A Study of Loneliness and Health Related Complaints in Residents of High Rise Apartment Buildings for the Elderly

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A STUDY OF LONELINESS AND HEALTH RELATED COMPLAINTS IN RESIDENTS OF HIGH RISE APARTMENT BUILDINGS FOR THE ELDERLY

by

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B.S.N. May 1980, Old Dominion University

A Thesis Submitted to the Faculty of Old Dominion University in Partial Fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE

NURSING

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The purpose of this study was to explore feelings of loneliness among relocated elderly residents of age-segregated, high-rise apartment buildings and any relationship between these subjective feelings of loneliness and certain variables which were hypothesized as predictors of feelings of loneliness. The variables studied in relation to loneliness were cathectic investment, activity, and perceptions of health.

A non-experimental survey design where data were collected by interviewing subjects was used. The sample consisted of 18 female residents of a high-rise apartment building for the elderly. Each was interviewed using the Loneliness Rating Scale developed by Dr. Gloria M. Francis and a Health Information Questionnaire. No significant correlations were found between loneliness and the three variables; cathectic investment, activity, and perceptions of health. However, there were indications that further refinement of the cathectic investment portion of the tool and the development of a specific tool for evaluating activity might yield more significant results.
Dedication

This thesis is dedicated to my husband, Harvie, and my children, Claire and Jeanne, without whose love and support it could not have been finished.
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First, I would like to thank my committee: Dr. Evelyn Singer, Linda L. Davis, and Dr. Helen Yura for their help and encouragement. I would particularly like to thank Linda Davis, without whose help I could not have finished this thesis.

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TABLE OF CONTENTS

DEDICATION ............................................. ii
ACKNOWLEDGEMENTS .................................... iii
LIST OF TABLES .......................................... vi
LIST OF FIGURES ....................................... vii

Chapter
1. INTRODUCTION ...................................... 1
   PURPOSE AND PROBLEM STATEMENT ................. 4
   THEORETICAL FRAMEWORK ............................ 4
   OPERATIONAL DEFINITIONS ......................... 9
   LITERATURE REVIEW ................................ 10
   LIMITATIONS ......................................... 19
   HYPOTHESES ......................................... 20

2. METHODOLOGY ....................................... 21
   PURPOSE AND RESEARCH DESIGN ..................... 21
   VARIABLES ......................................... 21
   SETTING ............................................ 22
   POPULATION/SAMPLE ................................ 23
   TOOLS .............................................. 24
   RELIABILITY ....................................... 26

iv
LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Income and Education Levels for Residents</td>
<td>31</td>
</tr>
<tr>
<td>2. Residents' Perceptions of Limitations on Activity Imposed by Chronic Illness</td>
<td>33</td>
</tr>
<tr>
<td>3. Mean and Correlation Scores for the Hypothesized Predictors of Loneliness</td>
<td>35</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Model for Role Changes and Losses Related to Aging</td>
<td>7</td>
</tr>
<tr>
<td>2. Study Model of the Relationship of Major Life Change, Loneliness and the Study Variables</td>
<td>8</td>
</tr>
</tbody>
</table>
Chapter 1

Introduction

We live in a society whose population is aging. It is estimated that from the years 1970 to 2000 the 60-and-over population will increase by 50%. By the middle of the twenty-first century there may be 30 million people in the United States who will live 25 years beyond the age of 65. We also live in a society which is undergoing a revolution in health care, with the emphasis changing from cure to prevention of illness, from health restoration to health maintenance. There is concern in the society about how the growing number of elderly citizens will be supported and cared for. One solution to the housing problems of the elderly that is growing rapidly in popularity is the age-segregated high-rise apartment building.

In the United States the construction of age-segregated, moderate to high density apartment houses is a relatively new endeavor of the last 20 years (Howell, 1979). These high-rise apartments are multiplying rapidly and offer a variety of health and social services to their residents. At first glance they appear to be the ideal solution to many of the problems in living arrangements faced by the elderly. They offer the opportunity for continued independent living with fewer problems of home
maintenance, fewer transportation problems, a simplified lifestyle, and improved access to services such as health care, social groups and activities.

Relocation involves a greater adjustment in lifestyle for elderly persons because they are also experiencing many other life changes associated with aging (Lange, 1980). There have been various studies which addressed the effects of relocation on the elderly and the literature describes the concept of transplantation shock or the relocation effect experienced by elderly persons who change living environments. The negative effects of this phenomenon include depression, stress, decreased life satisfaction, and increased mortality. Two major questions need to be answered.

Do all older people under all conditions experience negative consequences following a move, or are certain individuals more susceptible to negative consequences from relocation? What can be done to facilitate adjustment to a new setting and reduce the potential transplantation shock? (Pastalan, 1983, p.189).

One study (Sullivan & Armignacco, 1979) of comprehensive health maintenance for the residents of a high-rise apartment building for the elderly found that of 50% of residents who were in poor health, 2/3 were socially isolated and those socially isolated persons used health services less than those who were not isolated. It appears from this study that the availability of health and social services is not the major factor in the
elderly person's use of these services. Nor does the availability of these services mean that the older person will experience less loneliness or a higher degree of life satisfaction than his counterpart living independently in the community.

The majority of available studies concerned with social isolation in the elderly operationalize isolation as the numbers and types of social contacts the elderly person has within a specified span of time. However, solitude may be a voluntary way of life. Should a person be identified as socially isolated based on the number of social contacts he has, rather than his perception of the quality of these contacts? Does the person see himself as lonely and isolated, separated from people or things that were important to him? Is it this perception that leads to further withdrawal from both social contacts and health services and to an increase in health related complaints? Svanborg (1979) found that those who were lonely did not have a higher incidence of definable somatic illness but did report feeling tired and ill more often, and had a markedly higher consumption of drugs than did the non-lonely group.

Since the move to age-segregated high-rise apartment buildings represents a major change in lifestyle which requires major adjustments on the part of the elderly person, the residents of such buildings were judged to be appropriate subjects
for a study of loneliness among the relocated elderly and its' effects on their feelings about their health.

Purpose and Problem Statement

The purpose of this research was to study the effects of major lifestyle change and the loss of valued connections on feelings of loneliness and isolation in residents of high-rise apartment buildings for the elderly, and the relationship of these feelings to the incidence of health-related complaints. The study may provide clues which will help identify elderly individuals who are at risk for transplantation shock and subsequent feelings of loneliness and isolation and an increase in feelings of fatigue and illness. Once at-risk individuals are identified, programs may be planned and instituted to prevent loneliness and isolation in the relocated elderly.

