EVALUATION OF THE RELATIONSHIP BETWEEN EXERCISE AND SELF-ESTEEM

by

Debra Rouse

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

1993
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Signed: Debra L. House

APPROVAL BY THESIS DIRECTOR

This thesis has been approved on the date shown below:

Jacqueline Sherman
Associate Professor of Nursing
ACKNOWLEDGMENTS

Appreciation is extended to my committee members, Dr. Jacqueline Blank-Sherman, Dr. Lee Sennott-Miller, and Ms. Marilyn McEwen for their guidance with this thesis study. I would especially like to thank Dr. Blank-Sherman for her support and encouragement. A special thank you is extended to Rannie Fox for her patience and endurance in typing this thesis.

The emphasis placed on education by my parents provided me with the necessary background to make this possible. Their love and continuous belief in my abilities provided me with the confidence to continue my education.

A very special thank you goes to my companion in life, Brad, who encouraged and supported me throughout my graduate education. His love and understanding made this adventure possible.
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ABSTRACT

This study examined the relationship between exercise and self-esteem. Exercise was categorized by type of activity performed. The types of exercise were endurance, flexibility, and strengthening (Mellin, 1987). Self-esteem was assessed by the Coopersmith self-esteem inventory for adults (Coopersmith, 1981). An adaptation of Pender's Health Promotion Model was used to guide the descriptive study.

Data was collected via three written questionnaires. The questionnaires addressed demographics, exercise patterns and self-esteem. Forty-nine participants from the staff of a local middle school comprised the convenience sample. Data was analyzed with correlational statistics, one-way ANOVA, and Tukey HSD to determine the relationship between exercise and self-esteem.

No relationship was found between demographic characteristics, exercise patterns, and self-esteem. Self-esteem scores were much lower than reported norms. The major implication for community health nursing was development of an increased awareness of methods to assess and enhance self-esteem.
CHAPTER 1
INTRODUCTION

Physical fitness and optimal mental health have been outlined in the National Health Objectives for the Year 2000 as goals for the nation (American Public Health Association, 1991). Physical fitness is defined as activities that promote endurance, strength or flexibility (APHA, 1991; Hellin, 1987). It is proposed that a 40% increase in physical activity occur by the year 2000 (APHA, 1991). The community is also challenged to increase the availability of exercise programs and facilities to its members (APHA, 1991).

Optimal mental health includes reduction of stress and emotional problems (APHA, 1991). People who exercise regularly have previously reported improved mental health and decreased stress as benefits of exercise (Dishman, Sallis, & Orenstein, 1985). Self-esteem has been considered a component of mental health (Coopersmith, 1981).

Self-esteem is the affective portion of the personal view that an individual has of himself (Stanwyck, 1983). Basic self-esteem is the portion of self-esteem that develops through childhood and remains relatively stable throughout a person's life (Crouch & Straub, 1983).
Functional self-esteem is the portion of self-esteem that fluctuates positively or negatively based on current events in the adult years (Crouch & Straub, 1983). Functional self-esteem is based on a dynamic evaluation of perceptions the individual has of himself and his relationships with others (Crouch & Straub, 1983). Functional self-esteem may exceed or fall below basic self-esteem and may be enhanced independently or with assistance (Crouch & Straub, 1983). Basic self-esteem is very difficult to alter in the adult years (Crouch & Straub, 1983). For the purpose of this study, functional self-esteem will be addressed.

Higher levels of self-esteem have been positively correlated to better physical performance (Pender, 1987). However, studies examining the relationship between exercise and self-esteem have reported conflicting results (Bonheur & Young, 1991; Langemo, Volden, Oeschle, & Adamson, 1990; Gillis & Perry, 1991). A better understanding of the relationship between exercise and self-esteem will enable the community to design programs prepared to meet the year 2000 objectives.

Purpose of Study

The purpose of this study was to examine the relationship between self-esteem and exercise. Exercise was categorized as flexibility, endurance or strengthening
interventions may be developed. Learning disabled children may need special classes so that they may succeed in school. Success in school will influence development of self-esteem by allowing the children to achieve scholastic goals that they are capable of achieving. Children with medical problems may require assistance with disease management so that they can participate in school activities. If children are able to participate in the same programs as their classmates, feelings of competence may be enhanced.

Intervention at the work place may be indicated for adult populations. The employee health nurse must assess the population and identify group needs. Programs will need to be designed to meet the needs of the group. The programs will need to allow for populations with physical or medical limitations.

Summary

This study examined the relationship between self-esteem and exercise. Functional self-esteem was assessed. Exercise was divided into three categories. The categories were strengthening, flexibility, and endurance.
activities. The relationship between type of exercise performed and self-esteem was examined. Previous studies have primarily examined aerobic exercise only. This study allowed a variety of exercises to be examined. The study also examined the relationship between the demographic variables of age, gender, weight, education, career satisfaction, presence of significant other and exercise patterns.

