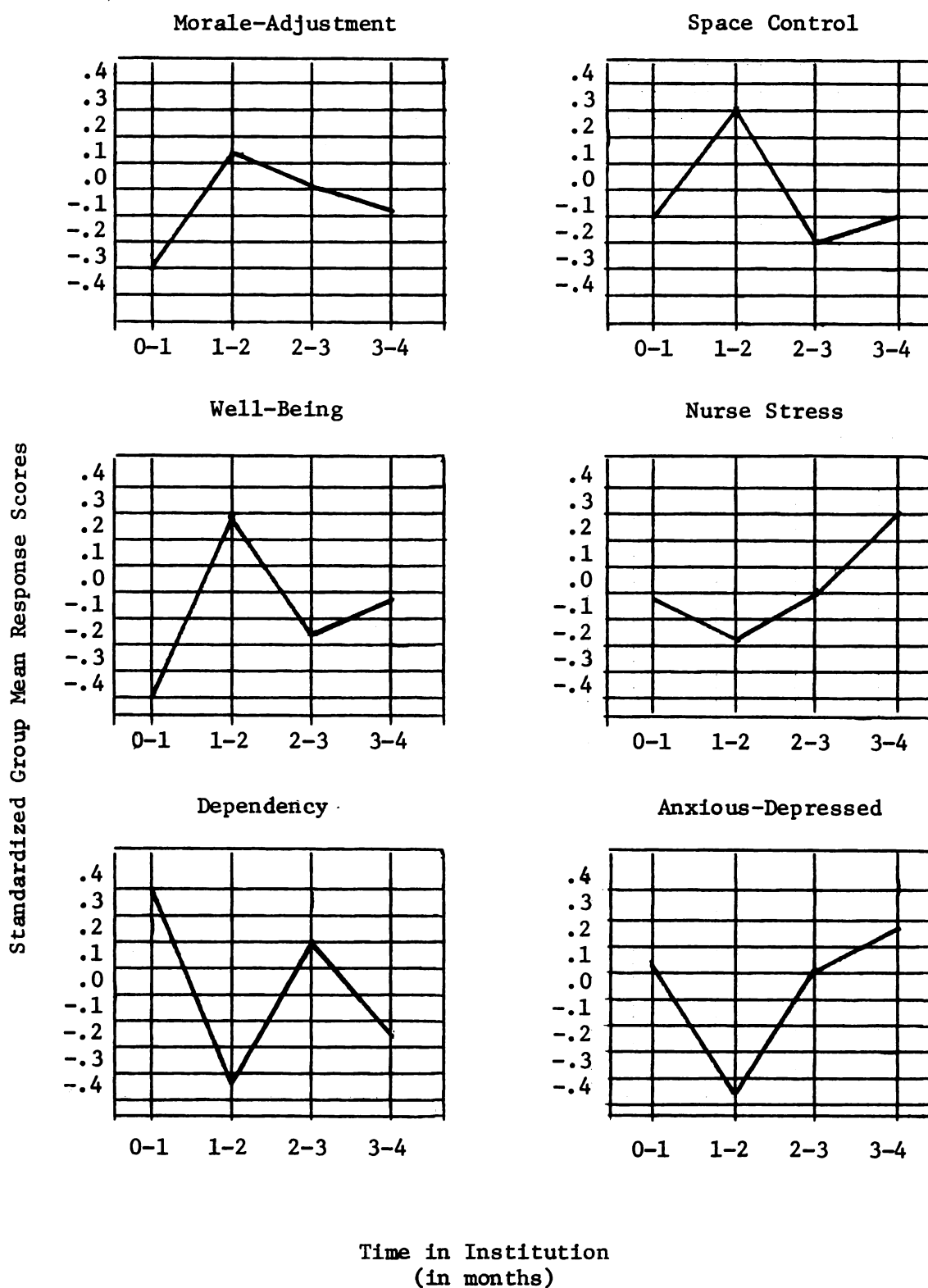


Figure 6. Profiles of standardized group mean responses for subjects institutionalized varying lengths of time on variables predictive of adjustment.

sembling that of subjects in the first month. The one score which is incongruent with these scores is the morale-adjustment score which is above the mean for this group.

The only significant change in scores between the third and fourth month was an increase in the perception of personnel as stressful for the latter group. Though non-significant, there was also an increase in anxiety-depression with a decrease in morale-adjustment also for those institutionalized in the fourth month. In view of these findings, transitional changes are most apparent for this population between the first and second month, and between the second and third month.

Age and Sex Differences: Coping Strategies and Composite Variables

Since the coping types were not found to vary by age and sex, the sample was stratified by these index variables to examine their relationship to the specific coping (actions and emotions) which formed the coping typology. Four age decades were delineated for the analysis. The relationship of age and sex to the stress, resource, deficit and adjustment variables were also examined.

Although age category comparisons on the fifteen composite variables failed to reach statistical significance, some strong trend scores seem noteworthy. The oldest age group (90-98) years tended to vary most in their scores from other age groups. This group was the only age category to score below the mean on morale-adjustment. This same group also scored low on environmental control and anxiety-depression, but high on physical dependency. The finding of a low score on anxiety-depression is compatible with the selection of the

emotion of calm in response to hypothetical stress situations by women in this age category. This selection was significantly more frequent (see Table 21) for women of this age. A similar scoring trend is also noted for men over 80 years of age.

Subjects in the oldest age decade (90-98 years) expressed less stress on change in activities they had previously enjoyed, and change in amount of social contacts. This trend would be reflected in the tendency of this age group to select inaction as a predominant strategy they would use in coping with hypothetical situations. This was a significant selection for the men over 80 years of age (covering two decades), and a strong trend for the women.

Subjects in the youngest decade (60-69 years) tended to be more stressed than other decades by family conflict. The men in this group tended to select the emotion of anger in response to situations significantly more frequently than women of this age. They also selected environmental reestablishment strategies as choices in handling situations, while the women preferred inaction and passive compliant strategies.

Women from 70 to 90 years of age tended to list loneliness as an emotional response to situations, but this tendency dropped for the over 90 decade, who listed calm as an appropriate emotion. When this latter significant finding is coupled with previously discussed findings for this oldest age decade, a disengaging trend can be inferred. Discussion of the response tendencies of the sample across situations can be found in Quayhagen and Chiriboga (1976). Depression was the major emotion identified by both men and women (over 40%) across situations. The emotions of calm and anger were also predominant, with calm

Table 21

Frequency Group Means of Selected Actions and Emotions by Age and Sex

Group	Reestablish Environment	Inaction	Passive Compliance	Angry	Calm	Lonely
60-69 years (N=19)						
Male	1.83*	0.33*	0.67	2.50*	1.17	0.50
Female	0.85*	1.46*	1.54*	0.54*	1.69	0.23*
70-79 years (N=30)						
Male	0.44*	1.00*	1.11	1.67	1.00	0.44
Female	0.76	1.38	0.67*	1.19	1.71	0.62
80-89 years (N=34)						
Male	0.88	2.38*	1.25	2.13	1.75	0.63
Female	0.58	1.58	1.23	1.15	1.31*	0.73*
90-98 years (N= 7)						
Male	0.50	3.50*	0.50	0.50	1.50	0.50
Female	1.00	2.20	1.20	1.20	3.00*	0.40

Note. Contrasts determined by Duncan Multiple Range Test.

* $p < .05$.

frequently associated with active compliance strategies and anger associated with active resistance strategies. Sex differences were also noted with women listing the former emotion of calm and men, the latter emotion of anger.

Correlations between Open-Ended and Structured Responses

Comparison was made between narrative data from the interview schedule and the measured data from the structured instruments. Responses to the first question of the interview schedule revealed varying degrees of happiness and unhappiness which subjects felt about being in the long-term institution. These happiness ratings were found to have significant positive correlations ($p < .01$) with morale-adjustment, environmental control, perceived well-being, identified comfort resources, and life meaningfulness resources. Negative correlations ($p < .001$) were found between the happiness rating and dependency-control, perceived fears, anxiety-depression, hostile-paranoid behaviors and the negative affective score relevant to perceived stress events.

