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The effects of relocation on elderly nursing home residents

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The University of Arizona, 1990

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THE EFFECTS OF RELOCATION ON
ELDERLY NURSING HOME RESIDENTS

by

Loretta Anderson

A Thesis Submitted to the Faculty of the
COLLEGE OF NURSING
In Partial Fulfillment of the Requirements
For the Degree of
MASTER OF SCIENCE
in the Graduate College
THE UNIVERSITY OF ARIZONA

1990

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SIGNED Loretta Anderson

APPROVAL BY THESIS DIRECTOR

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DEDICATION

This thesis is lovingly dedicated to my husband, Marlo, who, despite our 1500 mile and 18 month separation, continually encouraged me with his love and support.

To our two youngest children, Eric and Rozann, who uncomplainingly bore the temporary interruption of our homelife.

To my new Tucson friends who showed me that caring and friendship are not exclusively Montanan traits.

TABLE of CONTENTS

List of Illustrations	7
List of Tables	8
Abstract	9
 CHAPTERS	
1. Introduction	10
Statement of the Problem	12
Purpose of the Study	13
Significance of the Problem	14
Conceptual Framework	17
Stress	18
Adaptation	20
Relocation Response	24
Definitions	27
Assumptions	27
Summary	28
 2. Review of the Literature	 29
Characteristics of the Nursing Home	
Population	29
Relocation as a Stressful Life Change Event	32
Factors which would Heighten Relocation Stress	35
Research Studies on Relocation	38
Summary	43
 3. Methodology	 44
Study Sample	44
Instrument and Data Collection	46
Data Analysis	46
Protection of Human Subjects	46
Summary	47

4.	Presentation of the Data	48
	Introduction	48
	Characteristics of the Study	49
	Analysis of the Data	52
	Summary	68
5.	Conclusions, Recommendations and Implications . . .	69
	Conclusions	69
	Recommendations for Further Study	76
	Implications for Gerontological Nursing	77
APPENDIX		
	A: Human Subjects Approval	81
	B: Data Collection Tool for Relocation	83
	REFERENCES	85

LIST OF ILLUSTRATIONS

1. Vulnerability Hypothesis	19
2. Roy's Zones of Adaptation Model	21
3. Anderson's Relocation Response Model	25
4. Numbers of Deaths of Subjects during the 13.5 Month Post-Relocation Period	64

LIST OF TABLES

1.	Frequency Distributions of Subjects by Age Groups and Sex	51
2.	Numbers of Subjects by Time Since Relocation, Relocation, Age, and Sex	53
3.	Numbers of Subjects Who Died by Time Since Relocation, Age and Sex	55
4.	Frequency Distributions of Diagnoses of Subjects Who Died	57
5.	Number and Percent of Subjects Who Died in Each Nursing Home	60
6.	Numbers of Subjects Who Died by Sex and Monthly Periods between Date of Relocation and Date of Death	62
7.	Comparison of Frequency Distributions by Diagnoses of Living Subjects and Those that Died During a 13.5 Month Relocation Period	66

ABSTRACT

A descriptive study, using a retrospective chart review, investigated the mortality rates for 77 elderly nursing home residents who at the time of the study had been relocated between 10.5 and 13.5 months. Variables identified were age, sex, diagnosis, frequency of acute hospital admissions, nursing home placement, time interval between relocation and date of death, and number of years spent in a nursing home.

Findings showed that 31 (40%) of the relocated subjects died within the 13.5 month post-relocation period. Sixteen (52%) of those deaths occurred within six weeks of relocation. Data revealed that mortality increased with age, from 14% for 60 years olds to 73% for those in their nineties. Age was the only variable found to be statistically significant between those who lived or died. The study's findings demonstrated the need for nursing assessment and surveillance of relocated nursing home residents.

CHAPTER 1
INTRODUCTION

Relocation is the transferring or moving of an individual from a familiar environment to an unfamiliar one. There are many kinds and degrees of relocation. This study will report on interinstitutional relocation, which is one of the three types of institutional relocation, and its effects on an aging population. Findings from studies on the other two types of institutional relocations; institutionalization (originally relocating a person from his home into an institutional setting) and intrainstitutional relocation (transferring or moving a person from one room to another) will also be presented, because the stress associated with relocation seems to affect all three types.

Interinstitutional relocation, the transferring or moving of a person from one institution to another institution, is a major life change and, as such, is conceptualized as a stressful event. Thorson & Thorson, citing the works of Selye (1960) and Holmes & Rahe (1970),

state that, "too much stress in a relatively brief part of a person's life could precipitate health changes" (Thorson & Thorson, 1986, 21). These health changes can range from increased morbidity to mortality.

The concepts of stress, relocation, and mortality, especially in relation to the frail elderly institutionalized patient, have been studied by many in the field of gerontology (Gutman & Herbert, 1976; Schulz & Brenner, 1977; Borup, Gallego & Heffernan, 1979); Bourestom & Pastalan, 1981; Coffman, 1983; and Pruchno & Resch, 1988). During the decades of the 1960s and 70s, a relocation-mortality hypothesis was formulated and acted upon. This hypothesis, which postulates that there is a positive relationship between the relocation of elderly individuals (whether into an institution, between institutions or within institutions) and mortality rates, is also called transfer trauma, relocation stress and transplantation shock (Coffman, 1983).

Because the relocation-mortality point of view was so convincing during the 1960's & 70's, the mortality rate was often the only dependent measure studied. No other effects of relocation seemed to have been considered during this time period other than the two end points of death and survival. In recent years, improved data collection instruments and methods of measurement have allowed more

complex questions about the effects of relocation to be studied with the institutionalized elderly. The results which have been obtained with these more sensitive tools seem contradictory, and have led some researchers to question the validity of the relocation-mortality hypothesis. One of these researchers, Borup (1983), reviewing the relocation literature between 1961 and 1981, states that, "Of these 28 relocation studies (dealing with mortality), 75.0% (21) found that relocation had no affect on mortality, 14.3% (4) found that relocation resulted in increased mortality, 7.2% (2) studies found both an increase and a decrease in mortality as a result of relocation, and in 3.5% (1) findings on this point were not ascertainable" (Borup, 1983, 241).

STATEMENT OF THE PROBLEM

The purpose of this study was to determine the mortality rate for a population of elderly, nursing home patients during the year after their relocation experience. The study also elicited information which described the demographic characteristics of the relocated subjects. The questions addressed in this study were:

1. What was the overall mortality rate for a group of nursing home residents who had been relocated for 13.5 months?

2. What were the mortality rates of the relocated patients according to the following factors:
 - a. Age?
 - b. Sex?
 - c. Diagnosis?
 - d. Nursing home placement?
 - e. Time post-relocation?
3. Was there a significant age difference between the residents that died and those that lived?
4. Was there a significant age difference between the residents in relation to (a) the group as a whole, (b) those that died, and (c) those that lived?
5. What comparisons were there between the subjects who died and those that lived in relation to:
 - a. Diagnosis?
 - b. Frequency of acute hospital admission?
 - c. Number of years spent in a nursing home?

PURPOSE OF THE STUDY

The purpose of this study was to determine the mortality rate among a sample of 77 elderly skilled nursing care (SNC) level patients who were relocated from a county nursing home in a large Southwestern city in Arizona between December 10, 1987, and March 10, 1988. The final relocation from the county nursing home for this group of subjects was

initiated because of an administrative decision to close the unit where they had been living. Their progress, post transfer, into a number of other local nursing homes was monitored by the staff of the county's Quality Assurance Office. The necessity of relocating these residents presented a unique opportunity to assess the impact of a major transfer on the total group, even though data collected was limited to information available on the records in the county's Quality Assurance Office.

SIGNIFICANCE OF THE PROBLEM

Early research studies have documented that the relocation of elderly, institutionalized patients was associated with high mortality rates. While reviewing the relocation literature, Gutman and Herbert (1976) found four studies of relocation from the community to a mental hospital; one study from the community into a home for the aged; three studies from one institution to another; two studies from one ward to another within the same institution; and three studies from old to new facilities. The results of these 13 studies indicated that "elderly persons die at excessively high rates during the first year, and particularly during the first three months following relocation" (Gutman & Herbert, 1976,352).

The relocation-mortality hypothesis became so strongly entrenched in gerontological thinking, that often a bad location for patients was seen as preferable to the dangers of relocating them. As Coffman (1983, 453) wrote, "It, the mortality hypothesis, has served to keep patients in inferior and deteriorating facilities, from fears and assertions that moving is riskier than staying in substandard but familiar environments."

Though over 200 published research studies have addressed relocation since 1945 (Bourestom & Pastalan, 1981), confusion rather than consensus has been the result of study in this area of multiple variables. Some of the contradictory results that have been yielded over the years are enumerated by Schulz and Brenner (1977, 323): "While many researchers...have found relocation has negative effects on the aged in increased mortality rates, depression and decreased activity level, others have failed to show debilitating effects attributable to relocation." Consequently, nurses are without decision-making guidelines for relocating/transferring their elderly patients at a time when relocations are more prevalent than ever.