**Significance to Community Health Nursing**

Community health nurses (CHN) are in a position to assess self-esteem and health behaviors within a population. Once the assessment is completed, diagnoses and goals can be established within the community. If a relationship is found between self-esteem and exercise, intervention in both areas may be indicated. If perceptions of competence are low, goals may be designed to maximize the likelihood of success. Goals need to be established with the population group so that the goals can be achieved. With repeated successes, perceived competence should increase.

School nurses, one group of CHN, are in a unique position to influence development of basic self-esteem and adoption of health promoting behaviors. The school nurse must initially assess the population and identify needs of the group. Once the needs are identified, goals and
CHAPTER 2

LITERATURE REVIEW AND CONCEPTUAL MODEL

The purpose of the literature review is to discuss factors affecting self-esteem, sources of self-esteem and the relationship between self-esteem and health. The literature review will also discuss the categories of exercise, the relationship of exercise to physical and mental health. Studies examining self-esteem and exercise will also be presented. Pender's Health Promotion Model is presented as well as the modified model that will guide this study.

Factors Affecting Self-Esteem

Functional self-esteem is influenced by employment, financial success, and relationships with peers and significant others (Crouch & Straub, 1983). Parenting, retirement and mortality may also affect functional self-esteem (Crouch & Straub, 1983). Achievement of goals set by the individual or by others is positively correlated to self-esteem (Crouch & Straub, 1983). This indicates that achievable goals should be individually established.
Successfully meeting achievable goals will enhance self-esteem based on employment, finances and interpersonal relations.

**Sources of Self-Esteem**

Coopersmith (1967) reported four sources of self-esteem that are common to all people. The importance placed on each source may vary among individuals. The four sources identified are significance, power, virtue and competence (Coopersmith, 1967).

**Significance**

Significance refers to a person's perceived acceptance by others (Coopersmith, 1967). Significance is measured by the perception of being accepted and liked by others. Accepting parents assist in the development of basic self-esteem in their children. As the child grows, functional self-esteem is positively developed with perceived acceptance by teachers, friends, and others. Adults seek acceptance from significant others, friends, co-workers and others (Coopersmith, 1967). Perceived significance may be altered by marriage, divorce, a new child, a superior at work or an interaction with anyone viewed as important to the individual (Stanwyck, 1983).
Power

Power refers to the individual's perceived ability to influence others (Coopersmith, 1967). Power is evaluated based on the respect others give to an individual. Power also encompasses the individual's control over their own behavior. Power will vary among individuals (Coopersmith, 1981). Power may also be related to career position or financial status.

Competence

Competence refers to the perception of one's ability to achieve goals (Coopersmith, 1981). Goals include those that the person sets for himself and the goals set by others. Perceived difficulty has been shown to negatively influence performance of health promoting behaviors (Sennott-Miller & Miller, 1987).

Virtue

Virtue is evaluated by adherence to personal values and ethics (Coopersmith, 1981). This refers to the person's perception that they are living within their own value system. Virtue also includes the person's religious or spiritual beliefs.

Individuals may vary in the importance of each area. It has been proposed that competence and significance may
have the greatest influence in the majority of adults (Coopersmith, 1981). Career stability and intimate relationships have been suggested as the major sources of functional self-esteem in the adult years (Stanwyck, 1983).

Self-Esteem and Health

A positive relationship between self-esteem, lifestyle and social support has been demonstrated by previous studies (Muhlenkamp & Sayles, 1986; Volden, Langemo, Adamson, & Oeschle, 1990). Women with higher self-esteem have been found to be more likely to perform breast self-examination (Hallal, 1982). A positive correlation has also been found among nutrition, stress management, self-actualization, health responsibility and self-esteem (Volden, Langemo, Adamson, & Oeschle, 1990). Self-efficacy, an individual's perceived ability to perform a task, increases with increased self-esteem (Bandura, 1977). An individual's coping ability also increases with higher levels of self-esteem (Bandura, 1977). Another study found that individuals with higher levels of self-esteem had greater success in weight reduction programs (Nir & Neumann, 1991). Higher levels of self-esteem are associated with increased success in meeting goals, increased independence, and ability to resist societal pressures (Coopersmith, 1981).
Self-esteem is also positively correlated to physical performance (Pender, 1987).

Exercise

The effects of exercise on the body are dependent on the type of exercise performed (Bassey & Fentem, 1981). Exercises can improve muscle strength, flexibility, or endurance (Mellin, 1987).