Theoretical Framework

The theoretical framework for this study was social disengagement theory and the activity theory of aging. Social disengagement, as originally proposed by Cumming and Henry (1960), states that normal aging is a mutual withdrawal or disengagement between the aging person and the social system to which he belongs. In further refinement of the theory Cumming (1979) proposed that the most crucial step in disengagement lies in finding a new set of rewards to replace the esteem provided by achievement in former roles. As the number of groups to which the older person
belongs is reduced, those remaining become more important. Relocation to an age-segregated high-rise apartment may disrupt these valuable connections. The loss of these important groups leads to loneliness and the feelings of loneliness lead to withdrawal, social isolation, and fewer opportunities for activity, particularly social activity. Cumming and Henry have proposed that disengagement is mutual and voluntary, but it may rather be the result of circumstances such as relocation and declining energy resources. Proper planning by nurses and other responsible people could avoid the loneliness, withdrawal and declining activity levels by providing opportunities to develop a new set of rewards. In those buildings which offered on-site health care services, these services were provided by nurses or nurse practitioners. In those buildings which did not offer such on-site services, the residents were often seen by the public health nurse. These nurses are the ideal people to plan and institute programs designed to combat loneliness and isolation as they are accustomed to assessing the physical and psychosocial needs of groups and to designing strategies to meet these needs.

The activity theory of aging (Lemon, Bengston, & Peterson, 1979) proposed that there is a positive correlation between activity and life satisfaction and that the greater the role loss, the lower the life satisfaction. Activity in general, and interpersonal activity in particular, seem to be consistently
important in predicting an individual's sense of well-being in later years. The lonely and isolated old person has a low level of interpersonal activity and therefore, a lower self concept. Loneliness can lead to feelings of unworthiness, personal unattractiveness, and decreased confidence in relationships. Foster (1978), Kramer (1967), and Svanborg (1979) found a positive relationship between reported feelings of loneliness and the number of health related complaints, and an inverse relationship between these feelings and participation in available social events and the forming of new attachments. The relationship between reported feelings of loneliness and the rate of use of health services is somewhat ambiguous, with both increases and decreases in the rate of use being reported by different studies.

Meleis (1975) proposed a model for the role changes and losses related to aging, disengagement and resultant role loss which illustrated a positive feedback loop initiated by the loss of valued roles and leading to social isolation (see Figure 1). Age identification may be an intervening variable between role change and adjustment. Lewin (1939–1945) proposed the concept of extension and differentiation of the life space of the individual using the factors of ego involvement and level of aspiration in the interpretation of what constitutes reward. This concept is an important basis for the disengagement theory which proposes the substitution of new rewards for those lost with the loss of former roles.
Figure 1. Model for Role Changes and Losses Related to Aging.

The two theories of aging, disengagement and activity, have not previously been considered interactively, but both influence how the older person feels about himself, how he feels about his health, and his ability to adjust to unavoidable changes in lifestyle. Disengagement, as now proposed, does not advocate complete and mutual withdrawal between the person and society. Rather, it proposes a change in roles for the aging person and the substitution of new rewards to replace those which were dependent on achievement in the disengaged roles. Failure to substitute new rewards which provide role support for the older person leads to loneliness and withdrawal. This leads to declining levels of activity which the activity theory has linked to lower self esteem and a declining sense of well-being. Alternatively, maintenance of a wide variety of roles and social interactions provide the opportunities to attain new rewards. "Activity in general, and
interpersonal activity in particular, offer chances for acquiring role support or reinforcements which sustain one's self concept" (Lemon, Bengston, & Peterson, 1972, p.67).

Francis (1979) found that loneliness in the elderly is often secondary to the loss of valued connections, persons or things for which he has an emotional or cathetic investment. Loss of valued connections is accelerated and exacerbated by relocation, especially if involuntary. Loneliness leads to social isolation.

The model for this study (see Figure 2) seeks to conceptualize the interaction of these factors and their influence on the older person's adjustment to the major life change of relocation.

Figure 2. Study Model of the Relationship of Major Life Change, Loneliness and the Study Variables
Attention given to the design of health engendering environments may either significantly raise the functional competence of the individual or elevate his functioning without altering his basic competence (Lawton, 1974). But in order to provide the proper health engendering environment, it is first necessary to identify the exact nature of the problems to be faced. The problem for this study was to answer some basic questions about the impact of environmental change on the elderly. Does the move to age-segregated high-rise apartment buildings lead to loneliness, social withdrawal and an increase in perceived health problems? Does this lead to an inability or unwillingness to utilize fully available health and social services? Does the level of activity engaged in by the person, the amount of involvement in the activities, and the degree to which activity is limited by chronic disease affect feelings of loneliness?

With the continued growth of the numbers of the elderly, and with the growing tendency for them to continue living in the community, it becomes important to provide methods for discovering those who are vulnerable to isolation and prevent it from affecting their adjustment (Zubin, 1980, p.ix).

**Operational Definitions**

Age-segregated high-rise apartment building - apartment buildings having more than three stories where residency is contingent on the age of the individual, specifically where the person must be age 55 or older.
Elderly person - a person who is 65 years of age or older.

Loneliness - a subjective feeling of solitude and isolation which for this study is operationalized as the individual's score on the Loneliness Rating Scale (see Appendix A).

Health complaint - a statement by subjects that they have experienced one of the symptoms listed on the health information questionnaire (see Appendix B).

Cathectic investment - the endowment of social and physical objects (people and things) with meaning, import, and energy (Francis, 1976). Cathectic investment was measured by means of the cathectic investment portion of the Loneliness Rating Scale.

Literature Review

It is only in the last twenty years that sociologists and health professionals have begun to study the effects of a move to age-segregated high-rise housing on the physical, social, and psychological well-being of the elderly population. Clark, at the 1971 White House Conference on Aging, identified certain characteristics common to the majority of senior citizens.

1. They must maintain themselves on a fixed income at a time when costs are rising.
2. They display a higher incidence and prevalence of chronic diseases.
3. They have a tendency to withdraw from helping services for
fear of depersonalization and misunderstanding.