Subjects who expressed fears about being in the institution had significantly high scores ($p < .001$) on anxiety-depression, dependency-control, and hostile paranoid behaviors. These subjects also tended to select anxiety as an emotional response to the coping situations. In contrast, subjects who expressed a high degree of hope scored high ($p < .001$) on life satisfaction, control, and perceived well-being, while they had low scores on anxiety-depression and dependency.

Subjects who identified some resource which gave them comfort tended to score high ($p < .001$) on perceived well-being and on the identification of a meaningful resource. These subjects were low on ex-

pressed fearfulness and angry emotions. When the nursing staff rated the happiness or adjustment level of each subject, their ratings also correlated negatively ($p < .05$) with anxious-depressive, and hostile-paranoid behaviors. In addition, the staff viewed adjustment as antithetical to physical dependency, but not to the loss of social control.

The consistency of response to similar items and in the predicted directions lends support to the reliability of the measurements. Furthermore, the correlations of the open-ended responses with the factored constructs supports the construct validity of the latter since different data collection methods are converging on the same construct. The strengthening of the reliability and validity of the constructs is one of the advantages to using multi-methods for data collection.

In summary, data analysis was aimed at identifying the relevant phenomena found in the adaptation of older adults to institutional relocation. Factor and cluster analyses were undertaken to delineate these statistically significant constructs along with coping types. Five composite variables were found to be predictive of morale-adjustment: high environmental control and perceived well-being, low stress from personnel, low physical dependency, and low anxiety-depression. Open-ended qualitative responses were categorized and quantitatively coded for correlational analysis with other measures.

IV

DISCUSSION

Findings Related to Research Questions

Factor and cluster analytic procedures were undertaken to identify the phenomena relevant to older adults in their transition from acute care to long-term care. Indicators of the relevant phenomena tended to load saliently on factors representing the abstract variables they measured. These delineated composites -- resource, deficit, stress and adjustment -- along with the eight single variables, five defined coping types, age, sex, and length of time in the institution, were assumed to be representative of the range of phenomena found in the institutional adaptation of the older subjects under study. A comparison of the initial conceptual model and the empirically validated components is found in Figure 3. However, only five of the composites were significantly predictive ($p < .05$) of morale-adjustment for these subjects although other composites and coping types had a direct effect on the five predictors, and an indirect effect on adjustment. The composites directly predictive of adjustment were: increased environmental control and perceived well-being, decreased personnel-induced stress, decreased physical dependency and decreased anxiety-depression.

It is difficult to determine why some variables directly predicted morale-adjustment and others didn't, aside from noting similarities between the predictors found in this study and those of import from other research. Even though a number of variables were named by the institu-

tionalized older adults as stresses and resources for them at this time, these variables may have been unrelated to their attainment of the level of quality daily living and functioning in the institution, equated with morale-adjustment. In this regard, the predictor variables were more intrinsic to the institutionalized client situation than were several of the non-predictors.

Comparison of the findings of this cross-sectional research with the longitudinal results of Tobin and Lieberman (1976) reveals both similarities and differences. The latter authors found the period of initial adjustment, lasting from one to two months, to be one of acute disequilibrium characterized by increased bodily preoccupation and decreased perception of self care ability. Well-being did not diminish, nor did depression and anxiety increase. At this time there was also increased life satisfaction and increased hostility in interaction.

In the present cross-sectional study, increased life satisfaction and decreased anxiety and depression were also found in the 1-2 month time frame. The physical dependency behavioral mean was highest for the group institutionalized less than one month and decreased for the group institutionalized one or two months. Here, actual behavior rather than perceptions were rated. Another difference noted between the two studies was a decrease in perceived well-being found in the cross-sectional study in the first month, with a peaking upward in the second month. In addition to differences in research design and instrumentation, another possible explanation for findings might be population differences. For the longitudinal sample the move was permanent whereas in the cross-sectional study the subjects feared permanency of the relocation and had the hope of uncertainty, as a return to the communi-

ty was a possibility, albeit an uncertain one. In addition, the longitudinal subjects were admitted from the community, rather than from the acute care facility as noted in the present study.

In the adaptation phase (3 months to one year) of the longitudinal study, Tobin and Lieberman found decreased feelings of well-being and bodily preoccupation, and an increased perception of self as hostile. The decreased feeling of well-being was also found in the group institutionalized three and four months in the present cross-sectional research. An examination of the hostile-paranoid behavior ratings for this group shows no significant difference from the other groups who were institutionalized a shorter length of time.

Studies also support the finding of environmental control as the key predictor of morale-adjustment. Schulz (1976) identified a controllable environment as one of two variables having a powerful impact on the well-being of the institutional aged client. Closely related to this finding is that of Kahana (1975) who, in a study of 120 subjects from three nursing homes found privacy along with motor control and stimulation to be important predictors of morale and self-rated satisfaction. An examination of the indicators of the physical dependency deficit from the present study discloses both motor control and stimulation aspects expressed in negative form, thus illuminating another similarity of results between the present research and that of Kahana.

Both control and/or perceived health ratings have been found to correlate highly with life satisfaction in several studies (Palmore & Luikart, 1972; Edwards & Klemmack, 1973; Wolk & Telleen, 1976; Medley, 1976). What has not been found in the present study nor in similar research is a significant correlation between staff-rated adjustment

levels and self-rated adjustment or life satisfaction. Felton and Kahana (1974) attribute this to a possible low level of criterion reliability inherent in these variables. However, in the present study significant correlations were found between staff-rated adjustment levels and the client's rating of his past life satisfaction before the illness and subsequent hospitalization. Negative correlations were found between the staff-rated adjustment levels and the four composite scores of mental and physical impairment. The latter finding agrees with that of the subjects, as their self-rated adjustment or life satisfaction was also negatively correlated with the Modified PAMIE scores. The conclusion can be drawn here that nursing personnel tend to over-rate the morale-adjustment level of the client, seeing him as more satisfied in the institution than he feels. Also, for the nursing personnel, the adjusted client is the non-ill client, physically or mentally.

In most of the studies identifying correlates of life satisfaction and/or morale, only modest amounts of the variance are accounted for by the correlates. This also holds true in this research as the initial canonical regression factoring of the adjustment scales into a single morale-adjustment composite accounted for only 50 percent of the variance, while the later regression of stress deficit and resource composites on this morale-adjustment composite accounted for only 37% of the variance. A broader range of potential correlates is needed in future research.

The Assessment Instruments

Through the data reduction methods, those assessment items or indicator variables which contributed to the reliability and validity of specific stress, resource, deficit and adjustment composites have been identified. Parsimony was also achieved through elimination of non-significant items and the construction of composite measures from the salient items. The instrument which has emerged following the data reduction measures would include a further modification of the PAMIE scale to 12 indicators of affective behavior, and eight indicators of physical dependency behavior, as found in the deficit composites. Demographic data items of significance as resources from this study were education, occupation, income level, and the number and nearness of offspring. Additional demographic data to be retained would include six index variables: age, sex, length of time in the institution, ethnic origin, marital status, and medical diagnosis.

Only 13 of the 36 Major Resource Index items appeared to warrant retention as salient indicators of resource composites or individual variables of import, with eight of the 13 indicators measuring physical, cognitive, emotional, and existential resources within the person, while the remaining five indicators measure interpersonal, social and environmental resources. Eighteen of the 40 Stress Events Questionnaire items contributed saliently to underlying stress constructs measuring dimensions within the four domains (personal, interpersonal, social and environmental). The open-ended stress-related question on the Semi-Structured Interview Schedule also yielded four significant indicators to be included in a newly constructed instrument. One of these items

measured family stress and three measured stress caused by nursing personnel. Five of the seven adjustment measures contributed to the reliability and validity of the adjustment composite so would merit retention on this basis.