Flexibility

Flexibility exercises are those that stretch tendons, ligaments, and muscles (Mellin, 1987). Flexibility exercises maintain range of motion of the joints (Bassey & Fentem, 1981). Flexible tendons and ligaments are able to act as shock absorbers and maintain stability of joints.

Muscle Strength

Activities that require 80% or more of a muscle's maximum strength will result in increased strength (Bassey & Fentem, 1981). Strengthening exercises are also referred to as isometric exercises (Bassey & Fentem, 1981). Strengthening exercises are specific to the muscles used (Bassey & Fentem, 1981).
Endurance activities improve the ability of the body to take up oxygen (Bassey & Fentem, 1981). The improved oxidative capacity results in less demand on the circulatory system (Bassey & Fentem, 1981). The cardiac muscle will increase the stroke volume with endurance exercise. This type of exercise is also known as aerobic exercise (Mellin, 1987). Endurance exercises require the steady use of large muscles (Mellin, 1987).

Non-exercisers

For the purpose of this study, all participants that do not perform one of the defined exercise categories were considered non-exercisers. Non-exercisers will be considered a category of participants just as the three categories of exercise.

Exercise and Health

Several researchers have reported a positive correlation between exercise and performance of other health-promoting behaviors. A longitudinal experimental study guided by the Health Promotion Model reported a positive relationship between exercise and health promoting practices (Gillis & Perry, 1991). Health promoting practices were measured by a 48-item questionnaire with six
subscales that assessed self-actualization, health responsibility, exercise, stress management, interpersonal support and nutrition (Gillis & Perry, 1991). People who report an intention to exercise regularly are also more likely to maintain their ideal weight and avoid stressful situations (Pender & Pender, 1986). Data collected from 497 subjects indicated that exercisers had a higher perceived health status (Langemo, Volden, Oeschle, & Adamson, 1990). Exercisers have also been reported to wear their seat belts more often than non-exercisers (Summerson, Konen, & Dignan, 1991). Physiologic benefits of exercise such as more efficient cardiac function, lower blood pressure and improved lipid profiles have been reported in numerous studies (Summerson, Konan, & Dignan, 1991; Cooper, 1977; Cooper & Cooper, 1972; Horton, 1988; Sechrist, Walker, & Pender, 1987).

Exercise and Mental Health

A positive correlation between perceived personal ability, sense of well-being and exercise was reported by Dishman, Sallis, and Orenstein (1985). Conclusions of the same study proposed that self-evaluation may be a greater determinant of exercise participation than cognitive factors (Dishman, et al., 1985). Exercise has also been found effective in the treatment of depression and perceived
coping ability (Steptoe, Edwards, Moses, & Matthews, 1989; Martinsen, 1990). A quasiexperimental study of 132 patients being treated for depression reported that patients in aerobic and non-aerobic exercise classes for 6 to 9 weeks had lower depression scores than patients who did not exercise (Martinson, 1990).

Studies examining the relationship of exercise and self-esteem have reported conflicting results. Joesting (1981) found that college students exercising five or more times per week scored higher on the Self-cathexis scale. The Self-cathexis scale was designed to measure self-concept (Joesting, 1981). Bonheur and Young (1991) found that exercisers scored higher on the Coopersmith Self-esteem Inventory. Other studies have reported consistent self-esteem scores among exercisers and non-exercisers (Langemo, Volden, Oeschle, & Adamson, 1990; Gillis & Perry, 1991). A limitation of these studies is that only aerobic exercise was considered in the exercise group. The conflicting results indicate a need for further studies to clarify the relationship between exercise and self-esteem.

Conceptual Model

This section will review the Pender Health Promotion Model and introduce a modification of the model which was used to guide this study.
Pender's Health Promotion Model

Pender's (1987) definition of health is consistent with the World Health Organization. Health encompasses the environment and the person as a whole. Pender views health as multi-dimensional. There is a component of stability as well as a dynamic, growth oriented segment (Pender, 1987). Community health focuses on population based health promotion. Health promotion is defined as activities that enhance well-being of the population (Pender, 1987). This includes biologic, psychologic, social and environmental well-being.

The Health Promotion Model was proposed to guide activities to enhance well-being. The model resulted from research studies of health promotion and wellness. The function of the model is to organize concepts and research results, generate hypotheses and undergo revision as needed (Pender, 1987).

The Health Promotion Model has been used to guide other similar studies. A descriptive study of 478 subjects was conducted to examine the relationships among age, gender, exercise, health, life-style and self-esteem based on Pender's model (Volden, Langemo, Adamson, & Oeschle, 1990). The Health Promotion Model was also used to guide an exploratory study that examined benefits and barriers of exercise related to self-esteem (Bonheur & Young, 1991).
Figure 1. The Pender Health Promotion Model.