4. Long held cultural predispositions can negatively affect their use of services.

Consideration of these characteristics is important in beginning to develop nursing approaches designed to meet the needs of this group. Identifying the needs of isolated individuals, increasing social bonding among residents, and meeting specific health needs appear to be the answer to health services which result in improved health status (Clark, 1971). Clark also identified a self-perpetuating problem of lessened motivation, fewer activities, and deterioration in health. It is this problem that nursing must endeavor to address in order to provide the most effective health care for the elderly.

Kramer (1967) found that elderly persons living in high-rise apartment buildings expressed feelings that their health limited their doing things and going places they desired. Kutner (1956) in a survey of 500 people over 60 years of age, found that willingness to use services was affected by marital status and having living friends. Social activity appeared to be the catalyst toward using health services but not enough is known about the effect of providing preventive health services on affective reactions such as loneliness, grief, and a sense of loss of old social contacts (Kutner, 1956).

A 1974 national survey (Howell, 1979) of residents of
age-segregated high-rises for the elderly found that 28% reported none or only one on-site friend although the average length of residence was 7.5 years, 57% reported no participation in on-site activities, and 59% reported no participation in off-site programmed activities during the previous year. Only 14% reported friends and 8%, relatives in the neighborhood. Two possible hypotheses were generated by these figures: 1) these elderly were not adapting from former lifestyles, or 2) the environments were not physically or socially supporting new learning (Howell, 1979).

Holmes and Rahe (1969), in a comparative study using their Social Readjustment Rating Scale, found a marked difference in the elderly and a normative sample in the magnitude assigned to life events. Change was perceived as more threatening and demands for readjustment more often exceeded the capabilities in the elderly (Muhlencamp, 1975). Lawton (1974), in an impact study done by the Philadelphia Geriatric Center over a one year period, reported that elderly individuals who were relocated but not institutionalized displayed a decline in functional health one year following the relocation. O'Neill and Boosinger (1981) found that the factors affecting adjustment to a new environment were: 1) preparation for the move, 2) the person's attitude toward the move, and 3) the person's level of functioning before the move.

Relocation involves a greater adjustment in lifestyle for elderly persons because they are also experiencing many other life
changes associated with aging (Lange, 1980). There have been various studies (Aldrich & Mendkoff, 1963; Killian, 1970; Pablo, 1977) which have found that relocation has negative consequences such as depression, stress, and decreased life satisfaction. The concept of "transplantation shock" or "relocation effect" was discussed by Pastalan (1983) as a way of describing the effects often felt by elderly persons who change their living environments. He proposed two major questions.

Do all older people under all conditions experience negative consequences following a move, or are certain individuals more susceptible to negative consequences from relocation? What can be done to facilitate adjustment to a new setting and reduce the potential transplantation shock? (Pastalan, 1983, p.189).

Meleis (1975) proposed a model for role changes and losses related to aging, disengagement, and resultant role loss which demonstrated a self perpetuating situation which was initiated by the loss of valued roles and which led to social isolation (see Figure 1).

Disengagement, as originally proposed by Cumming and Henry (1960), described normal aging as a process of mutual withdrawal or "disengagement" between the aging person and the society to which he belongs. As the number of groups to which the older person belongs is reduced, those remaining become more important. Relocation disrupts these valuable connections. The loss of these important groups leads to loneliness and the feelings of loneliness
lead to withdrawal, social isolation, and fewer activities, particularly social activities. Further development of the theory (Cumming, 1979) proposed that the most important step in disengagement is finding a new set of rewards to replace the esteem provided by achievement in the former roles.

Bennett (1973) found that isolation in the elderly related to the absence of valued social roles or rolelessness and the absence of role partners who could provide support, nurturance, stimulation and interest sharing. Isolation resulted in low morale, impaired socialization, and decreased independence. Kelen and Griffiths (1983) reported that problems affecting living arrangements included erosion of purchasing power, declining health, loss of socially rewarding roles, declining physical mobility, lack of transportation, and isolation. They identified needs for security, mobility, privacy, affiliation, and esteem which affected morale and satisfaction with housing.

The activity theory (Lemon, Bengston, & Peterson, 1979) is based on the original proposal of Havighurst and Albrect that social role participation is important in a positive adjustment to old age. They found a positive correlation between participation in informal friendship groups and life satisfaction. This may be a result of the voluntary nature of this type of relationship and the fact that it is frequently more intimate in nature and therefore, is perhaps, the type of relationship most likely to
involve specific role supports. Their data did not support a linear relationship between frequency of activity and life satisfaction. The linear model, however, appears insufficient to capture the complex interplay between the individual and his changing social system. It may be that a model using systems theory would more adequately describe the factors affecting adaptation to aging and lifestyle changes.

Grier (1977) conducted two descriptive studies concerning the choosing of living arrangements for the elderly person. He used written descriptions of situations and had subjects select from three possible choices of living arrangements. Inappropriate living arrangements can result in serious impairment of function, hospital readmissions, and even death. Based on the records of a Visiting Nurse's Association and readings in the literature, Grier identified seven needs which must be considered in choosing appropriate living arrangements for the elderly person--activity, diet, environment, medications, ability for self care, availability of health care, and social needs. He found that people fail to make rational decisions about living arrangements because of personal-organizational reasons (social influences, society's view of the choice), failure to consider all the relevant factors, or failure to use an objective and systematic decision making process. Grier concluded that this may result in a lack of congruence between the person and the environment and in loneliness and
isolation for the older person involved.

Svanborg (1979) did a prospective longitudinal population study, begun in 1971 with follow-up in 1976, of variables linked to affective mental disorders in the elderly and found that 12% of males and 25% of females at age 70 suffered from loneliness to a degree that it was a problem in their daily lives. This subjective feeling was related to being a widow or widower, to living alone, and to not speaking to anyone outside the home for days on end. His study was not limited to the residents of high-rise apartments but included the entire community. He did not elaborate on the specific living arrangements of the lonely versus the non-lonely group. He did, however, conclude that subjective feelings of loneliness were important as regards the elderly person's feelings about his health and consumption of drugs and health services.

Francis (1979) studied a probability sample of 42 persons residing in a home for the aged and found that loneliness was often related to separation from persons and/or things in which one has a cathetic or emotional investment. Relocation leads to separation and separation causes certain needs to be unmet, leading to withdrawal and loneliness.

Not all studies of relocated elderly reported negative effects. Carp (1978) and Weniecke (1979) both reported an increase in social contacts and improved living conditions for
the populations of the age-segregated high-rise apartment
buildings they studied. Wolanin (1978) identified some factors
which contribute to successful relocation: 1) involvement in
planning, 2) keeping many familiar aspects of the environment,
3) visits, counselling, discussions, and preparation for the move,
and 4) orientation programs.