Recent federal government regulations are one reason the elderly are being relocated more frequently at the present time. Medicare certified extended care facilities (ECFs) must reserve a certain number of beds in a designated

area as medicare beds. Patients admitted to these medicare beds will automatically be transferred to another room when their payment status changes (Pruchno & Resch, 1988). Another federal government policy which has increased interinstitutional relocations is Diagnostic Related Groups (DRGs). Because of DRGs, many hospitalized elderly are either discharged home or transferred to a nursing home prematurely. In a worse case scenario, if an elderly patient's convalescence level at the time of his move was insufficient, then recovery may be incomplete. This could precipitate a cycle of relocations (home/nursing home/hospital), and further jeopardize the health of an already compromised individual.

The policies of ECFs have also increased the possibility that elderly clients will be frequently relocated. Many ECFs do not have the staff or equipment to care for acute, episodic illness; therefore, patients are routinely transferred to an acute care hospital for the duration of their acute episode. This may be only for a few days or weeks, but there is no guarantee that the room in the ECF from which they were transferred will be the room to which they will return. Thus, an already ill, elderly patient, who more than most requires continuity of care, may experience a series of relocations in a short span of time.

Infection control standards are often a cause of intra-institutional relocation. Infection control standards require the transfer of one of the patients in a two-bed room should both the patients require catheter bags. As a corollary, if there are no empty rooms in which to transfer one of the patients with a catheter bag, then a second set of roommates must be broken up. This results in the relocation of not one, but two patients.

Relocation is a frequent experience for elderly patients in ECFs, but many questions about the effects of relocation on this population remain unanswered. We must continue to research relocation and build a body of knowledge which will allow professional caregivers to make wise and safe choices when they transfer elderly patients. The complexities involved in dealing with the multiple problems of the aging may never allow us clear cut choices for relocation. Knowing what the end points are, however, should allow us to determine more clearly what the range of choices are and like all branches of human study, choose the lesser of two evils when the need to relocate arises.

CONCEPTUAL FRAMEWORK

Two theories that seem particularly applicable to the problem of relocation and the aged are stress and adaptation. These theories, as exemplified by Dohrenwend &

Dohrenwend's Stress Theory and Roy's Adaptation Theory are related by a health component. Both can elicit responses along the wellness-illness continuum, anywhere from peak wellness to death.

Stress

The concept of stress was initially related to the concept of health by Selye in 1956. Eleven years later Holmes & Rahe expanded on Selye's theories when they introduced their scale of stressful life events, which included relocation (Horowitz & Wilner, 1980). Poon (1980) acknowledges stress as a key component in relocation of the elderly. He wrote, "...there is a well documented relationship between stress and health among persons of all ages but also of the particular vulnerability of the elderly" (Poon, 1980, 244). Dohrenwend & Dohrenwend (1981), utilizing Holmes & Rahe's conceptualizations, have substantially advanced the theory that life changes are stressful determinants of an individual's health status.

The Dohrenwends' (1981) work on stress and health changes have resulted in several hypotheses. One of these, the Vulnerability Hypothesis (Figure 1), states that "stressful life events (such as relocation) moderated by preexisting personal disposition and social conditions can increase an individual's vulnerability to the impact of life

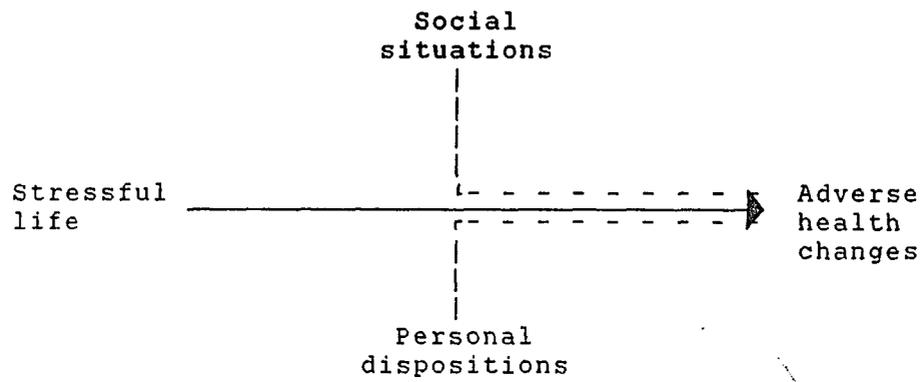


Figure 1. Vulnerability Hypothesis (Dohrenwend & Dohrenwend, 1981, 20).

events and cause adverse health changes" (Dohrenwend & Dohrenwend, 1981, 20).

Thomas' (1979) work on the physiological stages of the stress reaction is one possible explanation of why the elderly are more vulnerable to stress. She found that physically compromised, elderly individuals took longer to replenish their stress-resistive hormones. Thomas theorized that the delay in replenishment of protective hormones could cause an individual to go into shock and die of exhaustion. The stress of relocation, therefore, could further jeopardize the already precarious homeostasis of a vulnerable elderly patient, and move him further along the Wellness-Illness Continuum toward death.

Adaptation

The adaptation response, which is an organism's reaction to change/stress, precludes the inevitability of death as the only outcome for unrelieved stress. The relationship between adaptation and health is indicated in Roy's conceptualization of health. She states that health is a positive (+) adaptation to change (Roy, 1976). Roy originally based her adaptation theory on Harry Helson's concept of adaptation zones. This concept is pictorially presented in Figure 2.

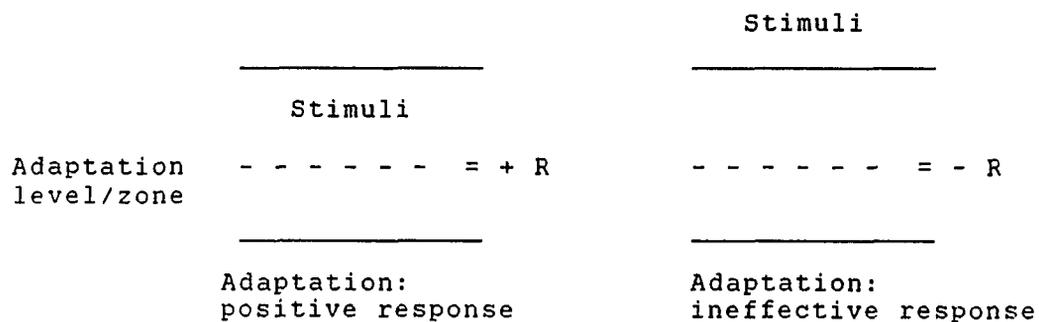


Figure 2. Roy's Zones of Adaptation Model
(Roy, 1976, 13).

As the model shows, when stimuli falls within a person's adaptation level, or within ones's coping abilities, a positive response (+R), adaptation, is elicited. Stimuli which falls outside a person's adaptation level, however, elicits a negative or ineffective response (-R), maladaptation. Adaptation to one stimulus frees energy to respond to other stimuli. Energy freed from ineffective coping attempts can promote healing and enhance health (Roy, 1984). Illness results when coping mechanisms are ineffective, leaving the individual with depleted energy reservoirs.

Conserving energy is one way to avoid depleting energy reserves. Energy conservation, which has been studied by Levine (1967) and Hirschfeld (1976), is especially critical for the chronically ill, the disabled, the frail elderly, the dying, elders in pain, and elders facing many losses and using psychic energy to adjust to the losses of change (Burnside, 1988). Positive adaptation to illness, disability, pain or loss decreases the drain on physical and psychological energy and promotes health. Energy conservation is usually initiated by the individual; when it is not, therapeutic intervention is required. Nursing, according to Roy's conceptualization, facilitates adaptation by assessing behaviors, and intervening through management of influencing stimuli (Marriner, 1986, 301).

Nursing as management of influencing stimuli is similar, though vastly expanded, to Nightingale's view of nursing as manipulation of the environment. Roy defines environment as all the conditions, circumstances, and influences surrounding and affecting the development and behavior of persons or groups (Roy, 1984).

Roy's nursing theory conceptualizes the individual as a holistic being who is in constant interaction with a changing environment. Two factors which have bearing on an individual's ability to adapt are the degree of environmental change and the person's coping abilities (Galbreath, 1980). These two factors, plus the fact that anyone over 70 years of age has had vast experience adapting to change, are particularly relevant in regard to the relocated elderly's ability to adapt. Busse and Maddox (1985) emphasized the advantage of long experience in coping. They quoted a statement from Siegler and George's 1981 study on 100 elderly subjects, which stated that older adults are very clever and resourceful in developing coping strategies (Busse & Maddox, 1985).

One factor in coping expertise may be that an individual's personality remains constant over time. The concept of continuity or agelessness has been expanded by Kaufman (1986). During one of her qualitative research studies, Kaufman (1986) discovered that even though

sociocultural changes are inevitable in later life, when her subjects described the meaning of their lives, regardless of their circumstances, they were able to create a continuity of self. It would seem that continuity of self would expand an older individual's adaptation zone and help him adjust positively to an unfamiliar environment. All factors which could enhance patients' abilities to adapt should be of interest to nurses, because the degree of adjustment or adaptation required of elderly persons will often be reflected in their levels of health.