In all, the 187 quantitative indicators from six instruments used in this research (Demographic Data Profile, Modified PAMIE, SEQ, MRI, Staff-rated Adjustment, and Adjustment Ladder Scales) would be reduced to 64 quantitative indicators measuring 15 composite stress, resource, deficit and adjustment variables and eight individual variables, plus six additional demographic index variables for descriptive purposes. The relevancy of such an instrument is based on the empirical nature of its derivation from analyzed subject responses. Further testing of the new instrument would be mandatory across situations and populations to determine the extent of its generalizability, and over-all reliability and validity, and its utility for nursing.

The Geriatric Coping Schedule would also be retained for future research, but would be reduced to items deemed most salient to the institutionalized subjects. With the inclusion of items more relevant to the relocation transition, a better determination may be possible of coping patterns which are facilitative and predictive of adjustment. This instrument could then be a discriminator for intervention planning.

Findings Relevant to Other Research

A comparison of the coping types or styles can be made with other research using similarly constructed instruments. Wehl (1972) devised a paper and pencil scale, the Nevada Coping Inventory (NCI), as a clinical instrument for measuring coping behavior, based on specific observ-

able coping response categories: striking out at others; denying or escaping the situation; determining cause or blame; rehearsing or elaborating a possible solution; and seeking help, support or information from others. He compared five adult groups, three pathological and two non-pathological.

None of Wehl's groups focused on the elderly, the target population for the Geriatric Coping Schedule. However, some similarities can be found between his five coping styles and the five coping types in the present study. The Other Dependent coping type was delineated by help seeking definers so is analogous to Style V in the Wehl study. The Withdrawn cluster is analogous to the Style II, in use of escape behaviors. Wehl defined this as maladaptive behavior, based on the pathology of the groups' using these behaviors. However, in the present study, these strategies are age-related rather than pathological, a point to be elaborated shortly. Information search appeared to cut across groups in the present research, although two aspects can be differentiated, that of information search from others, a help seeking maneuver, as was found for Other Dependent group, and a more self-directive style of information search which may be inferred from the definers of the Information Seekers/Worrisome and Self-Oriented/Discontent group.

In a discussion of cross-cultural research, Gutmann (1977) summarized the changing ego configurations in male aging as a shift from active mastery in the younger and middle years to one of passive and/or magical mastery in later life. For the woman, research evidence supports a reversal of the order of aging as the movement seems to be from one of more passive mastery in early life to an active mastery in later life. These same findings were also substantiated by Lowenthal,

Thurnher and Chiriboga (1975).

In the present research, only older adults were used, but since the time span included four decades, some age differences were delineated. A definite passivity is noted in the selection of coping strategies by the Withdrawn type which also had the highest mean age. However, this group was composed of both men and women. A passivity tendency was also noted for Coping Type II (Other Dependent) which had the second highest mean age and included 11 women over 80 years of age. This tendency toward passivity in coping strategies for both men and women in later years was also discussed in the preceding chapter. Significant age and sex discriminations ($p < .05$) were found in selected coping strategies rather than in coping types. These findings could infer an inverted U in the ego configuration of women across ages, that is, from passive to active to passive mastery, but the effects may be confounded by generational attitudes toward the role of women.

If the five resource composites are combined into a single resource score, and the four deficit composites into a single deficit score, a balance typology can then be constructed and examined in relation to morale-adjustment scores. A comparison can then be made between this balance typology of the combined composite measures and the findings of Lowenthal and Chiriboga (1973) in regard to both the critical indicators and their balance typology model. The resources in the Lowenthal and Chiriboga study were qualities relevant to health and well-being, with the deficits indicative of pathology. Both categories were derived from interview ratings. These researchers found the happiest group to be the subjects with moderate resources and few deficits. The second happiest group had many resources and deficits, while the

third happiest group had few resources and few deficits. In contrast, a breakdown of the subjects in the present study on their morale-adjustment scores by resource and deficit scores showed the group with the highest mean score on morale-adjustment to have high resource and low deficit scores. The group with the second highest mean score on morale-adjustment had only moderate resource and moderate-to-low deficit scores. The third group with a moderate morale-adjustment mean score had low resource and moderate-to-low deficit scores. The differences in the measures used in the two studies could account for the differences found here.

A further breakdown of the subjects by resources and deficits and age showed in this study that the oldest age decade had the lowest mean deficit score. This finding is in contrast to those of Chiriboga and Lowenthal (1974) who found a slight decrease in deficits for the older respondents, and resources were the same for both younger and older subjects. However, none of the subjects in the latter study were as old as those in the present research.

Instrument Comparison

It seems feasible at this time to not only compare substantive findings to other research, but also to compare the statistical outcomes of one of the modified instruments with those of the parent tool. Therefore, a comparison will be made between the factor structure of the 20 items from the Modified PAMIE and the factor structure of the original PAMIE scale of Gurel, Linn and Linn (1972). Two factors (anxious-depressed and behaviorally deteriorated) had the same indicators as the original scale, though the number was fewer and had higher

loadings in the Modified PAMIE. The other two factors loaded with indicators from more than one dimension as identified in the original scale. The hostile-paranoid deficit composite of the Modified PAMIE had indicators from both the belligerent/irritable and the paranoid/suspicious factors in the PAMIE. The physical dependency deficit found in the present study corresponds to the second order factor of physically infirm as delineated in the Gurel, Linn and Linn research. In view of the fact that reliability and validity estimates were obtained for the factors in both instruments, the question of differences in at least one of the underlying constructs must be raised. An additional measure would be helpful in resolving this dilemma.

Relevancy of Research to Nursing

The intent of this research was to develop for nursing a framework and instruments for identifying significant factors in the relocation of older adults from acute care institutions to long term care facilities. Inherent in this statement is the assumption that the identified framework and concomitant instruments will have both relevancy and utility for nursing. Primarily relevant today is the concept of quality care as linked with patient or client outcomes. According to McClure (1976) very little research data is available to support whether or not nursing makes a difference in those outcomes. The present research was concerned with one specific outcome following a specific transition, the adjustment of the client to the long term care facility following relocation from an acute care facility.

Although the problem of relocation and its deleterious effects have long been the concern of gerontologists and governmental agencies, the

search for nursing's role in this issue by nurse researchers has been limited. In order to determine the role of nursing in the attainment of a rapid adjustment for the client, nursing needs a framework and instrumentation for assessing the adjustment and the intervening factors as well. Once these factors have been delineated as in the present study, a determination must be made of which factors are within the realm of nursing to enhance, inhibit or maintain. Therefore, if the resultant theoretical framework from the present study provides nursing with a means for identifying factors as foci for nursing intervention, then it can be said to have relevancy for nursing.

All five of the intervening variables (environmental control, well-being, personnel-induced stress, physical dependency and anxiety-depression) which are predictive of morale-adjustment for the population under study, are indeed within the parameters of nursing, though with varying qualifications. A traditional goal for nursing has been movement of the client from physical dependency to a more independent status. Intervention modes for anxiety and depression are well documented within psychiatric nursing literature. Less well documented are intervention modes for the support or enhancement of perceived well-being. A major question here would be the degree of entrenchment of this psychological self-perception, that is, the issue of self concept as a trait versus self image as a state. Also of significance here is the uncertainty of the underlying concept which is being measured by the indicators of the abstraction, perceived well-being. The use of a marker variable (i.e., standardized instrument) would be beneficial in future research using the conceptual framework of this study not only for this dimension but also for the other emerged dimensions.