Kahana & Kahana (1983) proposed four types of older movers
who adjust well to relocation, namely:

1) The explorers: older people who seek new lifestyles and a
different environment from that to which they have been
accustomed. They do not prepare carefully for a move and
may even move on impulse. They relish surprises.

2) The helpers: older people who seek fulfillment through
altruistic endeavors. They enjoy "doing for others" and
often engage in volunteer activities. They seek to relocate
to places where they can feel useful.

3) The fun seekers: those who have succeeded in finding
gratification in leisure oriented lifestyles and seek out
environments which maximize leisure options and facilities.

4) The comfort seekers: those who, during their retirement
years, often rented apartments in crowded, unsafe
neighborhoods and lived under trying economic conditions.
They view the move as an improvement in circumstances and
a reward for a lifetime of hard work.
Kahana and Kahana also proposed the concept of person-environment fit or congruence which affects adjustments to a new environment. This concept may help to understand why some older people adjust successfully to relocation while others become enmeshed in the cycle of loneliness, withdrawal, isolation, and more loneliness.

If society disengages from the elderly by isolating them and not accepting them as an important part of community life, a situation of negentropy starts and the elderly are pushed more and more to the fringe of society (Dieck, 1979). Special living situations and housing for the elderly must not be allowed to enforce their segregation and isolation. Dieck (1979) proposed that loss of roles in private life could, at least in theory, be overcome by an increase in roles in the community. Planners need to provide opportunities and settings which encourage this change in roles.

No studies were found which dealt with subjective feelings of loneliness in residents of age-segregated high-rise apartments related to their living arrangements or change in lifestyle. Most studied social isolation, which they operationalized as the number of social contacts a person has within a specified length of time. Efforts to substantiate the activity theory were also based on a linear correlation between the numbers of interpersonal activities the person engaged in and life satisfaction. However, this study
proposed that it is not someone else's perception of the older person as lonely, but the older person's own perception which is important in determining the success of adjustment to changes in lifestyle which accompany aging. Many factors contribute to social adjustment. This study addressed two of these factors, activity and cathetic investment, as they related to successful adjustment and to whether the person reported subjective feelings of loneliness. This study also sought to determine if there is a correlation between reported feelings of loneliness and perceptions of health as determined by the number of health related complaints reported by the person. The purpose of this study was to explore feelings of loneliness among relocated elderly living in age-segregated high-rise apartment buildings, and to determine whether these subjective feelings of loneliness were related to activity, cathetic investment, and perceptions of health.

Limitations

The smallness of the sample, the fact that the sample was selected on the basis of convenience, and the fact that only one age-segregated high-rise apartment building was used for data collection were study limitations. An additional limitation in the design was the absence of a control, or comparison, group.
The absence of a meaningful control group precluded comparison of the study group, residents of an age-segregated high-rise apartment building, with aged individuals in alternative living situations. A further limitation was imposed by the lack of opportunity to compare residents' pre-move scores on the variables studied with their post-move scores. The absence of pre-move scores precluded assessment of the degree of change in the variables which might be attributed to the change in living conditions.

Hypotheses

1. Residents of age-segregated high-rise apartment buildings who report continued high levels of activity will have a low incidence of loneliness as measured by the Loneliness Rating Scale.

2. Residents of age-segregated high-rise apartment buildings who score low on cathetic investment will also score low on loneliness as measured by the Loneliness Rating Scale.

3. Residents who have a high incidence of loneliness as measured by the Loneliness Rating Scale will report a high incidence of health related complaints during the previous month.

The following chapter is a presentation of the research methodology used in this study of loneliness and some of the variables which are thought to affect the occurrence among elderly residents of age-segregated high-rise apartment buildings.
Chapter 2
Methodology

Purpose and Research Design

The purpose of this study was to determine whether loneliness is a problem among residents of high-rise apartment buildings for the elderly. It was decided to study the affective reaction of loneliness rather than social isolation since the person's own perception of his lifestyle and the quality of his social contacts was believed to be more important in determining quality of life than the number of social contacts reported within a specified length of time.

A non-experimental survey design, where data were collected by interviewing subjects, was chosen to serve an exploratory function in determining whether residents of age-segregated high-rise apartment buildings are lonely and what factors might contribute to problems in adjusting to changes in lifestyle resulting from relocation.

Variables

The specific variables studied were cathetic investment, activity, and health related complaints and their relationship to loneliness. It was postulated that the degree of cathetic investment might prove to be a predictor of the degree of loneliness experienced. As indicated by previous studies
(Francis, 1979), those individuals who have a high degree of cathectic or emotional investment in the people or things which were important to them in their former home may feel a greater sense of loss when these connections are severed.

Activity was studied from two perspectives, the degree of activity and involvement in which the person was engaged and the extent to which the residents felt their activity was restricted by the presence of chronic disease. It was postulated that activity has a great effect on the person's adjustment to life change. It was also postulated that the degree of loneliness is a predictor of the number of health related complaints the person reports and his general feeling about his state of health.

Demographic data were collected concerning each individual's age, length of residence, marital status, income, education, mobility, and the presence of chronic disease.

Setting

As originally proposed, the research was to be conducted in four different age-segregated high-rise apartment buildings. However, the management of two of these sites declined permission to use their settings, the third agreed but withdrew before any data were collected. The fourth setting was approached, permission was given, and this site was the single one used in the study. It was a 12 story high-rise containing 200 apartments located in a large southeastern city. Residents were required to be 55 years
of age or older. The majority of residents received some rent subsidy from the Department of Housing and Urban Development. A recreation meeting room and a laundry room were located on the first floor. The entrance to the building was kept locked and the door could only be opened with a key or from individual apartments for security. An intercom system was provided so residents could identify callers before releasing the lock. Each apartment was provided with a "panic button" which the resident could push in case of need and receive immediate help. No regular on-site health services were provided in this setting. Thus, the two components of the model which had to do with the evaluation of health services (see Figure 2) could not be explored. This constituted a limitation in the study. There was a social club for the residents and a mini bus was provided each Wednesday to take residents shopping. The management had originally provided a social director but this service had been discontinued.