Relocation Response

This present study conceptualized the stimulus of stress (relocation) as triggering the adaptation response. This concept is depicted in the investigator's Relocation Response Model, Figure 3. In this model the health-illness continuum is visualized vertically, rather than horizontally as it usually is, so it could be aligned with Helson's adaptation zones. The Relocation Response Model is a stimulus-organism-response (SOR) model, as is the Vulnerability Hypothesis model in Figure 1. The individual's adaptation zone, or coping skills, at the time of the stressor (in this study, relocation) will be either broad or narrow. The expanse of the adaptation zone is dependent upon a multiplicity of factors: the individual's

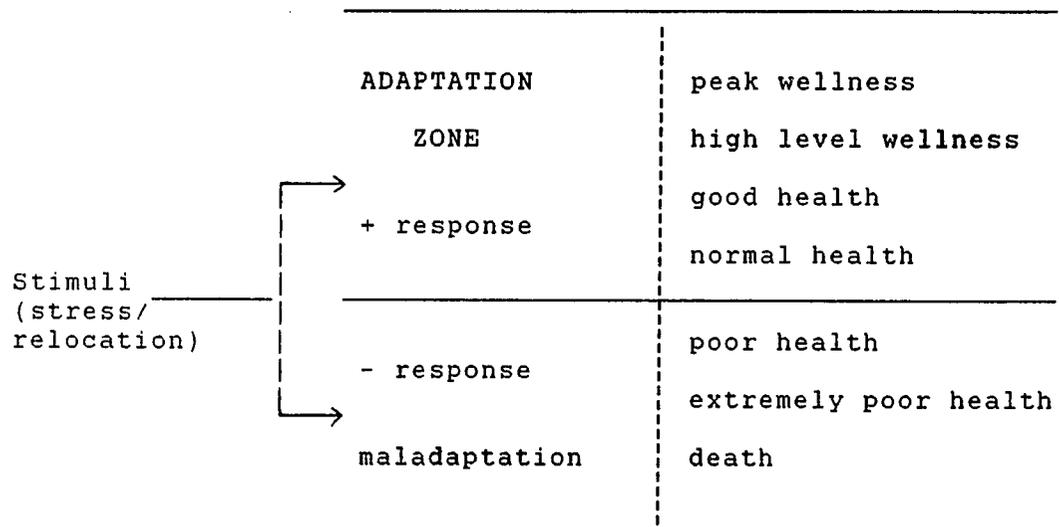


Figure 3. Anderson's Relocation Response Model.

present state of biopsychosocial health, attitudes toward relocation, previous coping skills, concomitant stressors, and the degree of environmental change involved in the move.

Other individual factors particular to each person may also impact on the individual's adaptation zone at any given moment in time, compounding the diversity of this age group and making generalizations difficult. Widowhood is one such factor. Ebersole and Hess (1981) have called widowhood, aside from one's own death, the most grievous assault to self.

As the Relocation Response Model shows, stimuli will either fall inside or outside the individual's fluctuating adaptation zone. Stimuli within the adaptation zone leads to a positive (+) response and is reflected in various levels of health. Stimuli outside the adaptation zone generates a negative response (-) or maladaptation and illness. Death is the most severe form of maladaptation. The subjects in this study were exposed to a high degree of environmental changes and were in compromised states of health. It was anticipated, therefore, that there would be incidents of maladaptation to relocation with the corresponding possibility of death occurring.

DEFINITIONS

Skilled Nursing Care (SNC) - that level of nursing care necessary for patients whose functional abilities are so compromised that they require assistance with activities of daily living (ADLs), and the presence of licensed staff (Registered Nurse (RN) or Licensed Practical Nurse (LPN)) at least 50% of the time.

Extended Care Facility (ECF) - an institution providing long term care for those who require assistance with ADLs and/or nursing supervision because of a dysfunction related to a pathological process.

Date of Final Relocation - that day on which the patient was dismissed/relocated from the county nursing home for the last time.

ASSUMPTIONS

The assumption was made that the nursing homes which received the relocated subjects gave similar though not necessarily equal nursing care. All of the nursing homes were Arizona certified and were staffed at a minimum of 2.5 hours of nursing care per patient per day as per state law. The second assumption is that subjects were high risk, because all of them were elderly, institutionalized and at the SNC level. A third assumption was that subjects who required hospitalization in an acute-care institution were

more vulnerable and frail and, therefore, in greater danger of mortality.

SUMMARY

This chapter presented the rationale for possible increases in mortality rates when the institutionalized elderly were relocated. The purpose of this study was to investigate the mortality rates for 77 elderly patients who were interinstitutionally relocated from a large Southwestern city's county nursing home. The conceptual framework for this study was based on the theories of stress and adaptation. Mortality was conceptualized as severe maladaptation to the stress of relocation.

CHAPTER 2

REVIEW OF THE LITERATURE

The review of the relocation literature includes studies on all three types of institutional relocation: original institutionalization, inter-institutionalization and intra-institutionalization. Included in this discussion will be the multiple factors which have been found to affect the responses of elderly, institutionalized patients when they are relocated. The literature is organized in four sections: Characteristics of the Nursing Home Population, Relocation as a Stressful Life Change Event, Factors Which Heighten Stress, and Research Studies on Relocation.

CHARACTERISTICS OF THE NURSING HOME POPULATION

The graying of America has become an acknowledged fact. Because of technological sciences' overwhelming successes in combating acute illnesses in developed countries, many more men and women are living to advanced ages. At the present time those over 65 years of ages in the United States number 29.2 million. Though they represent only 12% of the

population, those over 65 utilize 30% of all personal health care spending and 55% of all federal health dollars (Taft, 1986). The most rapidly increasing segment of those over 65 are those who are 85 years of age and older. In 1986 those 85 years and older numbered 2.8 million, which represents a 22-fold increase over 1900 census figures (Fowles, 1987).

Jubilation over this increased lifespan is tainted, however, by the fact that as we age the opportunity for acquiring degenerative/chronic disease also increases. Research cited by Rabin & Stockton (1987), found that 80% of those over 60 years of age have one or more chronic diseases. This acquisition of disease can lead to impairment or disability (Lesnoff-Cavaglia, 1987). Impairment leads to an increased possibility, in the latter years, of being admitted into an institution: either a chronic disease hospital, home for the aged, nursing home, mental hospital or foster home. Nursing home admission, with its connotation of dependency and deterioration, is the specter of old age, causing greater fear than death itself (Neugarten, 1979).

Though statistics show that at any one time only 5% of the elderly are in an institution (Butler, 1982; Newton, Lazarus & Weinberg, 1984), other quantitative data demonstrated how the institutionalization rate increases with age. Several investigators, Lesnoff-Carvavaglia (1987)

and Robin & Stockton (1987), found that 20% of all those who are 80 years of age and older live in an institution. Indeed, the mean age of the nursing home population is 84 years (Harper & Lebowitz, 1986). This population, defined as frail and vulnerable (Harper & Lebowitz, 1986), has difficulty returning to a previous state of health once they have reached the level of disability that results in a nursing home admission. That is what Katz, et al. (1976), as reported by Rabin & Stockton (1987, 73), found: "...those 85 or older have 'little chance of regaining functional capacity once it is compromised,' compared with other older age groups."

Although the nursing home population exhibits great variability and wide disparity in function, as do all those over 60 generally, there are some commonalities. Burgio, Jones, Butler and Engel (1988) ranked the responses of a sample of nursing home nurses as to the 22 most common behaviors which they observed in their patients. The top ten behaviors were:

1. difficulty with mobility - 95%
2. incontinence - 83%
3. difficulty with dressing - 78%
4. aberrantly low activity level - 39%
5. language problems - 33%
6. tantrum-like behavior - 26%

7. feeding difficulties - 25%
8. noncompliance - 23%
9. verbal abuse - 22%
10. physical aggression - 20%

These ten behaviors fall into three broad categories: physical incapacity (1,2,5), difficulty with ADLs (3,4,7) and mental disorders (6,8,9,10). The concept of personal deterioration encompasses these three categories. Along with the inability or unwillingness of a responsible other to offer care, and the inability of the current system of services to assure independent living, personal deterioration is one of the major reasons for institutionalization (Tobin & Lieberman, 1976). The personal deterioration presented above may be representative of the frail and vulnerable patients in this study, who required skilled nursing care (SNC).

RELOCATION AS A STRESSFUL LIFE CHANGE EVENT

Any change of residence (relocation) is a life change event and is considered, to one degree or another, stressful (Gunderson & Rahe, 1979). When relocation is compounded by major revisions in personal habits and living conditions, as in a move into a nursing home, the amount of stress associated with these particular changes is magnified.

Many studies have documented the relationship between stress and illness. Dohrenwend and Dohrenwend (1981) concluded, after reviewing the stress literature, that the overwhelming number of studies on life stress and illness showed that there was a definite relationship between life stress and adverse health changes.

In the geriatric literature, stress and its relationship to illness has often been conceptualized as relocation and its relationship to mortality. As reported by Tobin and Lieberman (1976), relocation research studies between 1945 and 1971, on all types of institutional relocation, found a positive relation between relocation and increased mortality rates, though the reason for the high rates was unclear. These relocation studies became the data base for the relocation - mortality hypothesis. This hypothesis, which predicted that the stress of relocation led to increased mortality rates during the year following relocation (and especially within the first two-three months), is also called transfer trauma, relocation stress, transplantation shock and first month syndrome. Tobin and Lieberman (1976) coined this last term to describe the bizarre behavioral symptoms sometimes displayed by patients after they have been relocated, especially those who had been newly institutionalized.

