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THE RELATIONSHIP BETWEEN EXERCISE ACTIVITIES
AND SELF-ESTEEM IN ELDERLY POPULATIONS

by
Marcia Taylor

A thesis
submitted in partial fulfillment
of the requirements for a Master of Science,
Major in Nursing
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Title: THE RELATIONSHIP BETWEEN EXERCISE ACTIVITIES AND SELF-ESTEEM IN ELDERLY POPULATIONS

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Type of Study Project X Thesis

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- X education
- clinical practice
- patient care management
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Abstract (approximately 150 words)

This study investigated the relationship between exercise activities and self-esteem in an elderly population. Dorothea Orem's self-care theory of nursing was used as the framework for the study.

1. There is no relationship between the type of exercise and the self-esteem of the elderly.
2. There is no relationship between the self-esteem of elderly who exercise in groups and elderly who exercise alone.
3. There is no relationship between the amount of exercise per week and the self-esteem of the elderly.

Data for the study was collected through personal interviews with 70 elderly living in highrise apartments. The instruments used included the Rosenberg Self-Esteem Scale and the Exercise Activities Questionnaire. The data was analyzed using the Pearson Product Moment Correlation and chi-square.

The first hypothesis could not be tested because the majority of subjects participated in only one type of exercise which was walking. The second null hypothesis was rejected and the third null hypothesis was accepted.

I give my permission to the College of Nursing, SDSU to publish this abstract in a collection of abstracts from master's projects and theses.

Marcia Taylor
Signature

Date 4/14/2012

CHAPTER 1

Dimensions of the Problem

This study investigated the relationship between exercise activities and self-esteem in elderly populations. Chapter one includes an introduction to the problem, the problem statement, significance of the study, objectives of the study, and definitions of terms used in the study.

Introduction

Self-esteem is the internal image of oneself and is considered an important component of every individual's psychosocial health (Crouch & Straub, 1983). One of the goals of health care professions is to facilitate greater self-esteem within their clientele, thereby promoting an improved quality of life for the individual (Hirst & Metcalf, 1984).

Because of the growing number of elderly within the United States, nurses will have increasing contact with older clientele. In assisting the elderly to meet their health care needs, the nurse needs to understand how the aged view themselves. Nurses need to identify methods that will restore and maintain positive self-esteem for individuals living their later years of life.

It has been recognized that physical exercise promotes a sense of well-being within individuals (Grossman & Sutton, 1985). Physical exercise may be an intervention that nurses can suggest to increase and maintain positive self-esteem in

in the older segment of the population.

Problem Statement

Is there a relationship between the type, setting, or amount of exercise performed by elderly living in highrise apartments and their self-esteem?

Significance of the Study

The nursing profession is increasingly interested in studying the psychosocial and physical well-being of elderly populations (Dychtwald, 1986). Growing numbers of older people and escalating health care costs have prompted this interest. People over 65 comprise 11% of the population and account for 29% of health care expenses (Dychtwald, 1986). Consequently, one of the greatest challenges facing health care professionals is how to maintain and improve the quality of life of the older population at a reasonable cost. One approach to this challenge has been the implementation of the self-care concept while working with the elderly (Ford, 1982). This concept encourages individuals to take control of their own health and become active participants in their health care needs.

Joseph (1980), Miller (1984), and Orem (1985) state that self-care activities are directly affected by the individual's self-esteem. According to these authors, a positive feeling of worth enables the individual to maintain independence and take an active role in attaining and maintaining a healthy

state. Most self-esteem theorists such as Rosenberg (1965) and Coopersmith (1981) suggest that self-esteem is developed and maintained through personal interactions within the environment. With aging, individuals are faced with several changes within their environment such as economic and social changes as well as normal physiologic changes that occur with the aging process. These age related stresses and events may alter older individuals' self-esteem and affect their interest and participation in caring for themselves.

Many researchers have studied the feeling of self-esteem among populations of children and adults. Rosenberg (1965) conducted the first major study on self-esteem, investigating the influence of social experiences on the self-esteem of 5,000 junior and senior high school students. Rosenberg (1965) found that parental interest was one of the major factors related to the subject's self-esteem.

Coopersmith (1981) did extensive self-esteem research on 85 white males from 10-12 years of age. He identified four major antecedents of self-esteem including: (a) parent's acceptance of their children, (b) clearly defined and enforced parental limits on the children, (c) parental respect and latitude for children's actions within these limits, and (d) parental self-esteem.

Not as much is known about the self-esteem of aging populations and the literature findings are inconsistent. Among the readings that demonstrate these inconsistencies

are those of Hirst and Metcalf (1984), Burnside (1981), and Aitken (1982). Hirst and Metcalf (1984) state that a significant number of dependent or institutionalized elderly have low self-esteem and Burnside (1981) states that this decreased feeling of worth affects from 10 to 30% of the elderly population. Aitken (1982), however, compared the self-concept of older hospitalized and non-hospitalized adults and found all participants scored higher than average totals on the self-concept scales.

It has been recognized that there is a connection between exercise and mental well-being and studies conducted on college students and employees by Hayden and Allen (1984), Pauley, Palmer, Wright, and Pfeiffer (1982), and Short, DiCarlo, Steffee, and Pavolou (1984) all support a positive relationship between physical exercise and a feeling of positive self-worth. It has also been found by Conroy, Smith, and Felthous (1982) and Collingwood (1972) that physical fitness can function as a therapeutic intervention for mentally and physically debilitated clients. However, none of these studies segregated the findings according to group or individual exercise activities. The potential influence of the group setting was not addressed in the research findings, although the independent variable of parental acceptance and parental interest found in the Rosenberg and Coopersmith studies would indicate self-esteem is affected by social factors or interactions with others.

Literature identifying the psychological benefits of exercise in elderly populations is limited. Goldberg and Fitzpatrick (1980) identified that movement therapy performed in group sessions promoted improved morale and attitudes among institutionalized aged. Parent and Whall (1984) found a positive relationship between elderly who participated in monthly physical activities and improved self-esteem, but no delineation of group or individual exercise activities was identified.

Additional nursing research on the relationship of exercise and self-esteem in elderly populations is needed. Identifying the type and amount of exercise and the effects of group and individual exercise on the elderly's self-esteem may lead to more well-defined nursing interventions that will be effective in promoting quality life in the older segment of the population.

Objectives of the Study

The objectives of this study are to:

1. Identify the level of self-esteem among an elderly population living in southwestern South Dakota.
2. Identify the proportion of this elderly population who engage in exercise activities.
3. Determine the type of exercise activities this population performs.
4. Determine if elderly who exercise with others have

a significantly higher self-esteem than those who exercise alone.

5. Determine if a greater amount of exercise results in a higher level of self-esteem.

Definition of Terms

For the purposes of this study, the following terms have been defined:

1. Self-esteem is an individual's self-evaluation which expresses an attitude of self-approval or disapproval and is generally regarded as the evaluative component of self-concept (Coopersmith, 1981). Levels of self-esteem were determined by the Rosenberg Self-Esteem Scale.

2. Exercise activities are bodily exertions performed to develop and maintain physical fitness.

3. Group exercise activities are exercise activities that are performed by two or more individuals together.

4. Individual exercise activities are exercise activities that are performed alone.

5. Elderly are individuals 62 years of age or older.

6. Elderly highrise apartments are the complexes where the elderly interviewed for this study reside.

CHAPTER 2

Review of the Literature

This chapter presents a review of the literature in the following areas: self-esteem, self-care and self-esteem, and exercise and self-esteem.

Self-Esteem

Self-esteem is an individual's self-evaluation expressing an attitude of self-approval or disapproval. Self-esteem is generally regarded as the evaluative component of self-concept (Coopersmith, 1981). From the moment of birth, life experiences and interactions create the conditions that influence an individual's self-esteem. Crouch and Straub (1983) identify two levels of self-esteem including the basic level and functional level. The basic level of self-esteem is the foundation laid during early life experiences and usually occurs from interactions within the family setting. By adulthood, basic level self-esteem is well established and relatively unchangeable. An individual's functional level of self-esteem stems from an ongoing self-evaluation of interactions with other people, things and events (Crouch and Straub, 1983). Functional level self-esteem can change from moment to moment and can substantially override basic self-esteem.