Population/Sample

The target population or the population to which the researcher wished to generalize the findings consisted of all residents of age-segregated high-rise apartment buildings for the elderly. However, the accessible population was those residents of a single age-segregated high-rise building. The sample consisted of 18 subjects, all of whom resided in this high-rise apartment building. The use of this convenience sample limits the generalizability of the findings.
Two methods were used to contact residents. Letters were distributed to each apartment explaining the study and asking the residents to sign it and return it to the social club president if they were willing to participate. The return rate for these forms was less than 10%. Also, the researcher attended two separate meetings with residents at the site to explain the study, answer questions and ask residents to participate. The residents who indicated that they were willing to participate were then contacted by telephone and an interview was arranged. The major difficulty encountered was in contacting those who were more susceptible to loneliness because they did not return the letters or attend social club meetings where the researcher was present. Two residents attempted to help the researcher gain access to other residents who seldom or never came out of their apartments. They were unsuccessful in persuading these residents to participate or even to discuss it. The limitation of using such a convenience sample must be acknowledged.

**Tools**

The primary focus of this study was to determine the extent to which loneliness occurred in the residents of these high-rise apartments for the elderly and its relationship to cathetic investment, activity, and to reported health related complaints. The data gathering tool for quantifying the subjective feelings of loneliness was the Loneliness Rating Scale.
which appears in Appendix A and was authored by Dr. Gloria M. Francis. Permission to use the tool was obtained from both Dr. Francis and Pergamon Press, the copyright holder. The tool consisted of a 16 question interview form of which five were indicators of cathetic investment and five were indicators of loneliness. Each of these items was represented by a 5-choice response scale. The specific response alternatives provided ordinal data. Question 15 on the original tool was eliminated as the focus of the study was not a hospitalized population. Question 16, which asked the residents to what extent they had experienced loneliness since moving to the apartment, was used as the criterion for checking the validity of the loneliness portion of the interview. The other questions were open-ended questions which asked for feelings or opinions.

Each respondent was asked to sign an informed consent form after which the instrument was administered. The interview was conducted in the resident's apartment with only the subject and the interviewer present. The subjects had to be able to understand the questions and to respond verbally. Scores for cathetic investment were computed by summing the responses for items 1, 2, 3, 5, and 6 while the loneliness score was computed as the sum of responses for items 8, 9, 10, 11, and 13. The numerical range for each score was 5-25.

The only other loneliness tool found in a search of the
literature listed 39 possible reasons for loneliness and required the subject to select the five which were most likely to make him feel lonely and then prioritize them. After this was done, further questions related to frequency, duration, and circumstances of these feelings. No reliability or validity data were given. The list was long and somewhat unclear and some of the items were irrelevant for the population of this study. The Loneliness Rating Scale was selected as the most appropriate tool.

The health information questionnaire was developed by combining two such questionnaires found in the literature. The symptoms included are those which have been documented in the literature as being more often associated with stress and mild depression rather than actual somatic illness. A copy appears in Appendix B.

Reliability

Reliability is a measure of the consistency of the instrument in performance (Polit & Hungler, 1978). Test related reliability coefficients were computed for both the cathectic investment and loneliness portions of the Loneliness Rating Scale by test-retest and coefficients of \( r = 1.00 \) were obtained by Dr. Francis and reported in the literature. The reliability scores obtained in this study were alpha = .22 (CI) and alpha = .08 (L).

Validity

Validity refers to the degree to which the selected instrument
measures what it is supposed to be measuring (Polit & Hungler, 1978). The question of validity is difficult to answer when attempting to measure subjective feelings such as loneliness. Criterion related validity was estimated by comparing the loneliness scores with external criteria which were also believed to measure loneliness. The external criterion used was the last question which asked "would you say you have experienced loneliness while you have been here?" The five response categories ranged from "very much so" to "no." This subjective measure was correlated with the objective score obtained from the loneliness portion of the interview. This strategy for estimating validity was used by Dr. Francis with probability samples from six separate populations. Data from three of these were used to test validity. The coefficients obtained were $r = 1.00, .64, \text{ and } .45$. Testing for significance was done using the critical-ratio $z$-test and all were significant at the .05 level using a two-tailed test. Therefore, the five item schedule for measuring loneliness appeared to measure objectively what the subjects were experiencing subjectively and calling loneliness.

Face validity represents a component of content validity and has to do with the apparent representation of desired items in a tool (Nunnally, 1978). The researcher tested the tool for face validity by interviewing a small group of individuals who were comparable in age to the sample group and it was judged to be
sufficient.

The questions relating to health were also tested and it was found that the individuals preferred to have questions read to them as part of the interview, rather than reading and answering the questionnaire themselves as originally intended. Therefore, during the actual data collection all questions including the demographic questions were read to the subjects who responded verbally.

**Human Subjects**

The study was approved by the Committee for the Protection of Human Subjects of the Department of Nursing of Old Dominion University. The risks to human subjects participating in this study were assessed as slight and were related to eliciting unhappy feelings during the interview. Only one subject demonstrated any subjective feelings of unhappiness. All subjects were informed that they could withdraw from the study at any time but this subject elected to complete the interview. No records were kept of names or identifying data. Once the response forms were separated from the consent forms, even the researcher could not identify a specific subject's responses. In this way anonymity was provided for the respondents.

**Procedure**

After residents indicated that they were willing to participate in the study, each was contacted by the researcher and
an interview was arranged. Interviews were conducted in each resident's apartment with only the resident and the researcher present. All questions, including those on the health information questionnaire and the demographic data page were read to the resident as part of the interview and the residents responded verbally.

**Hypothesis Testing**

The hypothesized relationships between the variables were tested using the Pearson's r or product moment of correlation for ordinal data. The data collected were treated as interval data for the purposes of analysis. The findings were presented in the following chapter.
Chapter 3

Results

Analysis and Findings

The non experimental survey design was chosen to serve an exploratory function in the study of factors thought to influence an older person's adjustment to the life change required by the move to an age-segregated high-rise apartment building. Subjective feelings of loneliness represented poor adjustment to this life change. Therefore, variables which displayed a significant correlation with loneliness might be used as predictors of loneliness and of adjustment problems. If it is possible to predict with reasonable accuracy which residents will encounter loneliness and difficulty in adjusting to the change in lifestyle, health care providers, primarily nurses, can design and implement programs to facilitate adjustment and enhance life satisfaction. Thus the phenomena of transplantation shock or relocation effect which lead to feelings of loneliness and isolation may be avoided or mitigated.