One dimension which has not in the past been a prime target for nursing interventions is environmental control, although research into the area of privacy has been undertaken (Schuster, 1975). The fifth dimension, nursing personnel stress, has been researched tangentially from the perspectives of client satisfaction with nursing actions (Abdellah and Levine, 1957; Bonney and Rothberg, 1963), nursing attitudes toward various client populations (McCourt, 1963; Brown et al, 1967; Kahana & Coe, 1969), and perceptual differences between clients and nurses (Fagerhaugh, 1974; Weiner, 1975). But despite the proliferation of governmental findings on nursing care abuses (Moss, 1974), the nursing personnel stress dimension as delineated here has not been found in previous conceptual frameworks for nursing. Occasionally, it is couched within a nurse-client interaction concept or an institutional setting concept. But the legitimate need for a dimension of personnel as resource or stress within a theoretical framework for nursing based on adjustment predictors is quite evident.

From examination of these adjustment outcome predictors, the role of nursing is indisputable. Thus the conclusion can be drawn of relevancy of this research for nursing.

According to Stetler and Marram (1976), there are three decision phases for determining the utility of research findings for nursing practice: a validation phase for evaluating design and instrumentation merits; a comparative evaluation phase of applicability to specific groups and situations; and a decision-making phase to determine application logistics. The present research has addressed the first two phases, but the recommendation is made by the investigator that further testing of the emerged instruments be undertaken before ap-

plication to practice.

Implications of Findings for Policy Making and Service

Two of the five major predictors of adjustment which have direct implications for policy making and service are environmental control and nursing personnel-induced stress. Although the importance of these variables was justified from data of subjects over 60 years of age, their implications are not limited to any one age category. However, in order to avoid the categorical-versus-generic bind of public policy in the past (Kerschner & Hirschfield, 1975), implications will be confined to a specific age-oriented focus.

The nursing personnel stress variable was abstracted from four indicators of stress induced by nursing personnel (both licensed and non-licensed) in the long-term care facilities: personnel inefficiency, negative personnel attitudes, personnel cruelty, and personnel crudity. Personnel inefficiency was categorized from descriptions of nursing care. Of most distress to the clients (38%) were those acts of inefficiency involving toileting, which were degrading to the human dignity of the client. These included failure by personnel to answer lights promptly, resulting in toileting accidents; failure to remove used receptacles causing pain and unpleasant odors; and careless removal of receptacles resulting in unnecessary soiling of beds and floors. Some of the other inefficient acts which distressed the clients were wrong medications given to them, lack of bath assistance on specified days, beds unmade for hours, and failure of personnel to take time to listen to requests.

The negativeness of personnel attitudes was perceived by the clients (29%) from personnel actions which were interpreted as authoritative, unsympathetic, unfriendly, and uninterested in the client. Personnel cruelty was identified by 20 percent of the clients as actions of rough treatment such as pushing, pulling, jerking and shoving, slapping of client's hands or hitting of clients with objects, unplugging of call lights which prevented clients from seeking help when needed, and abuse of a sexual nature of clients who could not complain, but witnessed by the subjects in this study.

The indicator, personnel crudity, was categorized from client responses (12%) which focused more on the personality of the personnel, than on actions per se. Causes of distress to the clients centered around language, dress and action. Clients found language to be abusive if crude, filthy or discourteous. They disliked nicknames, and resented personnel shouting about clients in the halls, or gossiping about them or other personnel. In regard to dress, clients expressed feelings of being disrespected by personnel who neglected their personal appearance when on duty. Not infrequently clients described the actions of the nursing personnel as unpolished and occasionally seductive. Several of the clients equated the crude behaviors with socio-cultural or socioeconomic status differences between staff and clients.

Many of these abuses could be corrected by inservice education, provided the level of personnel hired has the intellectual and emotional capacity to absorb the content. Two foci for inservice education here would be the normal and abnormal aging processes -- to understand the physiological needs and psychological and socio-cultural influences affecting the older client -- and employee sensitization training. The

latter would place the employee at the mercy of the other personnel by institutionalizing him for a specified period of time (i.e., 24 hrs.). The goal of this training is to foster empathic understanding of the clients, and to respond to them as "dignified human beings rather than objects incidental to employment" (Moss, 1975).

The variable, environmental control, was abstracted from indicators of the need for privacy, space for personal use, and safety for personal things. These indicators have implications for institutional policies governing client surveillance versus sanctioning of closed doors, availability of space and recognition of territorial rights, freedom from fear of theft, and the provision of locked cabinets for personal belongings, freedom from intrusive questioning and invasion of personal space without client consent. Inservice education on the effects of environment on behavior could provide personnel with an understanding of key concepts. Policies at the institutional level need to be formulated and enforced to insure maximum control for the client over his institutional environment. The provision of private rooms in which the previous environment and life style of the client could be optimally reconstructed within the institution would lessen the relocation shock by maximizing the person-environment fit. Financial feasibility is a deterrent.

The quality of inservice programs proposed for both personnel stress and environmental control would require appropriately educated personnel with gerontological backgrounds as instructors, and a screening of all levels of personnel for intellectual and emotional capabilities to care for the older client. It also requires adequate staffing patterns to allow release of personnel for inservice and other training.

In short, it requires money, that commodity which is affected by public policy and its value systems. Even as this research is being completed, controversy is threatening over potential cutbacks in Medicaid payments for older clients. The outcome of lower income supplements to long-term facilities will reverberate to personnel paychecks, and the vicious cycle of substandard hiring practices will continue.

On the less dismal side, government legislation of quality control in long-term facilities has resulted in creation of the professional standards review organizations, with standards of care and outcome criteria established for clients, and peer review of personnel by personnel (medical, nursing and other disciplines). Utilization boards have also been established to review federal and state funding for service needs of clients. Ombudsmen and advocates to protect the rights of clients are now active. All of these measures are helping to insure surface quality of care based on physiological/functional improvement of clients. What cannot be legislated is the quality of interactions which has resulted in major stresses to clients, as these interactions affect the tenor of daily living and psycho-social functioning. Changes must come from within the personnel ranks, through stricter hiring policies, better pay, and quality inservice education, leading to motivated service and quality care.

If societal values can be altered by education of the public to the saliency of these issues, then public demand could force changes in this regard for those who must be institutionalized. Alternatives to institutional care must also continue to be investigated, with the channeling of federal and state funds into reimbursement for home health care and other supportive services for those who with such ser-

vices could escape the trauma of long-term institutionalization.

Future Research Implications

In future research, the investigator would alter the present structure of the person-environment model. Of question is whether the interpersonal domain is a system in its own right or a subsystem of the social domain. The term interpersonal implies an interface between persons, that is, between the person and another in his social network. Hence it seems feasible to consider including in the social domain the primary relationships now delineated in the interpersonal domain. The dimensions of these combined elements would then form a social continuum of primary and secondary relationships. The use of broader social indicators might also provide information of value even for the institutionalized groups. Based on the findings of this study, the personal domain would not necessarily be altered, since it appeared to be inclusive of major dimensions relevant to the population. The environmental domain would be altered in accordance with the findings of one dimension vs three as originally conceptualized, but other dimensions found in environmental psychology should also be explored as appropriate for this domain.

There are several ambiguities which linger in regard to the process components of the model. The separation of pre-institutional and institutional stresses, resources, and deficits is artificial and unrealistic in view of the fact that the same stress event or resource or deficit can occur for the same person both pre-institutionally and during the institutional stay, yet both events have an impact on the institutionalized client. Likewise, for one person, the event may be of

pre-institutional occurrence, but for another it may occur within the institution and for both subjects be equally distressing during the hospitalization. Therefore, the pre-institutional and institutional categories are not mutually exclusive, which limits the rigid assignment of constructs to antecedent or intervening variable status for the purpose of the model. But allowing for ambiguous variables within the model makes it much more realistic for nursing, since it reflects actuality.