People make self-evaluations based on four criteria including (Coopersmith, 1981):

1. Power, which is the ability to influence and control events and others who are significant to a person.

2. Significance, which is the acceptance, attention, and affections of others, with a clear sense of being valued and cared about as a worthwhile human being.

3. Competence, which is successful performance in meeting demands for achievement, especially those goals and objectives that are important from a personal perspective.

4. Virtue, which is adherence to moral and ethical standards, with opportunities and permission to behave in ways congruent with value and belief systems.

Physical and mental stresses experienced throughout the life cycle can greatly influence the outcome of self-evaluation and ultimately create feelings of positive or negative self-esteem.

Many studies have investigated the feelings of well-being among a variety of groups of children, teenagers, adults, and the physically and mentally ill. However, not as much is known about self-esteem of aging populations.

With aging, individuals often experience a decline in health status, an increase in sensory impairment, loss of a spouse, reduction in independence, and a decrease in socialization following retirement. Research findings seem divided with regard to whether these life changes have an impact on the aging individual's self-esteem.

According to Hirst and Metcalf (1984), a significant

number of dependent or institutionalized elderly have low self-esteem. A lowered self-esteem is often associated with feelings of hopelessness and helplessness, and according to Burnside (1981), these feelings affect from 10 to 30% of the elderly population.

However, Lee (1976) conducted a descriptive study on personal characteristics in people of different age groups living in private homes or apartments. Lee noted that the elderly population generally possessed a positive self-identity and were less self-derogatory than younger age groups.

Simons (1985) studied the impact of urinary incontinence on self-concept in elderly females living in a mobile home retirement community. The Rosenberg Self-Esteem Scale was utilized to measure levels of self-esteem among the participants in the study. The subjects were grouped as incontinent or not incontinent. Scores on the Rosenberg tool reflected a positive self-esteem for subjects in both groups.

Aitken (1982) conducted a study to determine the relationships of various kinds of hospitalization to self-concept and functional independence on subjects over 65 years of age. Hospitalized and nonhospitalized subjects were interviewed utilizing the Tennessee Self-Concept Scale and Katz's Index of Activities of Daily Living. The results showed that there was no difference in self-concept scores of elderly persons, whether hospitalized or not. There was also no difference in self-concept scores among subjects in an

acute care hospital, skilled nursing home, or rehabilitation center. All of the groups scored a higher than average total on the self-concept scale. This indicates that older persons may have a higher self-concept in comparison to the general adult population.

Nursing identifies that a positive regard for oneself is an essential need for every human being and plays an important part in every individual's mental and physical health. Problems with self-esteem have been categorized under the officially accepted nursing diagnosis of disturbance in self-concept. Enhancing and maintaining this essential element has become a very important role of the nurse. Through continued research appropriate nursing interventions can be identified that will promote this sense of well-being within clientele.

Self-Care and Self-Esteem

The self-care movement has gained wide public recognition in the past 10 years, encouraging individuals to take control of their own health and be active participants in all aspects of their health care. Economic necessity, convenience, informed consumerism, early hospital discharges, and the prevention of life-style illnesses are some of the reasons for the increased popularity of the self-care concept.

Dorothea Orem is credited with the development of

self-care theory in nursing. According to Orem (1985), self-care is the practice of activities that individuals initiate and perform on their own behalf in maintaining life, health, and well-being. Nursing involves assisting clients in the design, provision, and management of self-care to improve personal physical and emotional functioning.

According to Joseph (1980), self-care is directly affected by self-concept. Miller (1984) states that positive self-esteem enables an individual to assume an active role in controlling health care needs and promotes independence in health care management.

Assisting clients in self-care has been part of nursing practice during the last several years; however, there have been few valid and reliable instruments published that measure a person's perception of the practice of self-care. A review of the literature also reveals few studies on the relationship between self-esteem and self-concept on self-care practices.

Kearney and Fleischer (1979) developed a tool to measure a person's involvement in self-care. The Adjective Checklist and Rotter's Internal-External Locus of Control Scale were used to establish construct validity of the tool. Fleischer and Kearney's study included 237 college students. The findings indicated that individuals who exercised a high degree of self-care described themselves as self-controlled, dependable, assertive, independent, intelligent, confident,

responsible, and helpful. Those individuals with a low degree of self-care described themselves as dependent on others, critical of self, unsure of self, apathetic, aggressive, and a doer.

From Kearney and Fleischer's study, Miller (1984) concluded that clients with high self-esteem feel they are worth the time and effort needed to maintain and improve health and thus take responsibility in meeting health care needs. Conversely, individuals with low self-esteem find it difficult to make self-care decisions and assume responsibility for care outcomes.

Lewis (1982) conducted a study to examine the association of experienced personal control over life and quality of life for late stage cancer patients. The study included 57 late stage cancer patients 21 years of age and older. It was found that the measure of experienced personal life control significantly correlated with scores on the Rosenberg Self-Esteem Scale. There was a positive relationship between high levels of self-esteem and individuals perceiving themselves as having control over their lives.

There is a paucity of information on the relationship between self-esteem and self-care in the elderly. Nelson et al. (1984) conducted a study to evaluate the impact of self-care education on 330 persons 60 years of age or older. Two communities in the eastern part of the United States were

selected as the test and control groups. Pretest questioning on health skills and knowledge, life-style, health status, and life quality was done in both communities. The experimental group was given 13 two-hour classes on life-style, medicine, and health services. A lecture-demonstration was given in the control community, addressing foot care and hypertension. Post-testing was conducted. The experimental group showed substantial improvement in health knowledge, performance skills, understanding of the importance of patient-physician communication, and an increase in attempts to improve general life-style. The study also indicated slight improvement on measures of life-quality.

Aitken (1982) conducted a study to determine the relationships of hospitalization to self-concept and functional independence on individuals 65 years of age or older. The Tennessee Self-Concept Scale was used to measure self-concept and Katz's Index of Activities of Daily Living was used to measure functional independence. It was found that older persons with high self-concept scores were more independent than those with low self-concept scores.

The basic premise of self-care is that individuals have the ability to influence their health and to participate in their health care. A review of the literature indicates that there is a correlation between self-esteem and self-care. Through reinforcement of positive self-esteem, independence and self-care may be promoted within individuals (Joseph, 1980).

Exercise and Self-Esteem

With the promotion and use of self-care practices, the public and health professionals have become increasingly aware of the benefits of routine physical exercise. An extensive body of literature supports the hypothesis that participation in a regular exercise program results in improved physiological functioning. It has also been recognized that there is a connection between exercise and mental well-being; and in recent years a growing body of research has explored the link between physical and physiological fitness.

Hayden and Allen (1984) conducted a study on 98 undergraduate volunteers to determine the relationship between aerobic exercise and subjective anxiety and depression. Each participant completed the State-Trait Anxiety Inventory, Beck's Depression Inventory and was also asked to keep a log of physical exercise activities. Results of the study indicated that aerobic activity was associated with significantly less subjective anxiety and depression.

Businesses and industries are interested in the health status of their employees because ultimately health affects productivity. Seventy-three employees from the Xerox Corporation participated in a 14 week employee exercise program and consented to be subjects of a research study. Pauley, Palmer, Wright, and Pfeiffer (1982) obtained pretest measurements of cholesterol and triglyceride levels as well

as oxygen uptake levels, resting heart rates, blood pressures, body fat percentages, and body weights. Pretest psychological variables were measured using the State-Trait Anxiety Inventory and the Tennessee Self-Concept Scale. Each subject was then given an exercise prescription which included a warm-up phase, aerobic phase, and cool down phase. The subjects worked out as often as they chose during a 14 week period. The study did not indicate if the subjects participated in group exercise sessions or exercised alone. Post-testing on the same physical and psychological variables were obtained. Significant improvements were seen in the resting heart rates, blood pressures, triglyceride and cholesterol levels in all participants. Maximum oxygen uptake improved according to the frequency in exercise. Body weight did not show any significant decrease. Significant improvements from initial to final tests were shown for all subjects on the trait anxiety test and personal self-concept, social self-concept, and physical self-concept scales. The psychological improvements were unrelated to the frequency of exercise by the subject. The potential influence of the setting of the activities on the subject's self-esteem was not addressed.