Eighteen subjects participated in the study (see Table 1). Their ages ranged from 67 to 84 years with a mean of 70.4 years and a median of 74.5 years. All the subjects were female, white, and Protestant. Seventeen were widows; one subject was divorced. All of the participants lived alone. Length of residence in the
### Table 1

Income and Education Levels for Residents

<table>
<thead>
<tr>
<th>Highest Yearly Family Income During Working Years</th>
<th>Education Levels of Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Income</td>
<td>Number of Residents</td>
</tr>
<tr>
<td></td>
<td>Highest Level Achieved</td>
</tr>
<tr>
<td>&lt; $5,000/year</td>
<td>0</td>
</tr>
<tr>
<td>$5,000–$9,999/year</td>
<td>6</td>
</tr>
<tr>
<td>$10,000–$14,999/year</td>
<td>11</td>
</tr>
<tr>
<td>$15,000–$19,999/year</td>
<td>1</td>
</tr>
<tr>
<td>$20,000 or &gt;/year</td>
<td>0</td>
</tr>
</tbody>
</table>
apartment building ranged from 6 months to 9 years with an average of 4.6 years. Highest level of education completed ranged from 6 years to 4 years of college with an average of 9.2 years. Table 2 represents the perceptions of respondents as to the limitations imposed by chronic disease. Of 18 subjects, 17 reported one or more chronic diseases currently being treated. Seven of these reported that the presence of the chronic disease or diseases limited activity to some degree.

The sample was a self-selected convenience sample; any resident who agreed to participate was included. Residents willing to participate had to complete a form giving name, phone number, and length of residence and return it to the president of the social club or directly to the researcher. The residents who completed and returned the forms were then contacted and an interview was arranged. Of those who returned the forms, two declined to participate, one was hospitalized, one moved, and three could not be contacted to arrange an interview.

The dependent variables studied were cathectic investment, activity (involvement and limits), and health as perceived by the subject. Relationships were explored to determine whether one or more of these variables could serve as predictors of loneliness and adjustment difficulties among the relocated elderly population. The product moment correlation coefficient or Pearson r was used to measure correlations among the variables. Five correlations
Table 2
Residents' Perceptions of Limitations on Activity Imposed by Chronic Illness

<table>
<thead>
<tr>
<th>Degree of Activity Limitations</th>
<th>Number of Residents$^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>No limitations</td>
<td>11</td>
</tr>
<tr>
<td>Minimal limitations</td>
<td>1</td>
</tr>
<tr>
<td>Moderate limitations</td>
<td>4</td>
</tr>
<tr>
<td>Severe limitations</td>
<td>2</td>
</tr>
</tbody>
</table>

$^a$Number of residents reporting this degree of limitation of activity.
were done: loneliness with cathetic investment, health, activity/involvement, and activity/limits, and cathetic investment with health. The scores of the first four variables, which were hypothesized as predictors of loneliness, are presented in Table 3. None were significant at the $p \leq .05$ level; the three hypotheses for this study which were, 1) that activity would demonstrate a negative correlation with loneliness, 2) that cathetic investment would correlate positively with loneliness, and 3) that loneliness would correlate positively with the number of health related complaints reported were not supported by the data.

As a means of further exploring the possible relationship between activity and loneliness, it was decided to divide activity into two aspects. Activity/involvement had a possible score of 1-3 related to the degree of participation and involvement in activities reported by the person: none, moderate, or high. The extent to which the residents felt their activities were limited by the presence of one or more chronic diseases was measured on a scale of 1-4: no limitations, minimal, moderate, or severe. It was assumed that activity/involvement represented choices made by the residents while activity/limitations were imposed on the residents by circumstances over which they had no or limited control. Neither aspect of activity correlated significantly with loneliness (see Table 3).

It was decided to test the correlation of health with
Table 3
Mean and Correlation Scores for the Hypothesized Predictors of Loneliness

<table>
<thead>
<tr>
<th>Predictors of Loneliness</th>
<th>Mean(^a)</th>
<th>Standard Deviation</th>
<th>Correlation with Loneliness(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cathetic investment (possible score 5-25)</td>
<td>16.66</td>
<td>2.37</td>
<td>(r = 0.275) ((p = 0.13))</td>
</tr>
<tr>
<td>Health (possible score 15-75)</td>
<td>22.17</td>
<td>7.47</td>
<td>(r = 0.05) ((p = 0.42))</td>
</tr>
<tr>
<td>Activity/involvement (possible score 1-3)</td>
<td>2.5</td>
<td>0.62</td>
<td>(r = 0.17) ((p = 0.25))</td>
</tr>
<tr>
<td>Activity/limitation (possible score 1-4)</td>
<td>1.6</td>
<td>0.9</td>
<td>(r = 0.35) ((p = 0.08))</td>
</tr>
</tbody>
</table>

\(^a\)\(n = 18\) subjects

\(^b\)Loneliness: possible score 5-25, \(\bar{x} = 9.8\), standard deviation = 1.97 for this group.

Note. Correlation coefficients were Pearsons r's with the level of significance set at .05.
cathetic investment because it was hypothesized that those residents who were in poor health and less able to get out might be more emotionally attached to their former homes, and therefore, had experienced a higher degree of transplantation shock when they relocated. However, the correlation between health and cathetic investment was $r = .099$ ($p = .35$) which was not significant.

Conclusions drawn from these results are presented in the following chapter along with recommendations for further study.
Chapter 4
Discussion

Conclusions

The purpose of this study was to determine which, if any, of the variables, cathetic investment, health, or activity (involvement, limitations) correlated significantly with, and might be used as a predictor for, loneliness. None of the four variables studied demonstrated a significant correlation with loneliness ($p \leq .05$). Therefore, the hypotheses that cathetic investment and activity would show a high degree of correlation with loneliness and might be used as predictors for loneliness were not supported by the data. Nor was the hypothesis that a high loneliness score would correlate with a higher number of health related complaints supported.

One difficulty encountered in doing this study was gaining access to the population. Many high-rise apartment buildings, unlike health care facilities, have no procedure for approving research for individuals who wish to use their buildings as data collection sites. As a result of the difficulty in gaining such approval, only one apartment building was used. The population in this building was fairly homogenous but not necessarily representative of all residents of age-segregated high-rise apartment buildings. The smallness of the sample and the use of
a single site may very well have produced bias in the sampling.