Findings in regard to the instruments also have implications for future research. Items composing the fifteen composite measures are deemed worthy of retention until further tested. Therefore, for future research an instrument is envisioned which would be composed of the items from the fifteen composites as well as the eight items which loaded singly but saliently on factors, and so were given the status of variables. Selected index variables would also be added to the instrument for demographic purposes. For this newly constructed instrument both test-retest reliability as well as factor analytic reliability coefficients would be needed. The use of criterion or marker variables would help establish construct validity for the composite variables, and clarify any lingering ambiguous interpretations. Also, Comrey (1973) suggests predictive factoring for supporting constructs.

The Geriatric Coping Schedule, too, holds promise for future research. With the elucidation of coping patterns and their influence on other variables which effect adjustment, it is possible to plan interventions either based on these patterns as they presently are or based on alterations of these patterns for more effective adjustment. Further testing is needed here to establish the usefulness of the Geriatric Cop-

ing Schedule in this regard. Research is currently underway to revise the schedule for greater client applicability which may entail selection of some different hypothetical situations which are more relevant across differing populations.

The final instrument suggested for retention in future research would be the Semi-Structured Interview Schedule, with revisions aligning the questions more in accord with findings from this research. The retention of an open-ended questionnaire allows for a continual incorporation of grounded input into subsequent framework and instrument revisions. The grounding of the present research in subject responses from initial piloting to the completed study has been perceived as a major asset and means of retaining relevancy. Once the validity of the three instruments suggested above can be further determined, the question of application to nursing practice must again be addressed, and can be evaluated through use of this framework and instruments across populations and situations.

The methodological issue of experimenter effects should also be taken into account in future research. Rosenthal (1976) suggests replication with a variability of data collectors to add robustness to the findings. A subdivision of the experiment among several experimenters would also help reduce potential bias effects, and would be a possibility for this research if it is incorporated into a larger project.

In summary, findings from this cross-sectional research endeavor were related to findings from other studies. Possible reasons for discrepant findings were listed with reference to limitation of the study where applicable. Items to be retained in future research were discussed, as well as methods for further validation. The relevancy of

this research for nursing was supported. Implications from two of the major predictors of adjustment -- environmental-space control and nursing personnel-induced stress -- were delineated for policy making and service. Implications for future research focused on both theoretical and methodological issues.

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APPENDIX A
OPERATIONAL DEFINITIONS OF CROSS-CLASSIFIED COMPONENTS

OPERATIONAL DEFINITIONS OF CROSS-CLASSIFIED COMPONENTS

Stress Impact is defined as the magnitude of the cognitive and affective impingement of perceived and presumed stress events upon the four domains as measured by the Stress Events Questionnaire and Item 10 of the Semi-Structured Interview. Indicators for measuring stress within each of the domains are as follows:

Personal Stress

Physiological indicators: changes in physiologically-based acts: eating habits, sleeping, vision, hearing.

Physical functioning indicators: changes in physical activities, sexual behavior, self care ability and work ability.

Cognitive functioning indicators: changes in memory and thought processes, changes in ability to control own decisions.

Self Concept indicators: degree of awareness of change in physical appearance.

Interpersonal Stress

Familial indicators: degree of stress perceived from loss of spouse or family member; degree of change perceived in family concern and health of family members.

Friendship indicators: level of stress from loss of close friend; degree of stress from change in social contacts, from conflicts with others, and from roommate problems; degree of positive stress from formation of new friendships.

Professional indicators: degree of perceived stress from change in concern of physicians and/or nursing personnel.

Social Stress

Socioeconomic indicators: degree of stress from change in work responsibilities, work hours or income level; degree of stress from quitting job or retiring.

Activity indicators: degree of stress from change in social and self-selected activities.

Social control indicators: degree of stress from loss of driver's license.

Environmental Stress

Personal space indicators: degree of stress from change in personal space.

Privacy indicators: degree of stress from change in privacy.

Object support indicators: degree of stress from loss of pets or other personally valued objects.

Resource Potential is defined as the intensity of personal strengths and the presence and magnitude of environmental supports within the four domains as measured by the Major Resources Index, selected demographic variables from the Demographic Data Profile and Item 3 of the Semi-Structured Interview. Indicators for measuring the resources within each of the domains are as follows:

Personal Resources

Physiological indicator: degree of perceived level of physical energy.

Physical indicator: level of ambulation

Cognitive functioning indicators: level of various cognitive abilities perceived as resources: problem solving, general intelligence level, ability to generate creative ideas, and a sense of humor.

Self concept indicators: degree of satisfaction with self and with past life attainments; degree of perceived value to oneself; self-rating of perceived self image (positive or negative).

Affective indicators: level of perceived degree of emotional strength.

Existential indicators: level of perceived resources: hope, peace of mind, faith or belief system; degree to which life is perceived as meaningful.

Interpersonal Resources

Familial indicators: marital status; number of living children and children in close proximity; composition of household; degree of perceived help from family.

Friendship indicator: perceived resource level of close friends, acquaintances, church affiliates, work colleagues and patient advocates.

Professional indicators: perceived resources level of physicians and nursing personnel.

Social Resources

Socioeconomic indicators: occupational, educational and financial levels; number of years retired; type of residence financing; resource level of financial status.

Organizational indicators: perceived degree of support from health-related agencies, social service agency, and organized religion.

Activity indicators: degree of perceived influence of institutional rules and regulations, and daily routines.

Environmental Resources

Personal space indicators: perceived resource level of existing personal space.

Privacy indicators: perceived resource level of amount of privacy in present situation.

Object support indicators: perceived resource level of environmental objects: radio, television, books, newspapers, prosthetics, safety devices, lighting.

Deficit Potential is defined as the intensity of personal vulnerabilities and the presence and magnitude of environmental inhibitors within the four domains as measured by the Modified Physical and Mental Impairment-of-Function Evaluation, selected demographic data from the Demographic Data Profile and Item 4 of the Semi-Structured Interview. Indicators for measuring the deficits within each of the domains are as follows:

Personal Deficits

Physiological indicators: severity of illness; degree of sensori-motor impairment.

Physical functioning indicators: degree of physical dependency vs self care.

Affective functioning indicators: objectively observed changes in affective behaviors as evidenced by withdrawal, apathy, paranoia, suspiciousness, belligerence, irritability, anxiety, depression, dissatisfaction and behavioral deterioration.

Interpersonal, Social and Environmental Deficits were not directly measured except through Item 4 of the Semi-Structured Interview. They were inferred from the Major Resources Index by the number of missing resources which were perceived by the client as necessary and/or desired.

Coping Response Patterns are measured by action and emotion responses to hypothetical situations involving the personal, interpersonal, social and environmental domains, as measured by the Geriatric Coping Schedule and Item 5 of the Semi-Structured Interview.

APPENDIX B
INSTRUMENTS

DEMOGRAPHIC DATA PROFILE

Age: _____ Sex: male _____; female _____.

Ethnic origin: First language: English _____; other _____.

Marital status: single _____; married _____; divorced _____;
widowed _____; other _____.

Number of living sons and daughters _____; number of children within a
day's traveling distance _____.

Educational level: grade _____; high _____; trade _____; associate
degree _____; Baccalaureate _____; Masters _____; Doctorate _____.

Religious affiliation: Jewish _____; Catholic _____; Protestant _____.
other _____; none _____.

Main occupation during work years: _____

Date of last employment _____

Present income level: (refers to total family income)

Less than \$3000. _____	\$10,000. to \$14,999. _____
\$3000. to \$4999. _____	\$15,000. to \$19,999. _____
\$5000. to \$6999. _____	\$20,000. to \$24,999. _____
\$7000. to \$9999. _____	\$25,000. or more _____

Type of residence: Own _____; Rent _____; Other _____.