Employees of a metropolitan police department were studied in determining the effect of physical conditioning on self-concept (Short, DiCarlo, Steffee, Pavlou, 1984).

Each of the 45 subjects were at least 20% over their optimum body weight. All subjects underwent initial assessments of physical fitness and took the Tennessee Self-Concept Scale. All subjects were placed on diets and received weekly group instruction on nutrition and exercise. One-half of the group was randomly selected to participate in scheduled aerobic exercises which were held three times a week for eight weeks. This involved a supervised interval program of walk-jog activities of increasing duration and distance. It was not specified if the walk-jog activities were done alone or in groups. At the end of the eight weeks all subjects were again assessed on measures of physical and psychological functioning. Both groups showed significant increases in oxygen consumption and self-concept measures. However, post-test measurements of self-concept were two to three times higher in the experimental group as compared to those who did not participate in aerobic exercise. This study indicates that group education on nutrition and exercise alone, without the participation in physical activities, increases an individual's self-concept. However, a combination of group health education and aerobic exercise activities has a greater positive impact on the self-concept than health classes without active participation in physical exercise.

The literature indicates that positive mental and physical changes occur in those individuals participating

in physical exercise. In turn, physical fitness can function as a therapeutic mode to mentally and physically debilitated clients.

A psychiatric unit was the setting for a research study by Conroy, Smith, and Felthous (1982). The study consisted of a six week exercise program offered to inpatients with diagnoses of schizophrenia, personality disorders, or affective disorders. Baseline data included weight, blood pressure, and pulse. Each participant completed Beck's Depression Inventory and Smith's Self Assessment. The Health-Illness Rating Scale was also used to rate the patient's ego functioning. The control group and experimental group were similar in medical diagnosis and age. The experimental group averaged a minimum of three exercise sessions a week, while the control group averaged one or less exercise sessions per week. Exercise sessions included activities that could be done alone or in planned group sessions. The study did not separate individual or group activities nor was the setting considered when results were administered. Significant improvements in physical findings were seen in those clients participating in the exercise program. The primary psychological benefit of the exercise program was its effect on depression. A correlated t-test showed that participants and non-participants did not differ significantly on the amount of depression reported at the beginning of the six week period. However, post-test scores

revealed non-participants remained at the same level of depression, while participants had markedly less depression. This study shows positive psychological changes in psychiatric clients participating in exercise and indicates that physical activity can be used as a therapeutic intervention in the psychiatric setting.

The effect of physical training on physically debilitated clients was studied by Collingwood (1972). Fifty male rehabilitation clients between 18 and 26 years of age from a large rehabilitation center were randomly divided and 25 individuals became participants in a physical training program supervised by a coach. These individuals also continued to participate in their regular prescribed rehabilitation program. The control group received only their standard rehabilitation program, which did include contact with health professionals and other clients. At the beginning of the study all subjects were administered the Body Attitude Scale and the Bills Index of Adjustment and Values, a self-concept measurement. Physical fitness tests were administered in a training program which included endurance and cardiovascular work, strengthening exercises, and agility drills. At the end of the program the experimntal group was again assessed for physical fitness and improvements were seen. Post-testing on the same psychological variables was conducted on both groups. Analysis of the difference between pre and post-test scores

identified that the experimental group demonstrated greater positive changes on the Body Attitude Scale and had greater improvements in self-acceptance and self-concept as compared to the control group.

The data obtained in Collingwood's study supports the contention that a healthy attitude about oneself can develop through physical exercise. It also indicates that physical exercise can be beneficial in the therapeutic recovery of physically debilitated individuals.

Literature identifying the psychological benefits of physical exercise in elderly populations is limited. Parent and Whall (1984) conducted a study of 30 people 60 years of age or older to identify relationships between exercise and self-esteem and exercise and depression. The Rosenberg Self-Esteem Scale and Beck's Depression Inventory were administered. The study indicated that individuals who participated in regular monthly physical activities showed higher self-esteem scores and had lower depression scores than individuals who did not exercise. However, the study did not indicate if the exercise activities were performed in group sessions or individually.

Goldberg and Fitzpatrick (1980) studied the effect of participation in a movement therapy group on morale and self-esteem in a population of institutionalized aged persons. Pre-test and post-test scores on the Philadelphia Geriatric Center Morale Scale and the Rosenberg Self-Esteem

Scale were obtained for the control and experimental group. Results indicated that individuals who participated in the movement therapy demonstrated greater improvement in total morale and attitude toward their own aging than individuals in the control group. The data also indicated a trend toward greater self-esteem in those individuals who participated in the movement therapy. The factor of additional group activity by the experimental group and its effects on improved morale was not studied.

Perri and Templer (1985) studied the psychological effects of aerobic exercise on the elderly. A control group and experimental group were pre and post-tested using the Zung Self-Rating Depression Scale, the Anxiety Scale of Zuckerman's Multiple Affect Adjective Check List, Fitt's Tennessee Self-Concept Scale, Rotter's Locus of Control Scale, and the Rey Auditory Verbal Training Test. The experimental group participated in an aerobic exercise program three times per week for a 14 week period. The control group maintained their normal life-styles. Significant increases in self-concept and a significantly greater perceived internal locus of control were seen in those individuals who participated in the 14 week aerobic program. Improvement in memory was not found. The study did not indicate if participants exercised in groups or alone, however, all exercise activities were supervised by a physical fitness staff. The influence of the physical

fitness staff on the variables measured was not addressed in the study.

A number of authors have attributed the improved affective states associated with exercise to physiological changes that occur within the body during the exercise activity. Morgan (1984) states that neurotransmitters such as norepinephrine and serotonin increase in the brains of exercised rats. These increased levels of norepinephrine and serotonin promote an antidepressant effect on the brain.

A currently popular hypothesis offered to explain affective benefits associated with exercise is the endorphin hypothesis. Through measurements of blood concentrations, Grossman and Sutton (1984) found that there were increases of endorphin concentrations with increases of exercise activities. It is known that various endorphins are produced by the brain, pituitary gland, and other tissues and the action of these endorphins can be "morphine-like" having the ability to reduce the sensation of pain and produce a state of euphoria. This may be the reason for the "runner's high" that has been reported by athletes after vigorous exercise (Grossman & Sutton, 1984). These physiological explanations for the affective changes seen with exercise continue to be a question of study.

Findings in the literature identify that physical activities promote positive physical and mental changes within individuals in a variety of population groups. These positive

effects are viewed optimistically by physiologists, psychologists, physical educators, rehabilitation personnel, physicians, and nurses.

Summary

The review of the literature describes studies and articles which have investigated self-esteem, self-care and self-esteem, and exercise and self-esteem. Identifying activities that enhance a sense of positive self-esteem is important; however, there is little information on appropriate interventions that create and maintain positive self-esteem within the elderly. Based on the studies cited, there is a positive relationship between exercise and mental well-being, although elderly groups were not the primary subjects.

CHAPTER 3

Theoretical Framework

This study is based on Dorothea Orem's self-care theory of nursing (1985). This theory is built on the premise that self-care is a requirement of every person, and individuals have the capacity to increase the quality of their lives by decreasing their dependence on others. Orem (1985) believes that self-care is a learned behavior which is processed by the ego and influenced by the individual's self-concept and level of maturity.

Orem (1985) views man as a self-care agent, functioning as an integrated whole biologically, symbolically, and socially. The self-care agent is an open system interacting with the internal and external environment, and any change in one component of this integrated system will affect all parts of the system (Figure 1). Self means the total being; thus self-care means taking care of one's mind, body, and spirit through a variety of daily practices conducive to health preservation. Orem (1985) identifies three types of self-care requirements that must be maintained to have health including the universal, developmental, and health deviation requisites.