Another problem with the sample resulted from the difficulty in contacting the residents most likely to be lonely, those who did not participate in the activities such as the social club and who seldom left their apartments. Attendance by the researcher at the residents' social club meetings obviously did not reach these people. Letters explaining the study and asking residents to return them if they agreed to participate were distributed to each apartment. The return rate was less than 10%. A questionnaire which could be filled out in the privacy of their apartment and returned anonymously might elicit a greater response. A few residents expressed some apprehension concerning possible repercussions from the management although they were assured that confidentiality would be maintained.

It was expected that cathetic investment would demonstrate a positive correlation with loneliness. The result obtained may be due, at least in part, to the tool used to measure it. There were five questions in the tool related to cathetic investment. Each was equally weighted with a possible score of 1-5. One question asked the residents where they had lived before moving to the high-rise apartment building. The person received a score of 5 if they lived in a house, 4 if they lived in an apartment, 3 if it was a room, 2 if it was an institution, and 1 if they were drifting. The greater score value placed on living in a house
appears to be related to the assumption that individuals who live in houses will have greater personal ties with their home than those who live in apartments or rooms, or who have no fixed home. No validation for this assumption was found. Sixty-one percent of the participants scored 5 on this question while the remaining 39% scored 4. Conditions associated with the living situation such as whether the home was owned or rented, length of residence, whether the home was theirs or they were living with a friend or relative, and changes in the neighborhood which might have affected the emotional attachment the residents felt for their former home were not considered, measured, or controlled for with the tool, nor study.

Another question related to cathetic investment asked the respondents how many persons they felt emotionally close to in their former home. The score for this question ranged from a five if they felt close to more than three people to a one if they did not feel close to anyone. The assumption here was that the greater the number of attachments to people, the greater the emotional attachment would be to that place. Again, this assumption was not validated. It may be that a single spouse or relative attachment holds more significance than three friends or neighbors. Respondents were not asked if those people to whom they had felt attached still resided in the same place. Several stated that the people to whom they had felt closely attached in their former homes had died or moved away and so would no longer be available
to the residents even if they had remained there. No questions asked whether respondents had replaced these lost friendships with new relationships or how many persons they felt close to in their new home. One open-ended question did ask respondents why they missed special people or things less the longer they lived in the apartment, but it was not a scored item.

Five questions are probably not sufficient to provide the extensive exploration of all the dimensions of cathetic investment necessary to evaluate its true relationship to loneliness. Adding items to the tool which address the factors mentioned above might provide a more precise measurement of the actual amount of cathetic investment the person felt for a former home and personal contacts.

Reliability data were provided in the literature for both the cathetic investment and loneliness portions of the tool. Validity data were provided only for the loneliness portion of the tool. Both content validity (based on the opinion of experts) and criterion related validity data were found in the literature for the loneliness portion of the tool. Question 16 of the tool asked if the person had experienced loneliness since they had moved to the apartment and the response to this question was used as the criterion for evaluating the validity of the loneliness portion of the tool. There was a five choice response scale which ranged from "very much so" to "no" with "very much so" receiving a score
of 5 and "no" receiving a score of 1. The response to this item was correlated with the respondent's score on the loneliness portion of the interview to provide concurrent validity data. Some type of criterion-related validity data on the cathetic investment portion of the interview might be useful.

Two open-ended, non-scored questions on the tool provided information on activity and involvement. However, a more precise tool for measuring the extent of the activity the person engages in and the amount of involvement the person feels in the activity is needed. It may also be important to differentiate between interpersonal activity and activities in which the person engages alone. This was done only to a limited extent with this study. Answers given by the residents to the two open-ended questions suggest that the relationship between activity and loneliness may be stronger than indicated by the actual correlation score. Fourteen of the eighteen residents, in answer to these two questions, replied that they kept busy, were active in church, and/or saw friends and relatives often.

In scoring the health information questionnaire, no differentiation was made between those symptoms which the residents associated with the presence of a chronic disease or with medication they were taking and those symptoms which they experienced, possibly as a result of either loneliness or the aging process. For instance, several residents reported
experiencing back pain during the preceding month but related it to arthritis or previous back surgery. "Dizziness" and "felt faint" were similar and some residents had difficulty differentiating between them. Differentiation among age groups, i.e., 60-70, 70-80, > 80, might also be helpful in determining the extent to which perceived health status declines with age and whether this affects subjective feelings of loneliness.

The design did not provide a comparison group of older people living in different circumstances such as those remaining in their own homes in the community, nor any measurements of the variables on the subjects prior to their relocation. A pre and post move data collection might prove helpful for the purpose of comparison. **Recommendations**

Much still needs to be done in studying loneliness among the relocated elderly. This study should be repeated using larger and more diversified samples, possibly stratified on the basis of how recently individuals have changed their living situations. A study might compare the residents of two or more age-segregated high-rise apartment buildings of different sizes and which offer different levels of services. It might also be repeated using a comparison group of older people who have remained in their homes in the community.

It is strongly recommended that testing and refinement of the cathectic investment portion of the interview continue. Replication
of the study using an expanded tool which more broadly addresses the different factors which may contribute to cathetic investment could allow researchers to better evaluate the relationship between cathetic investment and loneliness.

Other variables which might be studied in relation to loneliness include presence of friends in the apartment building prior to the person's arrival and life changes, such as loss of spouse, which occurred within a six-month or one year period prior to the move. Future studies might address the relationship between the reasons that aged residents give for the move to an age-segregated high-rise apartment building and feelings of loneliness. Another variable which might be studied is the distance of the high-rise apartment building from the resident's former home. Does a move to a new neighborhood, a different city, or even a different state affect loneliness? Does the presence of friends or relatives in the neighborhood affect subjective feelings of loneliness?

A tool for measuring the varied levels of activity needs to be developed. The tool should measure participation in both on-site and off-site activities. It should also measure the degree of involvement the resident feels in the activity. It is important to differentiate between interpersonal activities and activities which do not involve other people. It would then be possible to obtain more accurate data regarding the relationship between
activity and loneliness.

With the rapid proliferation of age-segregated high-rise apartment buildings for the elderly, those interested in providing optimal living arrangements for the elderly have a responsibility to determine what the best combinations of living arrangements and services are. Nurses are the ideal professionals to plan and implement programs to alleviate loneliness and isolation among the elderly. The education of physicians is oriented toward the curing of diseases but many of the diseases of old age are chronic and cannot be cured. The education of nurses is more oriented toward caring and includes an emphasis on educating clients, helping them to achieve the optimal level of health possible for them. Also nurses comprise the largest single group of health care providers in the United States today and are more likely to be found in these settings.