Hotel _____ House _____(size)

Rooming House _____ Institution _____

Apartment _____(size) _____ Other _____

Composition of household: _____
(membership)

Major decision maker in residence: Self _____; Other _____

Medical diagnosis: _____

(Validation) _____

Previous hospitalizations: Number _____

Types _____

Length of present hospitalization _____

SEMI-STRUCTURED INTERVIEW

1. How do you feel about being here in the convalescent hospital?
2. What fears or worries do you have in regard to being here?
3. What assets within yourself, or persons or things outside yourself, are helping you most in adjusting to this convalescent hospital?
4. What personal assets, or persons, or things are hindering you from adjusting?
5. How did you cope with coming into this situation, the convalescent hospital? What strategies did you use to help you adjust here?
6. What decisions can you still make for yourself here that are important to you?
7. What other decisions would you like to make, but are unable to?
8. What gives you the most comfort at this time?
9. What do you feel is most meaningful for you at this time?
10. What do you see as major stresses or problems for you at this time?

STRESS EVENTS QUESTIONNAIRE

(Modified LEQ)

Instructions:

Here is a list of events which have sometimes happened to others similar to you, either shortly before they were hospitalized or in the hospital. Which of these events has happened to you?

PERSONAL EVENTS

1. Major change in eating habits _____
2. Major change in sleeping habits _____
3. Major change in physical appearance _____
4. Change in vision or hearing _____
5. Change in memory or thinking processes _____
6. Change in the level of physical activity _____
7. Change in sexual behavior _____
8. Change in your ability to take care of yourself _____
9. Change in your ability to control your own life _____
10. Personal injury or illness _____
11. Lack of information regarding illness or treatment _____

EVENTS CONCERNING WORK

12. Change in responsibilities at work
13. Change in working hours or conditions
14. Change in your ability to work
15. Quitting your job
16. Retirement from work
17. Major change in financial situation
18. Loss of driver's license

EVENTS CONCERNING PHYSICAL ENVIRONMENT

19. A move of your home or living situation to another town or neighborhood
-
20. Giving up your home
21. Change in your living situation (type of living quarters and household composition)

GERIATRIC COPING SCHEDULE*

Instructions: Now I am going to read you a series of stories dealing with situations people find themselves in. After each story, I want you to tell me how you would have felt and what you would have done. I will then show you a series of words, and ask you to select the one which most nearly describes how you feel about the situation. (List of Emotions: disappointed, depressed, angry, resentful, worried, fearful, calm, frustrated, bothered, helpless, lonely, anxious, defeated, humiliated, uneasy, worthless, deadened, guilty, bored, jealous, hopeless, hateful, dissatisfied, cold.)

1. You are watching your favorite TV show, when your roommate comes in and changes the station.
 - a. What would you do?
 - b. How would you feel?
 - c. Selected emotion:
2. You have found keeping money in the bank inconvenient. Therefore, you keep all of your money in the house. One day there is a fire, and you lose your clothing, furniture, and all of your money.
 - a. What would you do?
 - b. How would you feel?
 - c. Selected emotion:
3. You have always prided yourself on your ability to handle your own affairs. Your family has recently decided to take over your financial affairs because they feel you are unable to do so.
 - a. What would you do?
 - b. How would you feel?
 - c. Selected emotion:
4. For many years Ann has been a close friend of yours. You have always trusted Ann, but yesterday another friend told you that Ann has been spreading rumors about you.
 - a. What would you do?
 - b. How would you feel?
 - c. Selected emotion:

*Compiled by D. Chiriboga, M. Quayhagen, and L. Cutler, 1975.

5. You are very poor. You have lived in the same house for over 25 years. Recently the neighborhood has been going downhill. There have been several robberies in the houses near by in the past week. Yesterday, the house next door was robbed.
 - a. What would you do?
 - b. How would you feel?
 - c. Selected emotion:
6. You have dangerously high blood pressure. To avoid complications, the doctor has prescribed medicine which makes you feel nauseous and dizzy.
 - a. What would you do?
 - b. How would you feel?
 - c. Selected emotion:
7. You have always enjoyed long walks by yourself. Recently, you have become lost on several occasions. Your family now insists that you not go out alone.
 - a. What would you do?
 - b. How would you feel?
 - c. Selected emotion:
8. You had to go to the hospital for treatment of a health problem. All of your friends promised to come visit you, but it's been one week now, and no one has shown up.
 - a. What would you do?
 - b. How would you feel?
 - c. Selected emotion:
9. You have just come from a visit with your eye doctor. The doctor told you that you have a progressive eye disease and will be totally blind in a year.
 - a. What would you do?
 - b. How would you feel?
 - c. Selected emotion:

10. You were forced to move since you could no longer pay the high cost of living in the city. You have moved so far away that you are unable to visit old friends and relatives.
- What would you do?
 - How would you feel?
 - Selected emotion:
11. You were recently in an auto accident in which your face was disfigured. You have just learned that plastic surgery will not be completely successful.
- What would you do?
 - How would you feel?
 - Selected emotion:
12. You have been staying at a convalescent hospital. You have a room to yourself, a room you like very much. One day the supervising nurse comes in and tells you that you will have to move to a semi-private room. You protest, but the nurse says that the decision has been made and walks away.
- What would you do?
 - How would you feel?
 - Selected emotion:

Instructions: Up to now we have been talking about specific situations, and how you might deal with them. Now I'd like to know how you think you deal with problems in general. I'm going to read you a list of ways in which people commonly deal with problems. For each one, please tell me if you think you always use it, sometimes use it, rarely use it, or never use it in handling your problems.

13. When dealing with problems in general, do you**

	Always	Sometimes	Rarely	Never
a. Try to find out more about the situation; seek additional information				
b. Try to see the humorous aspect of the situation				
c. Talk with others about the problem				
d. Don't worry about it. Everything will probably work out fine				

**Items from Coping Scale of R. Moos, 1969.

	Always	Sometimes	Rarely	Never
e. Become involved in other activities in order to keep your mind off the problem _____				
f. Take some positive concerted action on the basis of your present understanding of the situation _____				
g. Be prepared to expect the worst _____				
h. Make several alternative plans for handling the situation; after all you never know what might work. _____				
i. Draw upon your past experiences; perhaps you've been in a similar situation before _____				
j. Try to reduce the tension by drinking, eating, smoking, exercising _____				
k. Try to prepare for an event by going over it in your mind _____				

14. What other strategies or techniques do you use in dealing with stresses or distressful situations?

STRESS RESPONSE SCALING LADDER

Instructions: I am now going to show you a picture of a ladder, and ask you to tell me where you would place yourself in regard to specific questions I ask you.

1. Some people feel very tense and upset most of the time, and are very anxious and worried, but don't know what over. Other people have very little anxiety, rarely get upset, and refuse to worry unless they have a definite thing to worry about. If the very anxious people are at the top of the ladder, and the people who are only slightly anxious are at the bottom of the ladder, where would you place yourself right now when you think about your present situation? _____

Where would you place yourself generally in terms of how anxious you tend to be? _____

Very Anxious

10
9
8
7
6
5
4
3
2
1

Slightly Anxious

2. Some people have a very good image of themselves, feel good about themselves, and in general, are quite satisfied with themselves as they are. Other people have a poor image of themselves, are dissatisfied with themselves, and wish they were different. If the people who have a good image of themselves are at the top of the ladder, and those with a poor self image are at the bottom, where would you place yourself right now in terms of how you feel about yourself? _____

Where would you place yourself in terms of how you generally feel about yourself? _____

Very Good Image

10
9
8
7
6
5
4
3
2
1

Poor Image

3. Some people see themselves as very seriously ill, the most seriously ill they have ever been. Other people see themselves as only slightly ill, with only a minor sickness. Suppose the people who see themselves as seriously ill are at the top of the ladder, and the people who see themselves as only slightly ill are at the bottom of the ladder, where would you place yourself in terms of how seriously ill you see yourself at this present time? _____

Where would you place yourself in terms of how ill you generally see yourself, that is, of how ill you would have seen yourself before this present hospitalization? _____