Universal self-care needs are activities required by all people during all stages of life to maintain health. They include the following:

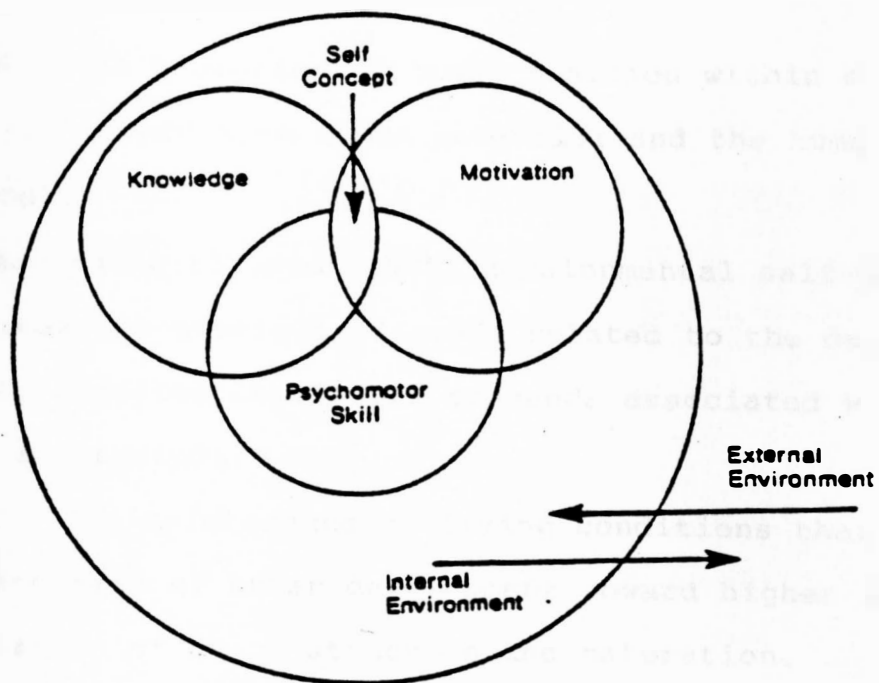


Figure 1

Self-Care Agency as an Open System

1. The maintenance of air, food, and water.
2. The provision of care associated with elimination and excrements.
3. The maintenance of a balance between activity and rest.
4. The maintenance of a balance between solitude and social interaction.
5. The prevention of hazards to human life and well-being.
6. The promotion of human function within social groups in accord with human potential and the human desire to be normal.

According to Orem (1985) developmental self-care requisites are specialized needs related to the developmental process, acquired conditions or needs associated with an event, and include:

1. The maintenance of living conditions that support life processes of human development toward higher levels of organization of human structure and maturation.
2. The provision of care either to prevent the occurrence of or overcome deleterious situations that can affect human development.

Health deviation self-care requisites are needs that occur because of changes in self-care activities brought on by illness, injury, or disease. Orem (1985) describes six categories of health deviation needs:

1. Seeking and securing medical assistance when exposed to conditions that can precipitate pathological problems, or when there is evidence of a genetic, physiological or psychological problem that could produce pathology.
2. Attending to the results of pathological conditions.
3. Carrying out prescribed measures directed to the prevention of pathological conditions.
4. Attending to the discomforting effects of medical care measures.
5. Modifying the self-concept and self-image in accepting oneself as being in a particular state of health and in need of specific forms of health care.
6. Learning to live with the effects of pathological condition in a life-style that promotes continued personal development.

These universal, developmental, and health deviation self-care requirements are the essence of nursing practice (Orem, 1985). The nurse must assess the client's ability to carry out these therapeutic self-care demands and aid the individual in understanding the importance of these therapeutic requirements for the promotion of health. When necessary, the nurse assists the client with actions that cannot be done independently. Together, the nurse and client work toward self-care by overcoming health deficits.

Orem (1985) points out that the client will work

towards and exercise self-care agency only to the extent that a positive self-concept is maintained. A negative self-concept may interfere with health-promoting activities. The nurse must continuously assess and promote a positive self-esteem within the client which will ultimately aid in alleviating or resolving a health care problem.

Three nursing systems that meet the therapeutic self-care demands of the client are described in Orem's theory (1985). These nursing systems are different combinations of assistance and include the: (a) wholly compensatory system, (b) partly compensatory system, and (c) supportive educative system (Figure 2). This approach to health care provides the nurse with a systemic method of intervening to meet client needs and promotes self-care and well-being within the individual.

Orem (1985) believes that self-care aids all population segments. In using the self-care theoretical framework for interacting with older clientele, the nurse is able to assist the individual in maintaining integrity and self-esteem. Self-care theory claims that self-care allows the elderly to retain control of the environment and work towards self-actualization. By helping older people fulfill their potential, the nurse can dispel the myths of growing old.

Hypotheses

Orem's self-care theory of nursing (1985) shows that

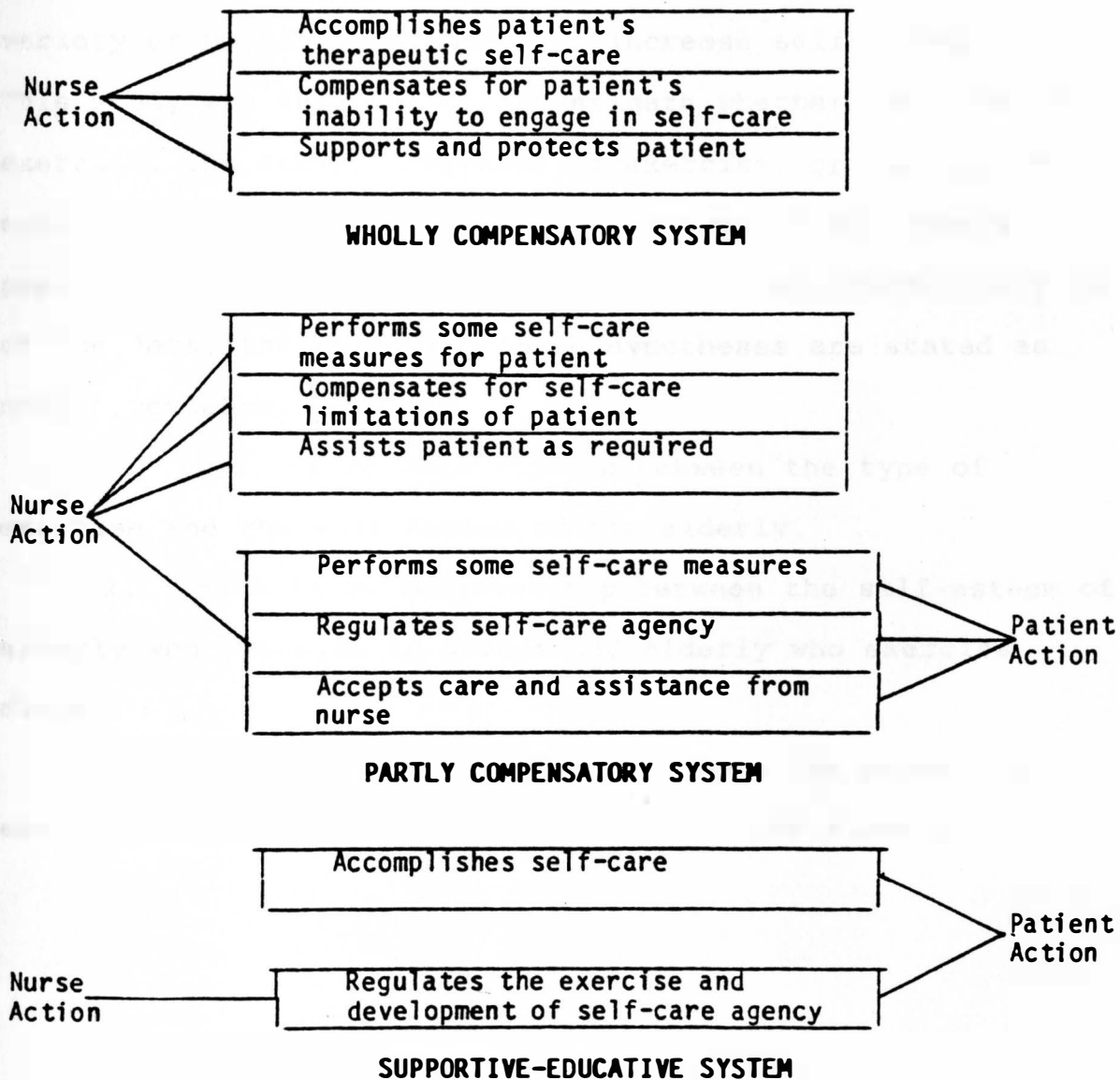


Figure 2
Orem's Basic Nursing Systems

self-care is enhanced by positive self-esteem. A review of the literature indicates that exercise activities in a variety of populations appear to increase self-esteem. This study was designed to investigate whether the type of exercise, the social component of exercise, or the amount of exercise affects the level of self-esteem in an elderly population. In order to facilitate the statistical analysis of the data, the following three hypotheses are stated as null hypotheses:

1. There is no relationship between the type of exercise and the self-esteem of the elderly.
2. There is no relationship between the self-esteem of elderly who exercise in groups and elderly who exercise alone.
3. There is no relationship between the amount of exercise per week and the self-esteem of the elderly.

CHAPTER 4

Methodology

This study was designed to investigate the relationship between exercise activities and self-esteem in elderly populations. This chapter explicates the design of the study, setting, and population, variables, instruments used, and the procedure for collection and treatment of the data.

Design

The researcher used a correlation design to determine how the variable of exercise activities was associated with the variable of the elderly individual's self-esteem. This study only identifies relationships that may exist between the two variables.

Setting

This study was conducted at three elderly highrise apartment buildings in a southwestern city in South Dakota. Agency permission to conduct the study was obtained from the tenant manager of the highrises prior to the collection of data (Appendix A). These elderly highrise complexes have been developed by the county housing authority. Individuals who lived in the complexes had to be eligible by age to receive old age benefits under the Social Security Act and/or be handicapped or disabled within the meaning of the Social Security Act. Each apartment has a bedroom, living room, bathroom, kitchen, and dining area.

All subjects were interviewed individually in the privacy of their own apartments. At the start of the interview, the researcher read the face sheet to each subject (Appendix B). The face sheet identified the researcher, the purpose of the study, and assured each subject confidentiality. Written consent from the subject was then obtained.

Population and Sample

The accessible population for this study included 259 individuals living within the highrise apartment buildings. The sample of convenience consisted of 70 individuals who understood and spoke English and lived within the highrise apartment buildings. This sample was further reduced to 64 individuals who were females, 62 years of age or older, who understood and spoke English and lived alone within the highrise apartment buildings.

Variables

The variable of self-esteem in an elderly population was studied. Additional variables for the study included the type of exercise, exercise performed in groups and alone, and the amount of exercise performed. All variables were unmanipulated.

Possible extraneous variables and methods to minimize or control them are listed below:

1. Upbringing and past experiences of this elderly

population may have influenced their level of self-esteem. This variable was not controlled or measured.

2. Other present experiences taking place within the elderly individual's life and within the highrise apartment buildings may have influenced the outcome. This variable was not controlled or recorded.

3. The elderly each live unique life-styles. To control this variable only those living within the highrises were used for the study. All three highrises provided routine services to tenants such as noon meals and transportation within the city limits. Thus, opportunities which could potentially affect the individual's level of self-esteem were equally available to all persons in the accessible population.

4. The elderly individuals could have been biased in completing the questionnaire because of a desire to project a more socially desirable outcome. To control this variable, interviews were individually conducted in the privacy of each subject's apartment. This provided for a relaxed non-threatening environment which allowed the subject honesty with responses. No other subjects could hear their answers. The researcher wore a white lab coat in order to foster the atmosphere of confidentiality engendered by most medical situations and in order to make appearances approximately similar in each interview. All interviews were conducted by the same researcher at approximately the same time of day

over a three week period.

5. Some of the elderly could have had difficulty reading the questionnaires because of poor eyesight. To control this extraneous variable the questionnaires were read to each subject and the researcher marked the respondent's answer on the sheet.

6. Discussion of any question could have influenced the respondent's answer. To control this extraneous variable, all questions were read to the subject without interpretations, interjection, or explanation. If the respondent asked for clarification, the question was read again.

7. Respondent set could have occurred with the Rosenberg tool if the questions were asked in the order they appear on the sheet. To control this extraneous variable, the researcher asked the questions utilizing a different sequence (Appendix C).

Instruments

Two instruments were used in this study: (a) the Rosenberg Self-Esteem Scale (Appendix C) and (b) the Exercise Activities Questionnaire (Appendix D). Further discussion about the tools will follow.

Self-esteem was measured by a six item Guttman scale based on 10 questions called the Rosenberg Self-Esteem Scale (Rosenberg, 1965). Written permission was granted to use the tool for this study (Appendix E). The tool consists of

10 questions with responses from "strongly agree" to "strongly disagree". The Guttman scale items are presented in Appendix C from the strongest to the weakest responses. However, the questions were asked in a different sequence during the interviews to avoid respondent set (Appendix C).

According to George and Bearon (1980), the Rosenberg tool is unidimensional. It enabled the researcher to rank individuals along a single continuum from those who had very high to very low self-esteem. Total scores on the Rosenberg tool range from zero to six. Higher cumulative scores reflect lower self-esteem.

Following Rosenberg's technique of scoring (1965), the Rosenberg tool was scored by counting the total number of positive responses on the six scale items (Appendix C). Scale item I consisted of questions 1, 2, and 3. If the respondent answered two out of three or three out of three positively, a positive score was given. Questions 4 and 5 made up scale item II and questions 9 and 10 made up scale item VI. One out of two or two out of two positive responses were considered positive scores for these scale items. Scale items III (question 6), IV (question 7), and V (question 8) were simply scored as positive or negative.

The cumulative score was derived from the respondent's pattern of answers to all of the scale items. For instance, a score of zero was derived from negative responses to all scale items. A score of one was derived from a positive

response to scale item VI. A score of two was derived from a positive response to scale items V and VI or to item V. A score of four was derived from three or more positive responses on scales III, IV, V, and VI.

Internal consistency has been reported at .92 (Rosenberg, 1965). George and Bearon (1980) report a scaleability coefficient of .72 and a test-retest reliability of .85. According to George and Bearon (1980), convergent validity ranges from .56 to .83 between the Rosenberg Self-Esteem Scale and other measures of self-esteem.

Three weeks after the initial interview, 10% of the population was retested. Results showed a reliability coefficient of .71.

There has been discussion on the optimal scoring format used with the Rosenberg Self-Esteem Scale (George & Bearon, 1980). According to George and Bearon (1980), the scoring of the Rosenberg tool using Guttman scaling versus a simple summing procedure remains an unresolved issue. Using a simple summing procedure could significantly change the results of this study. The Guttman scaling was chosen because it is the method suggested by Rosenberg (1965).

The Exercise Activities Questionnaire was developed by the researcher. The questionnaire was developed to determine the type and amount of physical activities individuals participated in and whether they exercised alone or with others. An extensive review of the literature did not reveal

a tested tool of this nature.

The reliability of this tool was established by retesting 10% of the population three weeks after the initial interviews. The reliability coefficient was found to be .57. This low score reflects major health changes, and thus activities changes, experienced by two of the seven subjects retested rather than low reliability of the instrument.

Data Collection

Permission to interview the elderly living in the highrises was obtained from the tenant service officer (Appendix A). After receiving written permission from the tenant service officer, the researcher met with the tenants in each building for 20 minutes prior to a noon meal. The researcher was introduced by the tenant service officer, and the researcher explained to the tenants the purpose of the study and asked for volunteers who would be willing to participate. Interview times were established for the convenience of the participants. The interviews were conducted in the privacy of each individual's apartment. At the start of the interview, the researcher read the face sheet (Appendix B) to each subject. The face sheet identified the researcher, the purpose of the study, and assured each subject confidentiality. Written consent from the subject was then obtained. The Rosenberg Self-Esteem

Scale (Appendix C) and the Exercise Activities Questionnaire (Appendix D) were read to each participant and the responses to the questions were written on the questionnaire by the researcher. No other individuals were present while the subject was interviewed. The researcher wore a white lab coat over street clothes and a name tag to each interview. Confidentiality was assured to the subjects by the use of coding.