Institutionalization, the most radical change of environment, represents not only a change in familiar physical surroundings and living conditions, but also in the perception of self. One is now a patient. As Tobin and Lieberman (1976, 125) wrote, "If the older person has not been aware of personal frailty up to this point, there is now no escape; the very aids that facilitate care of the ill aged force the newcomer to become aware of the prevalence of infirmity among his cohorts." Though the other types of institutional relocation (inter and intra) do not have the added burden of learning the patient role, all relocations involve a change in environment with varying degrees of stress, and subsequently, varying levels of need for adaptation.

For those who survive, adaptation or stability usually occurs within the first two to three months after relocation (Tobin & Lieberman, 1976; Gutman & Herbert, 1976). Mortality rates, however, can continue to rise for up to one year. Six months has also been reported as a crucial point. "It's shocking, but true that 65% of all American elderly moving from one nursing home to another die within six months" (Kohut, Kohut & Fleishman, 1979, 56).

FACTORS WHICH WOULD HEIGHTEN RELOCATION STRESS

This section will discuss factors which have been identified by a number of researchers as showing a relationship with relocation and increased mortality rates. These factors are: morbidity, lack of predictability or controllability, being male, very old or incontinent, marked physical or mental disability, extreme confusion and a negative attitude toward relocation, being relocated involuntarily, and having a rigid or passive personality. Schulz & Brenner (1977), who acknowledged the contradictory results reported in the relocation literature, argued that the predictability and controllability, which an individual has over a relocation, will largely determine whether or not mortality will be one of an individual's responses to relocation. Citing a 1963 study by Ferrari which compared voluntary vs involuntary institutionalization, they stated, "The actual rates were sobering: within the first ten weeks of residence in the institution, 16 out of 17 persons (94%) in the involuntary group died, while 1 out of 38 (2.6%) in the voluntary group died within the same time period" (Schultz & Brenner, 1977, 325).

The pattern of higher mortality rates for involuntarily relocated patients also holds for interinstitutional relocations. High mortality rates were found by Marlowe in his 1974 interinstitutional relocation study when Modesto

State Hospital in California closed its doors and transferred 428 patients, 65 years of age or older, to other state hospitals or community nursing homes. Schulz and Brenner (1977, 327), citing Marlowe's study, stated that Marlowe found, "mortality rates were significantly higher for the relocated group when compared to base rates for Modesto, calculated for the four years prior to closure." Schulz and Brenner also stated that, in addition, Marlowe found that mortality rates were highest for those who were most physically and/or psychologically fragile.

Tobin & Lieberman (1976) identified studies which suggested that mortality rates were particularly high for men, the very old, and those with focal lesions of the central nervous system. They cite Goldfarb, who found that incontinence, marked physical disability and extreme confusion were the strongest predictors of mortality among the elderly who become institutionalized (Tobin & Lieberman, 1976). Kowalski, reporting on eight relocation studies, found that age, diagnosis, and mental states were the strongest predictors of mortality. He also found increased mortality rates in patients who expressed a negative attitude toward relocation, had dementia, impaired physical function, psychotic illness and/or depression (Kowalski, 1981).

Pino, Rosica and Carter (1978, 167), quoting a study by Killian, reported similar factors which enhanced relocation stress: "Patients with psychosis, brain syndrome, poor physical functioning and poor mental status were most prone to excessive mortality rates in an involuntary relocation." Kohut, Kohut and Fleishman (1979) reiterated the idea that the psychological condition known as transfer trauma increased if the patient was confused. Hall (1984) noted that patients with decreased ADL and mental status scores were less likely to survive institutionalization, while voluntary relocation was not harmful.

Tallerman, et al. (1984), cited greater risks for relocated patients with personality traits of rigidity and dependence and those incapable of adapting to change. This research group also reported that more men than women died during relocation and that, "findings support the view that involuntary relocations were highly stressful, especially if they were not viewed as improvements" (Tallerman, 1984, 227). Another psychological characteristic mentioned in the literature as mediating relocation effects is passivity. Tobin and Lieberman (1976) found passivity to be the only psychological characteristic which could be used to predict morbidity and mortality, since passivity hindered development of adaptive techniques.

Wolanin (1978) found, in her review of the research literature, that programs which prepared patients before transfer demonstrated lower mortality rates post relocation. One 1971 study, cited by Wolanin, had two groups of patients that received relocation preparation. The first group received 1-4 preparatory visits before relocation; the second group received 1-2 visits. Findings after one year showed a 27% mortality rate for the first group, and a 52% mortality rate for the second group (Wolanin, 1978). Another study cited by Wolanin (1978), that was conducted in 1974 in Pennsylvania on 400 relocated nursing home patients with a preparatory program, showed an annual mortality rate of 22%. Pennsylvania mortality rates for non-moving nursing home patients that year was 27%, and the national rate was 28%. From this data it would seem that relocation with preparatory visits lowered mortality rates below even normal yearly nursing home mortality rates.

RESEARCH STUDIES ON RELOCATION

Research studies on relocation of the institutionalized elderly have yielded conflicting results. Some studies have found that relocation increased mortality rates while others found no increase in mortality rates. That contradiction is compounded by other studies which show relocation is associated with (a) decreased mortality rates, or (b) mixed

results: both increases and decreases in mortality rates. Four studies, each one exemplifying one of these four findings, will be presented.

An interinstitutional relocation study by Bourestom and Tars (1974), represents the conceptual perspective that relocation increases mortality. For one year they followed 98 involuntarily relocated patients from two Michigan nursing homes. These 98 patients were matched for age, sex, length of hospitalization and primary diagnosis with a nonrelocated control group in a third facility in Ohio. This study afforded an excellent opportunity to study relocation effects in terms of the degree of environmental change involved, because one of the Michigan nursing homes involved a radical change in environment and the other a moderate change (Bourestom & Tars, 1974). An important variable in relocation, involuntariness, was held constant because both groups experienced it. Bourestom & Tars (1974) stated that their most dramatic finding was a strikingly higher mortality rate (43%) for the radical-change relocation group than for their matched nonrelocated counterparts (21%). The moderate-change relocation group experienced a 37% death rate, compared with a 26% rate among their controls. From this the authors concluded that, "In terms of mortality experience, it appears that the degree of environmental change involved in relocation is a potent

factor influencing mortality rates" (Bourestom & Tars, 1974, 508).

Negative changes in life patterns, other than mortality rates, which the researchers noted were: increasing pessimism about their state of health, withdrawal from activities, lower levels of behavior and less inclination to trust. Another difference the researchers noted was the pattern of mortality. They stated that post-relocation (no statistics given) the mortality rates for the radical-change group were highest after three months, while the moderate-change group's peak death rates occurred 7-9 months following relocation (Bourestom & Tars, 1974).

Gutman and Herbert (1976), who conducted another interinstitutional relocation study, reported different results. They did not find increased mortality rates when they followed a group of 81 males who were relocated to a newly constructed extended care unit in the Vancouver General Hospital complex. All their subjects were sufficiently debilitated to qualify for Canadian extended care classification, Level III (Gutman & Herbert, 1976). This classification has guidelines similar to Medicare regulations for the skilled nursing care level in the United States.

Gutman & Herbert (1976) had expected, because of the results of other relocation studies, to find high mortality

rates throughout the first year after transfer with the bulk of those deaths during the first three months. What they found was a mortality rate of 33.3%. Their 12 month death rate for the relocated group (33.3%) was thus equal to that of the year immediately prior to transfer and lower, although not significantly lower, than the rates for corresponding dates in four of the five preceding years (Gutman & Herbert, 1976). The mortality rates for the four preceding years were: 49.38%, 40.24%, 34.88% and 48.19%, respectively.

Other studies have found lower mortality rates associated with relocating elderly patients. That was the result of findings by Borup, Gallego and Heffernan (1979), who used an experimental-control research design to study 529 patients who were relocated from 30 Utah nursing homes. During their 16 1/2 month study Borup and his associates found that, "those patients experiencing relocation had a significantly lower mortality rate than those not undergoing a change in their environment" (Borup, Gallego & Hefferman, 1979, 136). The mortality rate for the relocated subjects was 11.2%, and 17.7% for the unrelocated, control group. These researchers concluded after holding age constant and comparing both the experimental and the control group's mortality rates, that the lower mortality rate for the

experimental group was attributable to age differences, rather than to the influences of relocation (Borup, 1979).

Coffman's (1983) study findings agreed with Borup's conclusions. Coffman is an opponent of what he calls the relocation mortality myth, and stated that his re-analysis survey of the evidence in the relocation literature showed that relocation is not, in itself, a demonstrable threat to survival among geriatric populations (Coffman, 1983). He further stated that a recent analysis by McConnel and Deljavan (1982) of national-level data on nursing home versus community mortality rates found the higher nursing home rates almost entirely explainable by age and morbidity (Coffman, 1983).