Seriously Ill

10
9
8
7
6
5
4
3
2
1

Slightly Ill

4. Some people seem to be quite happy and satisfied with their situation, while others seem quite unhappy and dissatisfied. Suppose a person who is entirely satisfied with his living situation, that is, has high satisfaction, is at the top of the ladder, and a person who is extremely dissatisfied with his situation, or has low satisfaction, is at the bottom of the ladder. Where would you place yourself on the ladder in terms of how much satisfaction you have with your present situation? _____

High Satisfaction

10
9
8
7
6
5
4
3
2
1

Where would you place yourself in terms of how satisfied you generally are? _____

Low Satisfaction

5. Some people see themselves as having very good health, while other people see themselves as being in poor health. If the people who see themselves as being in very good health are at the top of the ladder, and those who see themselves in poor health are at the bottom of the ladder, where would you place yourself in terms of how healthy you see yourself at the present time? _____

Very Good Health

10
9
8
7
6
5
4
3
2
1

Where would you place yourself in terms of how healthy you generally are? _____

Poor Health

6. Some people feel that they have complete control over their lives and their own decisions. Other people feel they have no control over their own decisions nor themselves, but are controlled by other persons or institutions. Suppose the people who feel they have complete control over their own decisions and lives are at the top of the ladder, and the people who feel they have no control over their decisions, but are controlled by outside forces, such as the institution, are at the bottom of the ladder. Where would you place yourself in terms of the amount of control you feel you have at the present time in this situation? _____

Complete Control

10
9
8
7
6
5
4
3
2
1

No Control

Where would you place yourself in terms of the amount of control you generally see yourself as having? _____

MODIFIED
PHYSICAL AND MENTAL IMPAIRMENT-OF-FUNCTION EVALUATION

(PAMIE Scale)*

Instructions: In judging the patient's physical capabilities and psycho-social behaviors, please rate the patient for a period of several days on what he actually does, rather than on what he is capable of doing.

Which of the following best fits the patient?

- ☐ Has no difficulty walking.
- ☐ Slight difficulty in walking, but manages, may use cane.
- ☐ Great difficulty in walking, but manages, using crutches, etc.
- ☐ Uses wheelchair to get around.
- ☐ Uses wheelchair pushed by others.
- ☐ Restricted to chair, mostly or completely bedfast.

Which of the following best fits the patient?

- ☐ In bed all or most of day.
- ☐ More of the waking day in bed than out of bed.
- ☐ About half of the waking day in bed, about half out of bed.
- ☐ More of the waking day out of bed than in bed.
- ☐ Out of bed all or almost all day.

	Always	Sometimes	Never
Manages own tray without help _____			
Walks flight of steps without help _____			
Has one or both hands/arms missing or paralyzed _____			
Has one or both feet/legs missing or paralyzed _____			
Has much difficulty in speaking _____			
Dresses without help or supervision _____			
Is dressed by someone _____			
Uses the toilet without help or supervision _____			
Is shaved by someone else (or groomed) _____			
Bathes without help or supervision _____			
Grooms without help or supervision _____			
Wets or soils once a week or more _____			
Decides things for self, like wearing apparel, etc. _____			
Brushes teeth, cleans nails without help or urging _____			
Eats without supervision or encouragement _____			
Is IV or tube fed once a week or more _____			
When needed, takes medication by mouth _____			
Is given bed baths _____			
Conforms to hospital routine and treatment regime _____			
Is toileted by catheter and/or enema _____			
Knows who he is and where he is _____			

*Gurel, Linn & Linn, 1972

	Always	Sometimes	Never
Can't keep mind on conversation _____			
Is confused _____			
Doesn't make sense when talking _____			
Wanders off if not closely watched _____			
Sometimes talks out loud to self _____			
Has trouble remembering things _____			
Most people would think him a mental patient _____			
Acts as if lost in a dream _____			
Seems unusually restless _____			
Takes clothes off at wrong time or place _____			
Needs constant safety supervision (smoking, self-injury) _____			
Is blue and depressed (states this) _____			
Looks worried and sad _____			
Seems unhappy _____			
Is easily upset when little things go wrong _____			
Cries for no obvious reason _____			
Gripes and complains a lot _____			
Keeps to himself _____			
When left alone, sits and does nothing _____			
Isn't interested in much of anything _____			
Chats with other patients _____			
Ignores what goes on around him _____			
Looks sloppy _____			
Is messy in eating _____			
Leaves clothes unbuttoned _____			
Looks especially neat and clean _____			
Is noisy; talks very loudly _____			
Is irritable and grouchy _____			
Objects or argues before doing what he is told _____			
Resents being asked to do things _____			
Gives sarcastic answers _____			
Gives the staff a "hard time" _____			
Resists when asked to do things _____			
Yells at people when he's angry or upset _____			
Acts as though he has a chip on the shoulder _____			
Is often demanding _____			
Gripes and complains a lot _____			
Swears; uses vulgar or obscene words _____			
Is cooperative _____			
Says he is going to hit people _____			
Says other people dislike or hate him _____			
Says he's being mistreated or getting a raw deal _____			
Says others are jealous of him _____			
Blames other people for his difficulty _____			
Says he's not getting good care and treatment _____			
Is distrustful and suspicious _____			
Eats a regular diet _____			
Is deaf or practically deaf even with a hearing aid _____			
Has hit someone or been in a fight recently _____			

	Always	Sometimes	Never
Makes sexually suggestive remarks or gestures _____			
Drinks or has been drunk on ward _____			
Says he would like to leave the hospital _____			
Is blind or practically so even with glasses _____			

STAFF-RATED ADJUSTMENT SCALE

Instructions: Some people seem quite happy and satisfied with their lives in the convalescent hospital. Others seem quite unhappy and dissatisfied with having to be in this situation. If the person whose general adjustment is entirely satisfactory were given a score of 10 on the rating scale below, and the person whose general adjustment is entirely unsatisfactory were given a score of 1, where would you put each patient listed below, in terms of his present stage of general adjustment? In other words, how well adjusted is the patient?

	Completely adjusted					Not at all adjusted				
	10	9	8	7	6	5	4	3	2	1
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APPENDIX C
CODING CATEGORIES

Geriatric Coping Schedule

Coding Categories

A. Anticipatory Behaviors

Rehearsal
Alternative plans
Information search - self directed
Information search - seeking information from others
Help seeking - actions, doing

B. Tension-management

Cognitive restructuring - positive
Cognitive restructuring - negative
Diversions activities
Ventilation - non-hostile
Hostility directed inward
Hostility directed outward
Psychosomatic manifestations

C. Manipulation of Environment

Reestablish and/or substitute
Construction of new environment
Alteration of present environment

D. Avoidance

Inaction, equivocation, undecided
Don't know
Withdrawal - mental or physical

E. Submission-resistance Measures

Active compliance
Passive compliance
Compromise or negotiations
Active resistance - confrontation
Passive resistance

F. Other Positive Behaviors

Other

G. Emotions

Disappointed
Angry
Worried
Calm
Bothered
Lonely
Depressed

Resentful
Fearful
Frustrated
Helpless
Anxious
Defeated
Uneasy
Worthless
Bored
Hopeless
Dissatisfied
Humiliated
Deadened
Guilty
Jealous
Hateful
Cold

H. Moos' Action Strategies

Seek additional information
See humorous aspects
Talk with others
Refuse to worry
Involvement in other activities
Positive concerted action
Expect worst
Alternative plans
Past experiences
Tension release, specific
Rehearsal

Semi-Structured Interview: Stresses

Coding Categories

Physical functioning
 Thinking - reasoning process
 Feelings about self, self worth, fears of rejection, uselessness
 Control and self direction
 Religion and values
 Work situation - financial
 Physical environment - situation
 Physical environment - safety
 Physical environment - nutrition
 Familial and significant relationships - negative
 Roommates
 Personnel - crudity
 Personnel - cruelty
 Personnel - cultural differences
 Personnel - inefficiency
 Professionals - M.D., lawyers
 Positive familial/significant other
 Absence of other activities
 Uncertain future

Semi-Structured Interview: Resources

Coding Categories

Friends
 Family
 M.D.
 Nursing personnel
 Physical therapy
 Faith, Religion
 Humor
 Life satisfaction
 Emotional strength
 Hope
 Intelligence, common sense
 Ability to adapt
 Withdrawal mentally
 Meals
 Institutional surroundings
 Diversional activity
 Previous experience with hospitalization

APPENDIX D
CONSENT FORMS

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Consent to Act as a Research Subject

Stress-Coping Study

932101

Sister Mary Quayhagen, the investigator, has explained the study to me. She can be reached at 474-8032 if I have any further questions.