Treatment of Data

A summary of the data is provided with a description of the sample including a frequency distribution and percentages for the subjects' age ranges. The cumulative scores, mean, and standard deviation were calculated from the responses to the Rosenberg Self-Esteem Scale. The responses to the Exercise Activities Questionnaire were compiled and the frequency and percentages of those who exercised and those who did not exercise were calculated. The frequency distribution and percentages of the type of exercises the elderly performed were determined and the number of subjects who exercised alone and with others was identified. The mean days and hours per week of exercise performed by the subjects were also calculated.

After calculating the results of the self-esteem tool and the exercise activities tool, the results were analyzed using mean scores and standard deviations. Chi-square was

used to determine if there was a relationship between the self-esteem of the elderly exercising in groups and the elderly exercising alone. The .05 level of significance was used to accept or reject the null hypotheses.

The Pearson Product Moment Correlation was used to determine if there was a linear relationship between the self-esteem of the elderly and the amount of exercise per week the elderly performed. Chi-square was used to determine if there was a relationship between exercise and self-esteem. The .05 level of significance was used to accept or reject the null hypothesis.

CHAPTER 5

Analysis of Data

This chapter deals with the descriptive analysis of the data including a description of the sample, results of the Rosenberg Self-Esteem Scale, and Exercise Activities Questionnaire. The chapter also presents results of hypotheses testing.

Description of the Sample

A total of 70 individuals were interviewed by the researcher in three elderly highrise apartment buildings. To partially control extraneous variables, a non-random homogeneous sample was selected for data analysis. From the population interviewed, only females over 62 living alone in an elderly highrise apartment building in southwestern South Dakota were selected for data analysis.

Only three men, 62 years of age or older, participated in the interview, and these questionnaires were omitted from the data analysis. One married woman living with her husband was interviewed. This questionnaire was also omitted from the study. Two participants did not fit the age requirements and they were omitted. The responses of three subjects were incomplete. These three subjects were omitted from the data analysis. From the deletions a homogeneous sample was attained.

The data analysis for this study is based on a sample

of 61 elderly women who lived alone in the elderly highrise apartment building. All subjects were 62 years of age or older.

Highrise apartment building number one accommodated 97 tenants. Twenty percent of the sample (12 subjects) lived in building one. Highrise number two housed 106 elderly. Forty-one percent of the sample (25 subjects) lived in this highrise. Highrise number three housed 56 residents. Thirty-nine percent of the sample (24 subjects) lived in building three. Sample bias could have been introduced by the high proportion of building three residents who participated in the study. A smaller number of residents in building three could have fostered greater sociability which could have affected self-esteem. Building three also had a regular group exercise class which could have affected self-esteem. However, comparison of the mean scores of self-esteem indicated that building one, two, and three were quite close with mean self-esteem scores of 2.00, 1.56, and 1.63 respectively.

The subjects' ages ranged from 62 to 94 years. The mean age was 79.2 years and the most common age was 85. The frequency distribution and percentages for the ages are displayed in Table 1.

Fifty-three (86.9%) subjects were widowed. Five (18.2%) subjects were divorced. Two (3.3%) subjects were single and one (1.6%) subject was separated.

Table 1
 Frequency Distribution and Percentages
 for Age Ranges

Age Range in Years	Frequency	Percent of Sample
62-64	1	1.6
65-69	4	6.6
70-74	12	19.7
75-79	14	23.0
80-84	11	18.0
85-89	17	27.9
90-94	<u>2</u>	<u>3.3</u>
TOTAL	61	100.1 ^a

^aPercentages do not total 100 because of rounding to one decimal place.

Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale was used to determine the subjects' level of self-esteem, and scores could range from 0.00 to 6.00. Lower scores reflected higher self-esteem. The cumulative scores and standard deviation were calculated from the responses to the self-esteem tool. Subjects' scores ranged from 0.00 to 6.00. The overall mean score was 1.64. The standard deviation was 1.77.

Exercise Activities Questionnaire

The Exercise Activities Questionnaire was employed to determine the type and amount of exercise the elderly participated in and whether they exercised alone or with others. Table 2 shows the exercise habits of subjects in each building. A total of 19 subjects did not report any exercise while 42 subjects reported some type of weekly exercise.

Walking was found to be the most popular form of exercise reported among the elderly population studied. Table 3 shows the types of exercises performed and the frequency distribution and percentages.

Of the subjects who reported exercising, 64% reported exercising alone (27 subjects) and 37% reported exercising with others (15 subjects).

Building number three had aerobic exercise classes within the building three days a week. The aerobic classes

Table 2

Weekly Exercise Activities By Building

Elderly Highrise Apartment Building	Number of Subjects Reporting No Exercise	Number of Subjects Reporting Some Exercise
1	4	8
2	10	15
3	5	19
TOTAL	19 (31% of sample)	42 (69% of sample)

Table 3

Type of Exercise by Frequency and Percentages

Type of Exercise	Frequency	Percent of Subjects Who Exercise
Walking	31	74.0
Stationary Bicycle	1	2.4
Stationary Bicycle and Walking	3	7.0
Aerobics	5	12.0
Aerobics Class and Walking	2	4.8
TOTAL	42	100.2 ^a

^aPercentages do not total 100 because of rounding to one decimal place.

were conducted by one of the tenants residing in the building. A total of seven subjects participated in these classes on a regular basis at the time of this study.

The mean days per week of exercise activities for the entire sample and specifically for the respondents in the sample who exercised is displayed in Table 4.

Table 4
Mean Days per Week of Exercise

	n	Mean
Entire Sample	61	3.5
Subjects Who Reported Exercise	42	5.1

Table 5 shows the mean hours of exercise that this elderly population reported.

Table 5
Mean Hours per Week of Exercise

	n	Mean
Entire Sample	61	1.7
Subjects Who Reported Exercise	42	2.5

Hypothesis Testing

The first null hypothesis stated there was no relationship between the type of exercise and the self-esteem

of the elderly. Table 3 shows the frequency distribution and percentages of the type of exercises reported by the elderly female subjects. Thirty-one subjects (74%) walked for exercise. There were not enough subjects reporting other types of exercise activities to test hypothesis one.

The second null hypothesis stated there was no relationship between self-esteem of elderly who exercise in groups and elderly who exercise alone. Table 6 presents the mean and standard deviation of the self-esteem of individuals who reported exercising in groups and those who reported exercising alone.

Table 6

Self-Esteem of Subjects Exercising in Groups and
Subjects Exercising Alone

	n	Mean Self-Esteem	Standard Deviation
Subjects Exercising in Groups	15	1.2	1.5
Subjects Exercising Alone	27	1.7	1.9

The statistical test used to determine the relationship between the self-esteem of the subjects reporting exercising in groups and subjects reporting exercising alone was Chi-square. Table 7 presents the findings.

Table 7

Relationship of Self-Esteem of Subjects Exercising in
Groups and Exercising Alone Using Chi-Square

df	χ^2 .05	χ^2
3	.352	1.59

Since $1.59 > .352$ the null hypothesis was rejected. There was a relationship between the self-esteem of subjects exercising in groups and subjects exercising alone.

The third null hypothesis stated there was no relationship between the amount of exercise per week and the self-esteem of the elderly. The Pearson Product Moment Correlation was the statistical test used to determine if a linear relationship existed. Table 8 shows the results. The third null hypothesis was accepted. There was no linear relationship between the amount of exercise per week and the self-esteem of the elderly population studied.

It was noted that there were 22 subjects who exercised seven days a week and had an average self-esteem of 2.5. Seventeen of these subjects reported exercising alone. Subjects exercising three days a week had an average self-esteem of 1.50. Those who did not exercise had an average self-esteem of 1.89.