Several studies on geriatric relocation have yielded mixed findings. One example of this is a study on intrainstitutional relocation conducted by Pruchno and Resch (1988). For a period of one year they followed 207 residents who transferred rooms within a long term facility, and 353 residents who did not transfer. The results of their analysis indicated that mortality rates were higher for moderately competent residents who moved than for non-movers. Mortality rates for movers of high competence did not differ from those of non-movers (Pruchno & Resch, 1988). Since Pruchno and Resch were using Lawton and Simon's (1968) docility hypothesis for their theoretical basis, these were

the results they expected. The environmental docility hypothesis they used reasoned that, "high degrees of competence will allow an individual to rise above his environment, while reduced competence will increase behavioral dependence on external conditions," i.e. environmental cues (Pruchno & Resch, 1988, 311).

SUMMARY

The review of the literature revealed some of the conflicting findings of studies investigating relocation and mortality rates of elderly institutionalized patients, such as: increase in mortality (Bourestom and Tars, 1974); no change in mortality (Gutman & Herbert, 1976); decrease in mortality (Borup, Gallego & Heffernan, 1979; Wolanin, 1978); and mixed results, depending upon level of competency of the residents (Pruchno & Resch, 1988). Also discussed were a number of variables including age, involuntary transfer, maleness, type and degree of illness, diagnosis, morbidity, a negative attitude toward transfer, degree of change in environment, amount of preparation for transfer, and rigid or passive personalities, all of which impacted negatively on relocation.

CHAPTER 3

METHODOLOGY

The study's research design, with its population, sample, setting and data collection instrument are presented in this chapter. The methods of data collection used are also discussed.

The quantitative descriptive study utilized a retrospective chart review to collect data from the Quality Assurance records of 77 county patients who were interinstitutionally relocated from a county nursing home in a large Southwestern city in Arizona. Mortality rates and demographic characteristics of the sample (age, sex, diagnoses and frequency of acute hospitalizations) were the variables under study.

STUDY SAMPLE

The sample was a group of 77 SNC level patients who were relocated to a number of other local nursing homes because of an administrative decision to remodel the second floor of a county nursing home in a large Southwestern city

in Arizona. The sample consisted of 13 men and 64 women who met the following criteria:

1. Were among the county nursing home's second-floor population.
2. Were relocated between December 10, 1987, and March 10, 1988.
3. Were at least 60 years of age at the time of their relocation.

INSTRUMENT AND DATA COLLECTION

A survey instrument, Data Collection Tool for Relocation (Appendix B), was developed by this researcher to systematically collect the data from the Quality Assurance records of the sample under study. The Data Collection Tool for Relocation is in two parts. Part I consists of ten demographic questions taken directly from information available in the Quality Assurance Office's card file. Part II consists of four numeric computations, using information from Part I, which have direct bearing on the study's questions.

The data available on the Quality Assurance records were limited to the following demographic variables: age, sex, diagnosis, date of admission to the county system as a nursing home resident, and locations and dates of transfers/relocations. The cards in the Quality Assurance Office's

card file on the patients who were involved in this particular relocation were specially flagged with orange dots for easy identification. Cards of living patients and those that had died were filed in separate drawers.

Since one researcher conducted the data collection, interrater reliability was not addressed. Verbal permission to conduct this study was granted by the Director of the Quality Assurance Office of the county's Department of Aging and Medical Services.

DATA ANALYSIS

Data collected with the Data Collection Tool for Relocation Study is presented using frequency distributions and measures of central tendency for mortality rates, age, sex, diagnosis and frequency of acute hospital admissions. To further answer the study questions of difference between those that lived and those that died based on age and sex, the student t test (at $p = .05$ level of significance) was used.

PROTECTION OF HUMAN SUBJECTS

After review by the College of Nursing Ethical Review Subcommittee of the Research Committee of the University of Arizona, this study was approved as exempt from the possibility of causing harm to human subjects (Appendix A).

SUMMARY

This chapter presented a quantitative descriptive study design which used a two-part, fourteen question instrument (The Data Collection Tool for Relocation), to conduct a retrospective chart review. This chapter also delineated the criteria for sample selection, the individual was: (1) part of a county nursing home's second floor SNC population, (2) relocated from that population between December 10, 1987 and March 10, 1988, and (3) at least 60 years of age at time of final relocation. Frequency distributions and measures of central tendency were used for data analysis.

CHAPTER 4
PRESENTATION OF DATA

INTRODUCTION

This study was designed to investigate the mortality rates among a group of elderly residents who were interinstitutionally relocated. In this chapter, characteristics of the sample and statistical analyses of the data are presented. Data analysis is arranged so as to answer the following study questions:

1. What was the overall mortality rate for a group of nursing home residents who had been relocated for 13.5 months?
2. What were the mortality rates of the relocated patients according to the following factors:
 - a. Age?
 - b. Sex?
 - c. Diagnosis?
 - d. Nursing home placement?
 - e. Time post-relocation?

3. Was there a significant age difference between the residents that died and those that lived?
4. Was there a significant age difference between the sexes in relation to (a) the group as a whole, (b) those that died, and (c) those that lived?
5. What comparisons were there between the subjects who died and those that lived in relation to:
 - a. Diagnosis?
 - b. Frequency of acute hospital admission?
 - c. Number of years spent in a nursing home?

CHARACTERISTICS OF THE STUDY

The sample for this study (n=77) was selected from a population of 85 patients who were relocated from a county nursing home in a large southwestern city in Arizona to 13 other local nursing homes. The relocation occurred when the county nursing home phased out its second floor unit as a skilled care area. The three criteria for inclusion in this study were that the individual was part of the relocated population, was relocated between December 10, 1987 and March 10, 1988, and was 60 years of age or older. Because 8 of the 85 relocated patients were under 60 years of age, they did not meet the study's criteria and were not included in the sample. As a point of interest, the records showed

that none of the under-60, relocated patients died during the 13.5 month post-relocation period covered by this study.

Sixty-four (83%) of the 77 subjects in this study were women and 13 (17%) were men (Table 1). Forty-seven percent (36) of the subjects were in their eighties, twenty-three percent (18) were in their seventies and fourteen percent (11) were in their nineties. The sample ranged from 61 to 102 years in age.

Relocation of the 77 patients in the sample occurred over a period of three months, from December 10, 1987 to March 10, 1988. During the first month, 13 patients were relocated; twenty-nine were relocated the second month, and the final 35 during the third month. By the date of data collection (DODC), January 31, 1989, the patients had been residing at their new locations for periods ranging from 10.5 to 13.5 months. Because of the staggered relocation pattern, 40 patients had been relocated for 12 months and longer, while 37 patients had been relocated less than 12 months. The 40 patients who were in the 12-months-and-greater relocation group represent 52% of the sample. The 37 patients who were in the less-than- 12-months relocation group represent 48% of the sample.

An almost equal number of patients were in each of the greater-than and less-than-12-month relocation groups.

Table 1. Frequency Distributions of Subjects by Age Groups and Sex (n=77).

Age Groups	Males		Females		Total	
	#	%	#	%	#	%
60-69	2	15	6	9	8	10
70-79	2	15	16	25	18	23
80-89	8	62	28	44	36	47
90-99	0		11	17	11	14
100+	1	8	3	5	4	6
TOTAL	13	17	64	83	77	100
\bar{X} Age	80		83		83	

Seven men and 33 women had been relocated in the greater-12-months relocation group, while 6 men and 31 women were in the less-than-12 months relocation group. Both of these groups had an equal number of women in their 60s (3 patients each) and 80s (14 patients each). The 12-months-and-greater relocation group had more patients in their 90s (9 women) than did the less-than-12-months relocation group (2 women). This trend was reversed in the 70th decade, where the 12-months-and-greater group had 5 women and 0 men, and the less-than-12-months group had 11 women and 2 men. This information is presented in Table 2.

ANALYSIS OF THE DATA

Data analysis was directed by the research questions as follows:

Question 1. What was the overall mortality rate for the relocated sample during the 13.5 month period from the first date of relocation (DOR), December 10, 1987; through the date of data collection (DODC), January 31, 1989?

During the 13.5 month post-relocation interim investigated in this study, 31 (40%) of the 77 subjects died. The two relocation groups revealed similar findings. Eighteen (45%) of the 40 patients who were in the 12-months-and-greater relocation group died, as did 13 (36%) of the 37 patients who were in the less-than-12-months group.

Table 2. Numbers of Subjects by Time Since Relocation, Age, and Sex (n=77).

Age	<u>Time Since Relocation</u>				Total	
	12 Months and Greater (n=40)		Less Than 12 Months (n=37)			
	Male	Female	Male	Female	Male	Female
60-69	2	3	0	3	2	6
70-79	0	5	2	11	2	16
80-89	5	14	3	14	8	28
90-99	0	9	0	2	0	11
100+	0	2	1	1	1	3
TOTAL	7	33	6	31	13	64

Question 2.a. What were the mortality rates of the relocated residents according to age?

Mortality rates increased with age. The rates were:

60 to 69 year olds	-	13%
70 to 79 year olds	-	28%
80 to 89 year olds	-	44%
90 to 99 year olds	-	73%
100+ years old	-	25%

Because of the staggered relocation, and the fact that not all residents were relocated a full year, the data were analysed in two groups; those residents who were relocated 12-months-and-greater and those residents who were relocated less-than-12-months.

The numbers of subjects who died by time of relocation are presented in Table 3. Of those subjects in their nineties, sixty-six percent (6) of the 12-months-and-greater relocation group died, as did one hundred percent (2) of the women in the less-than-12-months relocation group. In both relocation groups the greatest number of deaths, fifty-two percent (16), occurred in the subjects who were in their eighties. The eighties age group was also the largest age group.