More research is necessary in order to explore the relationships between loneliness and adjustment to new living situations and factors which affect that adjustment in order to provide the best care for the elderly population.
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Appendix A

Loneliness Rating Scale

1. First, about where you lived before coming here . . . was it a/an: (Circle number and enter on right)

<table>
<thead>
<tr>
<th>House</th>
<th>Apartment</th>
<th>Room</th>
<th>Institution</th>
<th>Drift</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

2. About how much time would you say you spent there?

<table>
<thead>
<tr>
<th>Practically all your time</th>
<th>Most time except for come &amp; go</th>
<th>Hard to say</th>
<th>Away more than there</th>
<th>Very little</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

3. How many people lived with you in your ?

<table>
<thead>
<tr>
<th>More than three</th>
<th>three</th>
<th>two</th>
<th>one</th>
<th>none</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

4. What relation were they to you? (Place number in space)

- Spouse
- Children
- Siblings
- In-laws
- Friends
- Aunts/Uncles
- Other
- Grandparents

5. This may be difficult, but think, with how many persons, generally, would you say you were closely attached or emotionally close?

<table>
<thead>
<tr>
<th>More than three</th>
<th>three</th>
<th>two</th>
<th>one</th>
<th>none</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

6. This may sound odd, but did you have any special things, other than people, where you lived that are particularly important or meaningful to you?

<table>
<thead>
<tr>
<th>Many</th>
<th>A few</th>
<th>Hard to say</th>
<th>Just one</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
7. What are the things or objects that were particularly important to you?

- Certain foods
- Pets
- Entertainment (passive)
- Recreation (active)
- News/phone/mail
- Job/work
- Other

8. Now the questions will shift to the apartment. Some people miss their homes when they have to leave them... do you miss or feel particularly separated from where you lived since you have come to the apartment?

<table>
<thead>
<tr>
<th>Very much so</th>
<th>Most of the time</th>
<th>Sort of hard to say</th>
<th>Occasionally</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

9. Do you miss or feel separated from any of the persons you said you were close to (mention them)?

<table>
<thead>
<tr>
<th>Very much so</th>
<th>Most of the time</th>
<th>Sort of hard to say</th>
<th>Occasionally</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

10. Do these persons visit you here?

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sporadically</th>
<th>Every other day</th>
<th>Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

11. Do you particularly miss or feel separated from the special things you mentioned (name them)?

<table>
<thead>
<tr>
<th>Very much so</th>
<th>Most of the time</th>
<th>Sort of hard to say</th>
<th>Occasionally</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
12. Now think about this question and tell me in your own words. Try to describe what it has been like to you or feels to you to be separated from the people and things you were used to being with.

13. (If R. misses anyone or anything ask) Do you miss the people (name them) and things (name them) worse or less the longer you are here?

<table>
<thead>
<tr>
<th>Much more</th>
<th>More except for some more</th>
<th>Some more, less</th>
<th>Less</th>
<th>Much less</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

14. (If 13 rated 5 or 4 ask) Can you say why you miss them more the longer you are here, why it gets worse?

14A. (If 13 rated 1 or 2 ask) Can you say why you miss them less the longer you are here, why it gets better?

15. Would you say you experience loneliness while you have been here in the apartment?

<table>
<thead>
<tr>
<th>Very much so</th>
<th>Yes, but it was broken up by</th>
<th>Unable to say ambivalent</th>
<th>A little</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Now a few facts about yourself.

Are you M W D Sep. Sing.

What was your usual occupation?

What was the highest grade in school you completed?

Do you have a religious preference?

P C J Other

About what was your usual family income during your working years?

| Under $5000 | $15,000-$19,999 |
| $5000-$9999 | $20,000 or more |
| $10,000-$14,999 |

Age Sex Race

Do you live alone?

If not, with whom do you live?

Do you have any chronic health problems for which you are currently being treated?

If so, what are they?

Do you feel that this condition limits your ability to participate in available activities?

That was the last question. Thank you very much for helping me.
Appendix B

Health Information Questionnaire

Please indicate which of the following problems you have had in the past month and how often you experienced them. For each problem you had, circle a number from one to five, depending on how many times each one happened.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Seldom or Never</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor appetite</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Stomach upset</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Difficulty sleeping</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Headaches</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Nervousness</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Cold sweats</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Trembling hands</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Dizziness</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Felt faint</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Felt hot all over</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Restless, can't be still</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Back pain</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Difficulty remembering</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Cry easily</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Feel tense</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>
How many times during this period did you

See a doctor

See a nurse

See a nurse practitioner

Go to a clinic
Appendix C

INFORMED CONSENT FORM

Project Name: A Study of Loneliness and Health Related Complaints
In Residents of High-Rise Apartment Buildings for the Elderly

Investigator(s): Susan H. Jones

DATE: _______________

I, ________________________, hereby agree to participate as a volunteer in a scientific investigation as a part of the educational and research program of Old Dominion University, under the supervision of _________________________.

(Faculty Person/Principal Investigator)

The investigation and the nature of my participation have been described and explained to me, and I understand the explanation. (See attached one page abstract). I understand that I am one of ___ individuals participating in this research project. I further understand that I may withdraw from the project at any time, without penalty or prejudice.

I have been afforded an opportunity to ask questions concerning the purpose of this project and all such questions have been answered to my satisfaction. I understand that should I have additional questions in the future about this project or the manner in which it is conducted, I may contact _________________________.

(Faculty Person/Principal Investigator)

at _________________________.

(Telephone Number)

I understand that I am free to withhold any answer to specific items or questions in any questionnaire submitted to me for this project. I understand that any data or answers to questions will remain confidential with regard to my identity. I further
understand that no data which can be identified with me will be released to persons outside the research team without the team first obtaining my written permission.

I acknowledge that I was informed about any possible risks to my health and well-being that may be associated with my participation in this research (see attached abstract). I understand that no medical or psychological assistance will be made available to me by either Old Dominion University or any member of the research team as a result of any physical or emotional harm I may experience as a result of this research project.

I acknowledge that I have been advised of how I may obtain a copy of the results of this research project and that upon my making such a request, a copy will be provided without charge.

I have been informed that I have the right to contact the Old Dominion University Institutional Review Board for the Protection of Human Subjects should I wish to express any opinions regarding the conduct of this study. I further understand that all or a portion of the records concerning this study may be reviewed by the U. S. Food and Drug Administration.

_________________________  ________________________
Signature of Volunteer     Date

_________________________  ________________________
Witnessed by              Date