The Pearson Product Moment Correlation was the statistical test used to test for a correlation between

Table 8

The Relationship Between the Number of Days per Week
of Exercise and Self-Esteem Using the Pearson
Product Moment Correlation

	df	r .05	r
Self-Esteem/ Days per Week	59	0.250	0.09
Self-Esteem/ Hours per Week	59	0.250	0.11

level of self-esteem and number of days per week of reported exercise. The test was applied twice, once to level of self-esteem and number of days per week of reported exercise from zero days to three days, and secondly, to the level of self-esteem and number of days per week of reported exercise from one day to three days. The results are presented in Table 9.

Table 9

The Relationship Between Self-Esteem of Subjects
Exercising 0-3 Days per Week and 1-3 Days per
Week Using the Pearson Product
Moment Correlation

	df	r .05	r
Self-Esteem/ 0-3 Days per Week	31	.349	.25
Self-Esteem/ 1-3 Days per Week	11	.553	.17

The results showed that there was no linear relationship between the level of self-esteem and number of days per week exercised, whether testing 0-3 days or 1-3 days.

Since statistical analyses showed that there was no relationship between the amount of exercise reported per week, either expressed as days per week or hours per week, the sample was then analyzed by comparing the levels of

self-esteem of those who reported exercising to the levels of self-esteem of those who reported no exercise. Table 10 presents the mean and standard deviation of the self-esteem of the subjects, categorized by whether any exercise was reported.

Table 10
Self-Esteem of Subjects Reporting Exercise
and Reporting No Exercise

	n	Mean Self-Esteem	Standard Deviation
Subjects Who Reported Exercise	42	1.5	1.8
Subjects Who Reported No Exercise	19	1.9	1.7

Table 11 presents the association between exercise and self-esteem which was tested by the use of Chi-square.

Table 11
The Relationship of Exercise and
Self-Esteem Using Chi-Square

df	χ^2 .05	χ^2
3	.352	.83

Since $.83 > .352$ it can be concluded that there was a significant difference in the level of self-esteem between the subjects who reported some type of exercise compared

to those who reported no exercise.

Summary of Data Analysis

The following statements summarize the findings in this study.

1. The average age of the subjects in this sample was 79.2 years of age.
2. The average self-esteem score for the subjects in this study was 1.64 which reflects a high level of self-esteem. The Rosenberg Self-Esteem Scale was scored from 0-6. The higher scores reflect lower self-esteem.
3. The most common type of exercise reported by the subjects was walking.
4. Sixty-nine percent of the sample did some type of exercise weekly.
5. The sample engaged in exercise activities on an average of 3.5 days per week.
6. The sample engaged in an average of 1.7 hours per week of exercise.
7. There were 22 subjects who exercised seven days a week and had an average self-esteem score of 2.5.
8. Subjects who reported no exercise had a mean self-esteem score of 1.89.

Summary of Hypotheses Testing

The following null hypothesis could not be tested because the majority of the subjects participated in only

one type of exercise, walking: There is no relationship between the type of exercise and the self-esteem of the elderly.

The rejection of the null hypothesis based on the statistical testing implied acceptance of the following research hypothesis: There is a relationship between the self-esteem of elderly who exercise in groups and elderly who exercise alone.

The following null hypothesis was not rejected at the .05 level of significance: There is no relationship between the amount of exercise per week and the self-esteem of the elderly.

CHAPTER 6

Summary, Conclusions, Implications, Limitations and Recommendations

The following chapter summarizes the research problem and the design of the study. Major findings and conclusions are presented. Implications and limitations of the research study are presented. Recommendations for further research concludes this chapter.

Summary of the Research Problem and Design

Because of the growing number of elderly within the United States, nurses will have increasing contact with older clientele. One of the goals of health care professionals is to facilitate greater self-esteem within their clientele, thereby promoting an improved quality of life for the individual. Nurses need to identify methods that will restore and maintain positive self-esteem for individuals living their later years of life.

It has been recognized that physical exercise promotes a sense of well-being within individuals. Therefore, the problem under investigation was to determine the relationship of the elderly's self-esteem and exercise activities.

A review of the literature related to the problem indicated that physical activities promote positive mental changes within individuals in a variety of population groups.

However, literature identifying the psychological benefits of exercise specifically in the elderly population is limited.

This study was conducted at three elderly highrise apartment buildings in a southwestern city in South Dakota. Interviews were conducted using the Rosenberg Self-Esteem Scale and the Exercise Activities Questionnaire. The questionnaires gathered data which, through statistical testing with Chi-square and the Pearson Product Moment Correlation, showed the relationship of the dependent variable of self-esteem with the independent variables of the type of exercise, exercise performed in groups and alone, and the amount of exercise performed.

Major Findings and Conclusions

Major Findings - Objective One. The average scores of the self-esteem tool was 1.64 on a scale of 0 to 6. This reflected a high self-esteem within the elderly population studied.

Conclusions - Objective One. The literature findings on the self-esteem of the aging population are inconsistent. The finding that the elderly population in this study had a high level of self-esteem supports a similar finding by Aitken (1982) who found that elderly adults had positive self-esteem.

Major Findings - Objective Two. Sixty-nine percent of the population studied engaged in some form of weekly physical

exercise activity.

Conclusions - Objective Two. A large portion of the elderly studied did participate in exercise activities. This may be due to recommendations given to the individual by health care professionals. A personal desire to improve or maintain their present health status may also be prompting the elderly to exercise. The elderly may also notice the positive psychological benefits of exercise.

Major Findings - Objective Three. Walking was found to be the most popular form of exercise among the elderly studied. Seventy-four percent of the group walked for exercise. Building number three had an aerobic exercise class three days a week. A total of seven subjects in building three participated in these exercise classes.

Conclusions - Objective Three. When promoting exercise activities for the elderly, the nurse should first assess what type of activity is more desirable to the individual or group. Nurses should arrange for the favored type of exercise activity and promote its use in elderly highrises, elderly neighborhoods, nursing homes, and senior citizen centers.

Major Findings - Objective Four. The self-esteem of the elderly who exercised in groups was found to be higher than those who exercised alone.

Conclusions - Objective Four. Nurses may want to encourage elderly to exercise with others. Exercising with

others may promote socialization which may promote positive self-esteem.

Major Findings - Objective Five. Statistical analyses showed that there was no relationship between the amount of exercise reported and the self-esteem of the elderly population. However, it was noted that the self-esteem scores reflected a lower self-esteem for those exercising alone seven days a week. It was also noted that subjects who exercised had a higher self-esteem than subjects who did not exercise.

Conclusions - Objective Five. Nurses may need to assess why the elderly are exercising at such frequent intervals. It may be due to fear of dying or a fear of losing independence. It may also be due to misinterpretation of health care professionals' advice to exercise on a regular basis. Encouraging the elderly to exercise with others may promote a less rigorous schedule of exercise activities. Exercising with others may also promote positive self-esteem.

Implications of Research

This study was concerned with the relationship of self-esteem and exercise activities in the elderly. The implications of the study are as follows:

1. Nursing identifies that a positive regard for oneself is an essential need for every human being and plays an important part in every individual's mental and physical

health. A review of the literature also supports the idea that participation in a regular exercise program results in improved physiological functioning and mental well-being. This study has shown that elderly female subjects who exercise have a higher self-esteem in comparison to elderly female subjects who do not exercise.

Nurses should routinely assess the level of self-esteem and exercise habits of elderly clientele. By including the level of self-esteem and exercise activities as part of the general assessment of the client, the nurse can begin to develop a plan of care that would be most beneficial to the individual.

2. Life experiences and interactions with others create the conditions that influence an individual's self-esteem (Crouch & Straub, 1983). This study has shown that elderly subjects who exercise with others have a higher self-esteem in comparison to elderly subjects who exercise alone.

Nurses should recognize the importance of encouraging elderly to participate in group exercise activities as a method of promoting a positive self-esteem within the individual. Nurses should implement group exercise classes within nursing homes, senior citizen centers, and elderly living complexes in ways which enhance the social nature of the exercise. Interactive exercises and exercises which require partners should be promoted.