Table 3. Numbers of Subjects Who Died by Time Since Relocation, Age, and Sex (n=31).

Age	<u>Time Since Relocation</u>				Total	
	12 Months and Greater (n=40)		Less Than 12 Months (n=37)		(n=77)	
	Male	Female	Male	Female	#	%
60-69	0	1	0	0	1	3
70-79	0	1	0	4	5	16
80-89	4	6	0	6	16	52
90-99	0	6	0	2	8	26
100+	0	0	0	1	1	3
TOTAL	4	14	0	13	31	100

Question 2.b. What were the mortality rates of the relocated residents according to sex?

Of the 31 patients who died, 27 (87%) were women and 4 (13%) were men. Findings from calculation of each sex separately, showed that 42% of the 64 women in the sample died within the 13.5 month period. That compares with a 31% rate for the 13 men.

Question 2.c. What were the mortality rates of the relocated residents according to
(1) multiplicity of diagnoses, and
(2) individual diagnoses?

The number of different diagnoses for the subjects ranged from one to eight. The mean number of diagnoses per person was three.

Ten most frequent diagnoses emerged from analysis of the data on the patients that died. Several diagnoses types were combined for analysis. For example, dementia, chronic organic brain syndrome (COBS) and senile dementia of the Alzheimer's type (SDAT) were combined and labeled dementia, because these diagnoses are sometimes used interchangeably by diagnosticians. These diagnoses are ranked from most common (dementia, n=18) to least common (diabetes mellitus, n=1). These data are presented in Table 4.

Table 4. Frequency Distributions of Diagnoses of Subjects Who Died (n=31).

Diagnoses	Subject Deaths	
	#	%
Dementia	18	58
Degenerative Joint Disease	13	42
Arteriosclerotic Heart Disease	12	39
Fractures	9	29
Hypertension	5	16
Cerebral Vascular Accident	4	13
Cancer	3	10
Congestive Heart Failure	3	10
Parkinson's Disease	3	10
Diabetes Mellitus	1	3

Note: Because all the patients in this study had two or more diagnoses, the frequency of occurrence of all diagnoses are more than the number of patients.

Eighteen (58%) of the patients who died had some form of dementia. At the time these patients were diagnosed, COBS was still the most commonly used diagnosis for dementia. Thirteen of the 18 dementia patients in this study had a diagnosis of COBS, while only two were diagnosed with SDAT. The remaining three of the 18 who died with a diagnosis of dementia simply had dementia as one of their multiple diagnoses.

Degenerative joint disease (DJD) (n=7) and osteoarthritis (n=6) were also combined and labeled DJD. These diseases affected 13 patients (42%) of the sample who died, causing DJD to be the second most commonly occurring diagnosis in these residents.

Three other diagnoses that were combined were arteriosclerotic heart disease (ASHD), chronic arterial disease, and generalized arterial disease. These cardiovascular diseases were labeled ASHD, and were the third most common disease category. Twelve (39%) of the patients had ASHD as one of their multiple diagnoses.

Question 2.d. What were the mortality rates of the relocated residents according to nursing home placement?

The patients in this study were relocated to 13 different nursing homes. These nursing homes varied in size

from 40 to 305 beds, and all met Arizona's criteria for staffing at the skilled care level. The mortality rates per nursing home ranged from zero to 62.5%.

As presented in Table 5, Nursing home #6 had the highest patient mortality rate (62.5%), with 5 of the 8 patients relocated there dying. Nursing homes #1, #5 and #11 had no deaths, but their numbers of relocated patients were correspondingly low: 1, 2 and 1 patients. Nursing homes #4, #8, and #9 had over fifty percent of their relocated patients die.

Question 2.e. What were the mortality rates for the relocated residents according to monthly post-relocation time intervals?

Because the subjects in this study were relocated at various times and because data collection was conducted before all patients had been relocated for one year, the interval of time post-relocation from date of relocation (DOR) to date of death (DOD) for each patient that died was analyzed in half-month increments. These half-month increments were combined to form three month intervals, or quarters.

Table 5. Number and Percent of Subjects Who Died in Each Nursing Home (n=31).

Nursing Home Number	Relocated Subjects	Deaths	
		#	%
1	1	0	0
2	12	2	16.7
3	11	5	45.5
4	2	1	50.0
5	2	0	0
6	8	5	62.5
7	3	1	33.3
8	2	1	50.0
9	11	6	54.5
10	4	1	25.0
11	1	0	0
12	7	3	42.9
13	13	6	46.1

The data presented in Table 6 shows that 17 patients (55%) died during the first three months after their relocation. The six half-month increments, representing the first three months, or first quarter, are trimodal. The mode clusterings were at 0.5 months, 5 patients; 1 month, 4 patients; 1.5 months, 7 patients. Therefore, 16 (52%) of the 31 patients who died did so within 1.5 months or six weeks of their relocation. The mean for the number of months at which death occurred (between DOR and DOD), during the first quarter was 1.1 months. For the four quarters investigated, the mean for the number of months at which death occurred (between DOR and DOD) was 4.5 months.

Interestingly, after decreasing to 10% during the second and third quarters, the mortality rate increased to 25% during the fourth quarter. No deaths were recorded during the six-week extension that corresponds with the extra time spent, post-relocation, by the 12-months-and-greater relocation group.

Logically, patients in the northern United States may have a higher mortality rate during the winter months of January, February and March. Therefore, to see if such a pattern would also occur in the southwest, a comparison of mortality rates by months was also computed.

Table 6. Numbers of Subjects Who Died by Sex and Monthly Periods Between Date of Relocation and Date of Death (n=31).

Monthly Period	Subjects Who Died			% of Deaths by 3 Month Period
	Males	Females	Total	
.5	2	3	5	
1.0	0	4	4	
1.5	1	6	7	
2.0	0	1	1	
2.5	0	0	0	
3.0	0	0	0	
Totals	3	14	17	55
3.5	0	0	0	
4.0	1	0	1	
4.5	0	1	1	
5.0	0	0	0	
5.5	0	0	0	
6.0	0	1	1	
Totals	1	2	3	10
6.5	0	1	1	
7.0	0	1	1	
7.5	0	0	0	
8.0	0	0	0	
8.5	0	1	1	
9.0	0	0	0	
Totals	0	3	3	10
9.5	0	1	1	
10.0	0	2	2	
10.5	0	2	2	
11.0	0	1	1	
11.5	0	2	2	
12.0	0	0	0	
Totals	0	8	8	25
12.5	0	0	0	
13.0	0	0	0	
13.5	0	0	0	
Totals	0	0	0	0
GRAND TOTALS	4	27	31	100

Results are shown in Figure 4. March 1988 had the highest number of deaths (9). These deaths corresponded with the three monthly post-relocation modes previously cited: at .5 months - 2 deaths, at 1 month - 2 deaths, at 1.5 months - 5 deaths. The three deaths in January 1989, occurred 10.5 months after relocation (2) and 11.5 months after relocation (1).

Question 3. Was there a significant age difference between the patients that died and those that lived in relation to age?

The mean age of the two groups (86 years for those that died and 81 years for those that lived) showed a statistically significant difference ($t = 2.155$, $p = 0.05$), indicating that the persons who died were significantly older than those who lived. The age range of the two groups was similar, however, 61-101 years for those that died and 62-102 for those that lived.

Question 4. Was there a significant age difference between the sexes in relation to (a) the whole sample, (b) those that died, and (c) those that lived?

Three student t-tests were calculated to compare the age differences by sex. All three tests were computed using a probability level of $p = .05$ with two degrees of freedom.

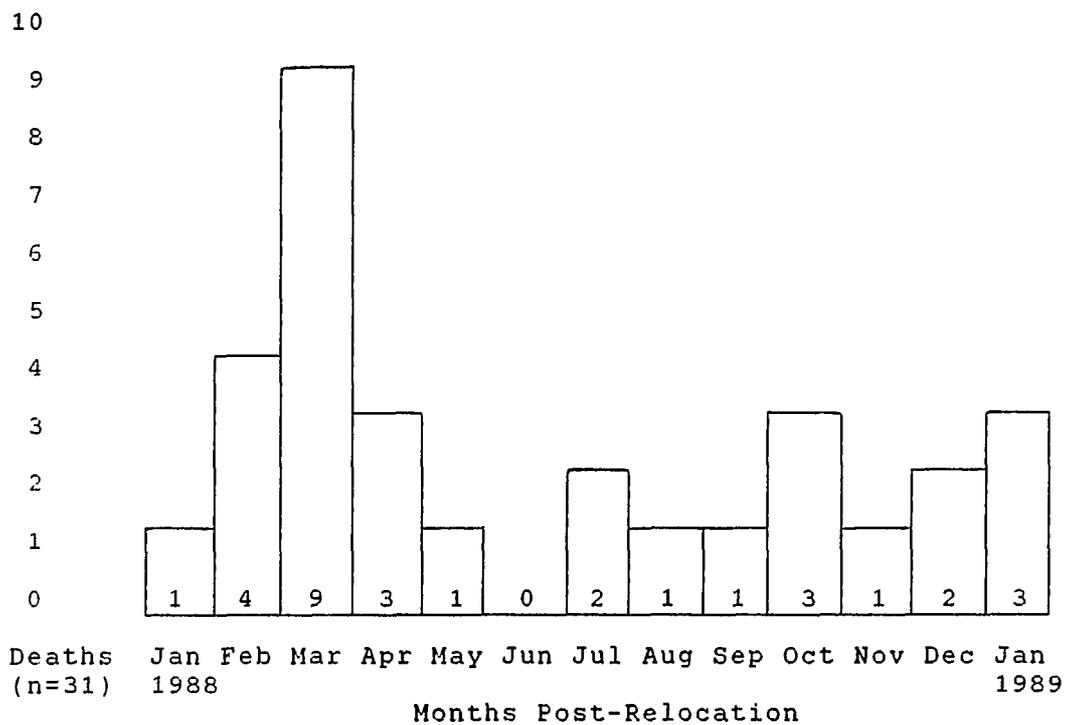


Figure 4. Numbers of Deaths of Subjects During the 13.5 Month Post-Relocation Period.