I understand that the purpose of this study is to explore how I experience problems or stresses in transferring into and/or between health care institutions, and the way I handle these stresses. I also understand this information will be used to devise a means to help nurses better identify patient problems or stresses, and the means of resolving these.

I further understand that some of these questions might deal with very personal matters, but the investigator has explained that the interview is confidential and my name will not be recorded on the questionnaire and my answers will be used only by the investigator in the analysis of the data. My participation is entirely voluntary. My refusal or later withdrawal would be without any jeopardy to my future care.

I also understand that there will be no direct benefit to me personally, but that the information sought will contribute to the better understanding of the stresses or problems older adults face when transferred into or between health care institutions, and hopefully will result in alleviation of these stresses.

I am not being compensated for my participation in this study.

(Signature)

(Date)

UCSF DISSERTATION RESEARCH: STRESS-ADAPTATION STUDYPHYSICIAN'S RESEARCH APPROVAL FORM

932101

Sister Mary Quayhagen, doctoral candidate at the University of California, San Francisco, has my approval to ask my patients who meet her criteria if they will be willing to participate in her research. The type of approval I am granting her is the following:

_____ Blanket approval to ask any of these patients who fit her criteria.

_____ Limited approval to ask only those patients so designated by my office. In this latter case, she will check with my office each time one of these patients who fits her criteria is admitted.

I understand that all of these patients will be informed that this phase of the study is for construction of data collection instruments and the subsequent formulation of a nursing theoretical approach for identifying patient problems. I further understand that they will be signing a consent form which states that they are participating on a purely voluntary basis with assurance of absolute anonymity since no names, addresses, or other identifying information will be taken.

(Signature)

(Date)

APPENDIX E

CANONICAL-FACTOR-REGRESSION METHOD FORMULAS

Canonical-Factor-Regression Method Formulas
(Allen, 1974)

Formula for computing composite scores:

$$S = \sum (w_i Z_i) \quad (1)$$

where S is the composite score of the unobserved common factor, w_i is the linear weight for the observed variable i , and Z_i is the standard score on the observed variable i for each subject.

Formula for computing linear weights:

$$w_i = \frac{f_i / u_i^2}{1 + \sum (f_i^2 / u_i^2)} \quad (2)$$

where w_i is the linear weight of the observed variable i , f_i is the factor loading between variable i and the common factor, u_i^2 is the uniqueness of the variable i , and the summation is over the i observed variables in the composite. The uniqueness of each variable is defined as one minus the communality of that variable.

Formula for computing reliability coefficient omega:

$$\Omega_{CFRM} = \sum (f_i w_i) = \frac{\sum (f_i^2 / u_i^2)}{1 + \sum (f_i^2 / u_i^2)} \quad (3)$$

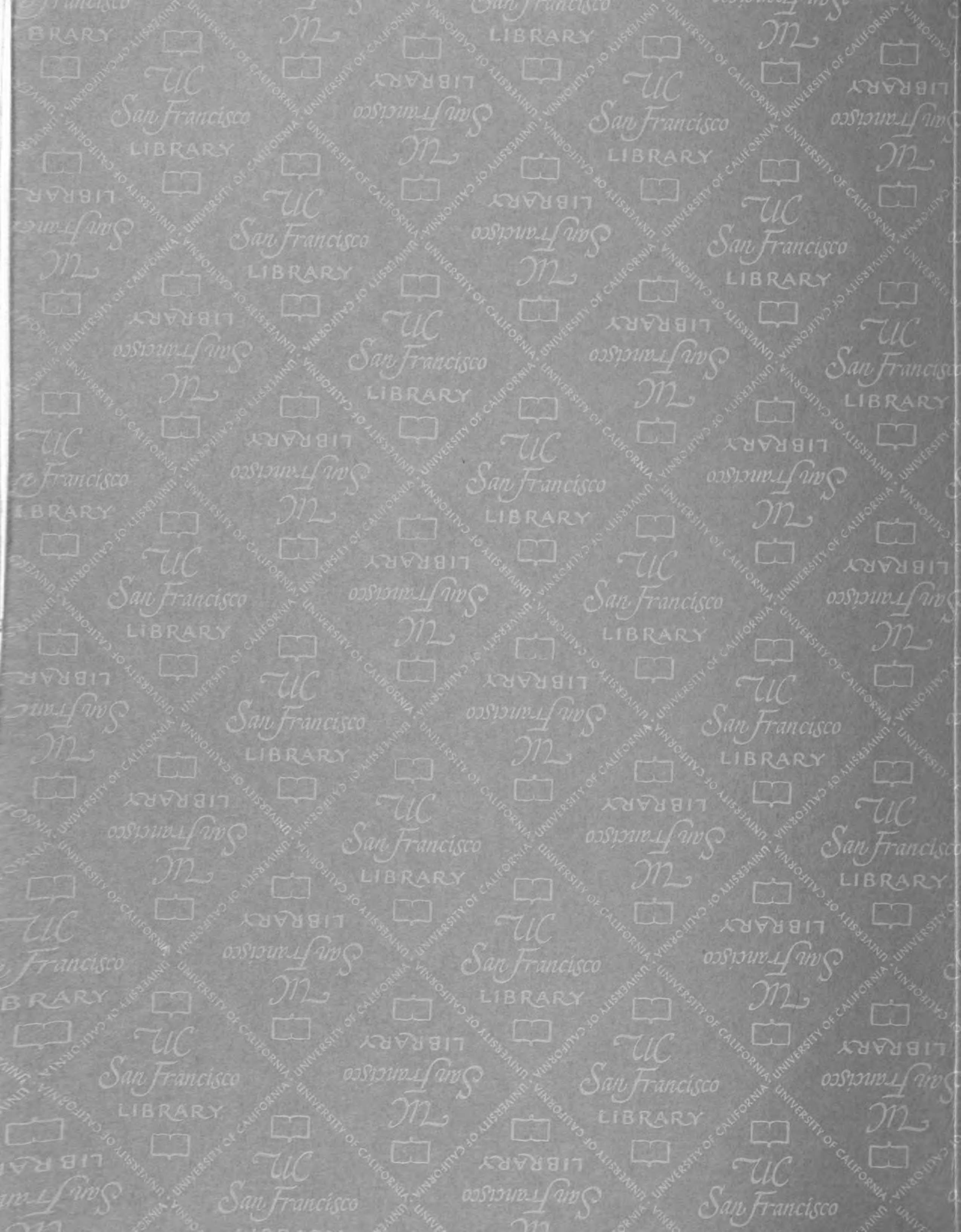
where Ω_{CFRM} is the CFMR reliability coefficient omega, w_i is the linear weight of the observed variable i , f_i is the factor loading of variable i on the common factor, u_i^2 is the uniqueness of variable i , and the summation is over the observed variables in the composite.

Formula for computing validity coefficient rho:

$$\rho_{CFRM} = \sqrt{\Omega_{CFRM}} \quad (4)$$

where ρ_{CFRM} is the CFMR validity coefficient rho and Ω_{CFRM} is the

reliability coefficient ω . The validity coefficient is the square root of the reliability coefficient when the CFRM weights are used to construct the composite score.



FOR REFERENCE

NOT TO BE TAKEN FROM THE ROOM



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