3. This study showed that there was no linear relationship between the amount of exercise the elderly performed per week and their self-esteem. It was also noted that 22 subjects who exercised seven days a week had a lower self-esteem in comparison to subjects who exercised three days a week.

Nurses should teach appropriate exercise activities and routines to the elderly. Nurses should stress that more exercise is not necessarily better for the individual.

4. Nurses should continuously evaluate the effectiveness of already implemented group and individual exercise on the self-esteem of elderly clientele.

5. Studies conducted by Lee (1976), Simons (1985), and Aitken (1982) indicated that the elderly possess a positive self-identity. This research study has also identified a positive self-esteem in the elderly female subjects studied.

Nurses should not accept the myth that elderly suffer a decrease in self-esteem because of normal changes associated with aging. Through continued research the myths of growing old can be dispelled.

Limitations of the Study

The limitations of the study were:

1. The sample was non-random; therefore, the findings and conclusions were restricted to the sample and cannot be generalized.

2. The reliability of the Exercise Activities Questionnaire was low.

3. The sample size was small which leads to low statistical power.

Recommendations for Further Study

The following recommendations are proposed as a result of this study:

1. The study should be replicated using larger samples of elderly living in a variety of settings.

2. Twenty-two subjects in this study exercised seven times per week and had a lower self-esteem than subjects who exercised three times per week. Did the subjects exercise seven times per week mistakenly believing it would stave off death? Further studies should be conducted to determine why the elderly participate in exercise activities.

3. This research study only studied a correlation between two variables and was not designed to show a causal relationship. Further experimental studies should be conducted on the self-esteem of the elderly before and after participating in group and individual exercise programs.

4. This study indicated that subjects who exercised in groups had a higher self-esteem in comparison to subjects who exercised alone. Further studies should be conducted to determine group activities with foci other than exercise that

may produce a higher level of self-esteem in the elderly. This would provide nurses with a broader range of interventions that could be utilized to increase self-esteem in elderly clientele.

5. This study indicated that subjects who exercised had higher self-esteem than those who did not exercise. According to Orem (1985), positive self-esteem promotes self-care. Further studies should be conducted to investigate the relationship between exercise activities and self-care practices.

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APPENDIX A
Agency Permission

Permission for Graduate Nursing Student to Collect Data at Valley View, Jackson Heights, and River Ridge Apartments. This Elderly Housing is Provided by the Pennington County Housing Authority.

For Student Completion:

NAME Marcia Taylor DATE May 23, 1986

FACULTY THESIS/PROJECT ADVISOR Lilah Pengra

STUDY APPROVED BY FACULTY YES NO :

BY UNIVERSITY HUMAN SUBJECTS COMMITTEE YES NO

FACULTY AND STUDENT SIGNATURES

Lilah Pengra

Marcia Taylor

SUMMARY OF INFORMATION TO BE COLLECTED

Type of Data: The level of each participant's self-esteem will be measured utilizing Rosenberg's Self-Esteem tool. Types of exercise activities will also be assessed.

Method of Collecting Data: Personal interview

Use of Data: The data will be used to determine the correlation between 1)the self-esteem of the elderly who participate in physical exercises 2)the self-esteem of the elderly who participate in physical exercises with others, 3) the self-esteem of elderly who participate alone, 4) the self-esteem of elderly who do not participate in physical exercise.
For Completion by Manager

Approved to Proceed as Described

Disapproved

Approved with the Following Modification

- Copies:
1. Student
 2. File Valley View, Jackson Heights, River Ridge Apts.
 3. Faculty Thesis/Project Advisor
 4. Graduate Program Office - SDSU

J. Wood
Manager, Valley View, Jackson Heights, River Ridge

5/23/86
Date

Tenant Service Officer

APPENDIX B

Face Sheet

Agreement between _____ and Marcia Taylor.

This research project is looking at people's beliefs about themselves and their exercise activities. It will involve 30 minutes of time to answer two sets of questions and would involve no discomfort or risk to the participating person.

The information gained through these questionnaires will be shared with Vicki Wood, the apartment manager and any interested participants.

The confidentiality of the participating individuals will be maintained as no names or identifying codes will be used. The researcher will answer all questions and if a question arises, feel free to contact Marcia Taylor at 341-7108.

Participation in this project is voluntary and refusal to participate will involve no penalty or loss of benefits to which the individual is otherwise entitled. The participant may discontinue at anytime without penalty or loss of benefits to which he/she is otherwise entitled.

APPENDIX C

The Rosenberg Self-Esteem Scale

This is a questionnaire to determine the way in which people think about themselves. To the side of each statement are four responses ranging from strongly agreeing to strongly disagreeing to the statement. For each question, please check one response that best represents your feelings.

Test Number _____

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
1. I feel that I am a person of worth, at least on an equal plane with others. (7)			*	*
2. I feel that I have a number of good qualities. (3)			*	*
3. All in all, I am inclined to feel that I am a failure. (9)	*	*		
4. I am able to do things as well as most other people. (4)			*	*
5. I feel I do not have much to be proud of. (5)	*	*		
6. I take a positive attitude toward myself. (10)			*	*
7. On the whole, I am satisfied with myself. (1)			*	*
8. I wish I could have more respect for myself. (8)	*	*		
9. I certainly feel useless at times. (6)	*	*		
10. At times I think I am no good at all. (2)	*	*		

* - Indicate Positive Responses

Numbers to the right of the question indicate the order in which the questions were actually asked.

APPENDIX D
Exercise Activities Questionnaire

TEST NUMBER: _____

SEX: _____

MARTIAL STATUS: _____

AGE: _____

This is a questionnaire to determine the kind and amount of physical exercise activities individuals participate in. Identify the exercises you do in column one. Then write in the times per week, and minutes or hours per week that you do each activity. Also check the boxes in column 4 or 5 to indicate whether the activity is done alone or with others.

WHAT KIND OF EXERCISE DO YOU DO?	TIMES/WEEK	MIN./HRS. PER WEEK	ALONE	WITH OTHERS
Walking for pleasure				
Using stairs when elevator is available				
Hiking				
Bicycling for pleasure				
Dancing - Ballroom/square				
Jogging and walking				
Swimming				
Bowling				
Table tennis				
Tennis				
Golf: riding a power cart				
Golf: walking, pulling clubs on cart				
Golf: Walking and carrying clubs				
Weeding and cultivating garden				
Spading, digging, filling in garden				
Carpentry in workshop				
Fishing from creek bank				
Fishing with wading boots.				
Other				

APPENDIX E

Written Permission for Use of the Rosenberg
Self-Esteem Scale



To answer your letter more promptly ... we are taking the liberty of replying by notations on your letter. We feel certain that you will permit us this informality which allows a faster reply.

Princeton University Press

Marcia Taylor
Rt. 8 Box 2345
Rapid City, S. Dak. 57702

Joan Palatine
Permissions Office
Princeton University Press
Princeton, New Jersey, 08540

Dear Ms. Palatine

I am a graduate nursing student at South Dakota State University. I have begun to work on my research and would like to utilize Rosenberg's scale on self-esteem found in Society and the Adolescent Self-Image, 1965.

My research will be on the relationship of self-esteem and exercise in an elderly population. I would appreciate permission to utilize Rosenberg's scale. I will need approximately sixty copies of the questions and would like any information regarding the reliability, validity and use of the scale.

M. Rosenberg's personal address would be helpful if this information is not available through the publishing company.

Thank you for your help.

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Sincerely,

Marcia Taylor
Marcia Taylor

8/22/85

Morris Rosenberg, Society and the Adolescent Self-Image. Copyright (c) 1965 by Princeton University Press; Princeton Paperback, 1968. Reprinted by permission of Princeton University Press.

NOTE: Dr. Rosenberg can be contacted for information on administration of the scale at the following address: Department of Sociology, University of Maryland, College Park, Maryland 20742
Princeton University Press does not provide copies of the scale.

Joan Palatine
Permissions Manager