None of the tests for significant age difference by sex were statistically significant: t-test for the group as a whole was ($t = .997$, $p > .05$); for those that died ($t = .223$, $p > .05$); and for those that lived ($t = .771$, $p > .05$).

Question 5.a. What comparisons were there between the subjects who died and those that lived in relation to diagnoses?

These data were analyzed according to both multiplicity of diagnoses and individual diagnoses. The mode was two diagnoses for both those subjects that died and those that lived. The mean number of diagnoses for those that died was 3, and 2.8 for those that lived.

Dementia was the most frequently occurring diagnosis among subjects in both the group that died and the group that lived. The most frequently occurring diagnoses found among the subjects are presented in Table 7. Cerebral vascular accident was the second most frequently occurring diagnosis for those that lived, while it was the sixth most frequent diagnosis for those that died.

Table 7. Comparison of Frequency Distributions by Diagnoses of Living Subjects and Those That Died During a 13.5 Month Relocation Period (n=77).

Diagnoses	Living (n=46)		Died (n=31)	
	#	%	#	%
Dementia	24	52	18	58
Degenerative Joint Disease	10	22	13	42
Arteriosclerotic Heart Disease	10	22	12	39
Fractures	8	17	9	29
Hypertension	5	11	5	16
Cerebral Vascular Accident	11	24	4	13
Cancer	3	7	3	10
Congestive Heart Failure	3	7	3	10
Parkinson's Disease	5	11	3	10
Diabetes Mellitus	6	13	1	3

Note: Because all the patients in this study had two or more diagnoses, the frequency of occurrence of all diagnoses are more than the total number of patients.

Question 5.b. What comparisons were there between the patients that died and those that lived in relation to frequency of acute hospital admissions?

Acute hospital admissions were measured before and after relocation. Prior to relocation, seventy-seven percent (24) of the residents who died had at least one acute hospital admission. In the group that lived, 48% had hospital admissions prior to relocation. The percentage of acute hospitalizations increased to 88% for those residents that died within the first two weeks after relocation. After relocation 26% of the residents that died had an acute hospital admission, compared with 28% of the living residents.

Question 5.c. What comparisons were there between the residents that died and those that lived in relation to the number of years spent in a nursing home?

Those residents that died had a range of 1 to 14 years, compared with a range of 1 to 20 years for those that lived. The two groups' modes and means were similar. The group that died was bimodal, 5 years (n = 7) and 10 years (n = 7), with a mean of 6.4 years. The living had a mode of 5 years (n = 7) and a mean of 6.3 years.

SUMMARY

The findings for this study of 77 elderly nursing home residents who were relocated showed that 31 (40%) of the sample died during the 10.5 to 13.5 months the subjects were relocated. Of the 31 subjects that died, 17 (55%) died within the first two months after relocation. Sixteen (52%) of those 17 patients died within six weeks of being relocated.

Frequency of mortality increased with age. For those 60-69 years of age, 14% died, compared with 73% for those 90-99 years of age. Age was the only variable that showed a statistically significant difference between those that died and that lived ($t = 2.15$, $p = .05$), indicating subjects who died were older. Those that died had a mean age of 86 and those that lived a mean age of 81 years. Contrary to other studies, more of the women (42%) than men (31%) died. Student t-test results, based on age differences by sex, were not significant in any of the study's calculations.

There were few differences in the diagnoses between the group that lived and the group that died. Dementia was the number one diagnosis for both groups. The two groups also had similar numbers of multiple diagnoses. Findings for acute hospital admissions, before and after relocation, and the numbers of years spent in a nursing home were also the same for those that lived and those that died.

CHAPTER 5

CONCLUSIONS, RECOMMENDATIONS and IMPLICATIONS

Seventy-seven elderly nursing home residents were relocated over a three month period from an Arizona county nursing home to thirteen other local nursing homes. Investigating the mortality rates of those relocated residents over a 13.5 month period was the focus of this study. The conclusions of this study, based on findings in Chapter 4 are presented here. Further research recommendations and nursing implications are also discussed.

CONCLUSIONS

Several of the characteristics of this study's nursing home sample were similar to those characteristics found by other gerontological researchers. Subjects' mean age of 83 years was comparable to the 84 years of age reported by Harper & Lebowitz (1986) as being the mean age for the nursing home population in their study. The level of dementia found in this study (58% for the patients that died and 52% for the patients that lived) compares to Kramer's

(1983) statement that, "50 - 60% of nursing home residents suffer from some kind of mental disorder...actual distribution unknown" (Harper & Lebowitz, 1986, 309).

There were some differences between the characteristics of this study's sample and those found in the literature. One difference was the high female to male ratio. Eliopolous (1987) cites a female to male ratio of two or 3:1 for the over 60 age group. The female to male ratio in this study's nursing home sample was 5:1. This high ratio may in part be due to women's greater longevity, or the fact that the sample was from an institutionalized population.

The literature cites a wide variety of annual mortality rates after relocation: Pruchno & Resch (1988) - 2%, 9%, 18%; Gutman & Herbert (1976) - 33.33%. Wolanin (1978) states that in 1974 the annual national mortality rate for non-movers was 28%, and a state rate in Pennsylvania that same year was 27%. Compared to these mortality rates, the mortality rate of 40% found in answer to study Question 1., "What was the over all mortality rate for a group of residents who had been relocated for 13.5 months?," was high. That mortality rate might have been even higher, had data collection been conducted after the 37 patients in the less-than-12-months relocation group (some of whom were relocated only 10.5 months) were relocated one full year, because six subjects in the greater-than-12-months

relocation group died between 10.5 and 11.5 months after relocation. The extra six weeks over one year period that the greater-than-12-months relocation group were relocated did not affect the study's findings, however, because no subjects died during that interim.

The cause of death for the study subjects was not available data. Advanced age as was found in Question 2.a., "What was the mortality rate of the relocated patients according to age?," could have been a contributing factor. Mortality rates (13% for those in their 60s and 73% for those in their 90s) increasing with age was expected. The centenarians, however, were an exception. Of the four patients who were over 100 years of age, only one (25%) died. That low mortality rate could have been due to the small number (4 patients, 6%) of centenarians in the sample. Other than their low mortality rate, there was little that was remarkable about the centenarians. Their lengths of stay in the nursing homes and number of diagnoses were similar to the sample's averages. The one female over 100 who died did so seven months after her relocation; but the other three centenarians were still alive 11, 12.5 and 13 months after their relocations.

The study's results on Question 2.b., "What was the mortality rates of the relocated patients according to sex?," were contrary to the literature which reported that

males have a higher mortality rate than females after relocation. For example, of 2,174 patients in a state hospital for the chronically ill, who were relocated, 21.7% of the males over 75 died, compared to 13.7% of the females (Wolanin, 1978). Tallmer, et al. (1984) also reported that more males than females died on relocation. Conversely, the females (42%) in this study had the higher mortality rate when compared with the males (31%). Eighty-seven percent of those that died in this study were female. Since the females made up 83% of the sample, a high mortality rate was expected. It was not expected, however, that as a discrete group, the women would have a greater mortality rate than the men.

The findings for Question 2.c., "What were the mortality rates of the relocated residents according to diagnosis?" were as expected. The elderly subjects had several diagnoses, mean = 3, as is characteristic of the gerontological population. Rabin (1987) states that 80% of the non-institutionalized elderly have at least one chronic condition. He found that of the institutionalized elderly over 65: 44% had circulatory disease (30.5% in this study had ASHD), 6% had diabetes (in this study 8% of the patients had diabetes), 5% had musculoskeletal disease (18% in this study had osteoarthritis), 3% had hip fractures (in this study 23% had fractures of the hips or arms), and 16% had

mental problems (55% of the patients in this study had some form of dementia). Perhaps the high mortality rate in this study was related to the higher than normal incidence of dementia and physical disability present in this study's subjects. Tobin & Lieberman (1976), citing Goldfarb's 1971 work, claim that dementia and physical disability, along with incontinence, are the strongest predictors of mortality among the elderly who become institutionalized.

The findings in Question 2.d., "What were the mortality rates for the relocated residents according to nursing home placement?," did not indicate that one nursing home was better than another, since pre-relocation morbidity was not measured. It would appear, however, that nursing home #2 had the lowest proportional mortality rate, since it had the second largest number of relocated residents (12), and only two of those died (Table 5, page 60).

The most startling findings in this study were the high mortality rates immediately following relocation, which were found in response to question 2.e., "What were the mortality rates of the relocated residents according to time post-relocation?" This finding is consistent with Tobin & Lieberman's (1976) assertion that during the tenuous first year after relocation, the first quarter, or first three months, has the highest mortality rate. In this study 16

residents, or 52%, of those that died did so within six weeks of their relocation (Table 6, page 62).

The early post-relocation deaths, which clustered at 0.5, 1.0 and 1.5 months, lends credence to the stress component of this study's conceptual framework. In that framework the stressor, relocation, can lead to health changes. Depending upon the individual's coping abilities, he will either adapt to the stressor and continue to have various levels of good health, or he will not adapt and will suffer from poor health. Death was conceptualized as the most severe form of maladaptation and poor health. In such a context, it could be said that the 31 patients in this study who died did not adapt to their relocation.

Question 3., "Was there a significant age difference between the residents that died and those that lived?," was answered in the affirmative. The mean age difference, 86 years for those that died and 81 years for those that lived, was found to be statistically significant, $t = 2.155$, $p = 0.05$. Therefore, age did appear to increase vulnerability to relocation. This finding was documented in a recent national-level data analysis, which compared nursing home and community mortality rates and found that age and morbidity explained the higher nursing home rates (Coffman, 1983).

None of the findings from three separate t-tests for Question 4., "Was there a significant age difference between the sexes in relation to (a) the whole group, (b) those that died and (c) those that lived?," were statistically significant. A finding of no statistical significance was expected in association with (b) those that died, because the mean age difference between males (85 years) and females (86 years) was only one year. The finding of no significance was not expected, however, in either (a) the group as a whole (males' mean age 80 years, females' 83) or (c) those that lived (males' mean age 78 years, females' 81), where the mean age differences were three years.

The number of diagnoses being essentially the same was one finding to Question 5.a., "What comparisons were there between the subjects who died and those that lived in relation to diagnosis?." Those subjects who died had three diagnoses and those that lived had 2.8. When the most frequent diagnoses of those that died and those that lived were compared, their top four diagnoses were also the same.

The finding to Question 5.b., "What comparisons were there between the subjects who died and those that lived in relation to frequency of acute hospital admissions?," was that there were more admissions prior to relocation among the residents that died (77%), than those that lived (48%). However, prior to 1988, all Medicare nursing home admissions

had to be preceded by a hospitalization. These data may be a reflection of that Medicare policy, rather than an indication of greater morbidity. This conclusion is supported by the finding that after relocation, more of the living residents (28%) had acute hospital admissions than did those that died (26%).

The finding on the last study Question 5.c., "What comparisons were there between the subjects who died and those who lived in relation to number of years spent in a nursing home?," indicated that there was no difference between the two groups in this area. The two groups' mean lengths of stay were similar, 6.4 years for those that died and 6.3 years for those living. Some of the living subjects had been nursing home residents longer than some of those that died, which may be an indication of a greater ability to adapt. Overall, except for the greater age of those that died, the variables studied were similar for both the residents that died and those that lived.

RECOMMENDATIONS FOR FURTHER STUDY

One recommendation for further investigation of mortality rates following relocation is for a descriptive/correlational study of admissions to nursing homes. Variables of inquiry would be: (1) level of ADL functioning, (2) mental status, (3) level of morbidity,

(4) type and amount of pre-relocation preparation, (5) cause of death, and (6) time interval between date of relocation and date of death.

Since most nursing homes use some type of scale for ADL functioning and mental status, it would be possible to measure these areas of interest. The measurement for level of morbidity could be as simple as a five-point Likert scale from minimal to high; or a more complex instrument with weighted means which incorporated age, level of nursing care, ADL functioning, mental status, coping skills and diagnoses into a composite figure so the morbidity level could be developed. Correlational statistics could then be run on morbidity, age and mortality.

Further results from the time intervals between relocation and death would be useful for determining whether or not the high immediate post-relocation mortality rates found in this study were representative of national trends.

IMPLICATIONS FOR GERONTOLOGICAL NURSING

One implication found in this study, in connection with the high immediate post-relocation mortality rates, is the importance of gerontological nurses in nursing homes doing detailed nursing assessments and evaluations on all newly admitted patients. There should then be weekly evaluations during the critical first six weeks following admission.

During the 7-12 week period evaluations could be performed bi-monthly, and during the 4-12 month period evaluations could be done monthly.

To augment the nurse's assessment with quantitative measurement, the use of a new tool, the Multidimensional Observational Scale for Elderly Subjects (MOSES), is suggested. MOSES, a 40-item instrument, can be completed by regular staff members, including nursing assistants, in most geriatric settings (Helmes, Csapo & Short; 1987). This scale assess five areas of functioning with eight items each: Self-Care Functioning, Disoriented Behavior, Depressed/Anxious Mood, Irritable Behaviors, and Withdrawn Behavior (Helmes, et al., 1987).

Of interest to nurses caring for the nursing home population addressed in this study is that, "monitoring of patient progress is possible, as MOSES has been shown to be sensitive to change over time" (Helmes, et al., 1987, 400). Wide spread use of MOSES, or some other quantitative measure, as a clinical tool could help to standardize and quantify future nursing research.

Two types of patients identified in this study have augmented the need for increased surveillance by nursing home personnel. Those two types of patients are those with a diagnosis of dementia, and those in their late 80s and 90s, both of whom had increased mortality rates after

relocation in this study. Since 61% of the patients in this study were over 80 years of age and 55% had some form of dementia, nursing assessment, active care planning and evaluation must be constant and of the highest caliber. Through early recognition of behavioral deterioration, and by managing influencing stimuli so as to conserve the energy levels of these elderly patients, thus assisting them to adapt better; it is possible that the nurse in a receiving nursing home could help to lower post-relocation mortality rates.

Extended care facility nurses are not the only nurses involved in the care of gerontological patients. In our acute care hospitals older people account for 42% of all days of care (AARP, 1987). The implications of this study, therefore, extend to acute care nurses, who must also become aware of the potential for increased morbidity or mortality after relocation, and prepare their elderly patients for transfer/relocation.

Several interventions, that appear to decrease mortality after relocation, have been identified. Two such interventions reported in the literature are that the choice to relocate be made voluntarily (Hall, 1984, Chenitz, 1983, Kowalski, 1981), and that preparatory counseling be provided (Wolanin, 1978; Schultz, 1977). Schulz & Brenner (1977) call these two interventions "control" and "predictability",

and believe they are important mediators of response to the stress of relocation. Gerontological nursing specialists, working in the acute care setting could assist in achieving a positive response to relocation by monitoring discharge planning, and by assisting staff to assess and prepare their patients for relocation. Instruction in the use of a MOSES-type assessment tool at this stage (pre-location) would enhance the data base for transfer and assure continuity of care in the ECF.

Nursing home and acute care nurses are familiar with the use of the developmental model in their practice. These recommendations are an extension of that model for the older patient; because the common themes in developmental tasks for the elderly are adjusting to significant changes (like relocation), finding meaning in existence and preparing for death (Eliopoulos, 1987). Enhancing the quality of life is the role of all nurses, whether practicing in an acute care setting or an extended care facility.

APPENDIX A

HUMAN SUBJECTS APPROVAL

Appendix A



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF NURSING

MEMORANDUM

TO: Loretta Anderson, B.S., R.N.

FROM: Linda R. Phillips, PhD, RN, FMAA *LRP*
Associate Dean for Research

DATE: April 10, 1989

RE: Human Subjects Review: "Relocation & Mortality Study of 77 Elderly
Nursing Home Patients"

Your project has been reviewed and approved as exempt from University review by the College of Nursing Ethical Review Subcommittee of the Research Committee and the Director of Research. A consent form with subject signature is not required for projects exempt from full University review. Please use only a disclaimer format for subjects to read before giving their oral consent to the research. The Human Subjects Project Approval Form is filed in the office of the Director of Research if you need access to it.

We wish you a valuable and stimulating experience with your research.

LRP/ms

APPENDIX B

DATA COLLECTION TOOL FOR RELOCATION

DATA COLLECTION TOOL FOR RELOCATION

Fill in the blanks.	<u>Computer Conversion</u>
A. Demographic information on patient records.	
1. Patient's initials _____	_____
2. Sex _____	_____
3. Patient's date of birth (DOB) _____	_____
4. Number of years patient spent in county system as a nursing home patient _____	_____
5. Number of diagnoses _____	_____
6. Types of diagnoses _____	_____
7. Date of relocation (DOR) _____	_____
8. Name of nursing home for patient's final relocation _____	_____
9. Number of patient's admissions to an acute hospital before final relocation _____ after final relocation _____	_____
10. Patient's date of death (DOD) _____	_____
B. Information computed by the researcher from the above demographics, and used in the data collection.	
11. Number of months between DOR and DOD, in half month increments _____	_____
12. Age of patient at DOR in years _____	_____
13. Age of patient at DOD in years _____	_____
14. The age of living patients at date of data collection (1/31/89) _____	_____

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