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A sample of 105 university students answered four questionnaires (Bonheur & Young, 1991). The results supported the Health Promotion Model and indicated a need for further study (Bonheur & Young, 1991).

Cognitive-Perceptual Factors

Cognitive-perceptual factors consist of seven factors that directly influence health-promoting behaviors. The cognitive-perceptual factors are discussed in the following paragraphs.

Importance of Health

Pender reports that the value an individual places on health is positively correlated to the likelihood of participating in health promoting behaviors (Pender, 1987). This means that if a person does not first value their health, they probably will not adopt health promoting behaviors.

Perceived Control

The individual's perception of internal and external control has been demonstrated to affect performance of health promoting behaviors (Williams, 1972; Brown, Muhlenkamp, Fox, & Osborn, 1983). Further study is needed to better define types of control (Pender, 1987).
Perceived Self-Efficacy

This factor is the perception that the individual has of their ability to perform a behavior (Pender, 1987). Previous reports indicate that the higher the level of difficulty, the less likely the individual is to perform the behavior (Sennott-Miller & Miller, 1987). Self-efficacy has also been defined as a component of self-esteem (Coopersmith, 1981).

Definition of Health

An individual's definition of health may determine their health behaviors (Pender, 1987). If health is defined as absence of illness, behaviors may be focused on disease prevention (Pender, 1987). If health is defined as optimal wellness, the focus of activities may be health promotion (Pender, 1987). The definition of health is a dynamic factor with the current trend towards high level wellness (Pender, 1987).

Perceived Health Status

A greater number of physical complaints have been inversely correlated to the likelihood of performing health promoting behaviors (Pender, 1987). The inverse correlation was true regardless of identifiable illnesses (Pender, 1987). It has been proposed that a self-perception of
wellness may increase health promoting activities (Pender, 1987).

**Perceived Benefits of Health-Promoting Behaviors**

Pender found that perceived benefits of health promoting behavior are positively correlated to likelihood of participation in that behavior (Pender, 1987). The health promoting behavior to be examined by this study is exercise or physical activity. People intending to exercise were also found to be more likely to believe that exercise would improve their mental outlook (Pender, 1987). A study of cardiac patients found a positive correlation between physical activity and perceived benefits of the activity (Robertson & Keller, 1992).

**Perceived Barriers to Health Promoting Behaviors**

Pender cites several studies that have found that the greater the number of perceived barriers, the less likely the person is to participate in that behavior (Pender, 1987). One study found that people who did not intend to exercise were more likely to believe that exercise could lead to physical harm (Pender & Pender, 1986). Barriers may be actual or potential.
Modifying Factors

Modifying factors impact health promoting behaviors indirectly by influencing the cognitive-perceptual factors. Demographic factors, biologic characteristics, interpersonal factors, situational factors, and behavioral factors are addressed by Pender (1987).

Demographic Factors

Pender identifies various demographics as influencing cognitive-perceptual factors. Female children have been found to express more concern about their weight than male children (Kim, Sweeney, Janosky, & MacMillan, 1991). Pender (1987) identifies age, race, gender, ethnicity, education and income as factors that affect health-promoting behaviors. A descriptive study was conducted with 478 adults. Results indicated a gradual decline in exercise performance as age increased (Volden, Langemo, Adamson, & Oeschle, 1990). The same study indicated that women had lower self-acceptance scores than men but scored higher on the health-promoting lifestyle profile than men (Volden, et al., 1990). Education and income are proposed as potential influential factors.
Biologic Characteristics

Pender has proposed that biologic factors such as weight, height, posture, and body build influence health promoting behavior. A quasi-experimental study of 270 participants reported that as weight increases, the likelihood of exercising decreases (Summerson, Konen, & Dignan, 1991).

Interpersonal Influences

Interpersonal factors include significant others, family members, spouse, and health professionals. Pender (1987) reports several study results that indicate a correlation between support from others and health promoting behaviors. Individuals that perceived higher levels of social support also scored higher on a lifestyle questionnaire (Hubbard, Muhlenkamp, & Brown, 1984). Women with breast cancer were found to have a higher sense of well-being if they perceived social support (Holland & Mastrovito, 1980). Social support has also been correlated to self-esteem (Dirksen, 1990) and participation in regular exercise (Pender & Pender, 1986). Interaction with health professionals is also included as an interpersonal influence (Pender, 1987).
Situational Factors

Situational factors include access to health promoting activities, environmental conditions and the diversity of available options to select from (Pender, 1987). An example of situational factors may be the distance to health clubs, whether the roads are open or not, and whether the club offers different activities.

Behavioral Factors

The area of behavioral factors involves the individual's previous exposure to health promoting activities (Pender, 1987). If previous experiences were positive, the person may be more likely to perform health promoting actions again. Other behavioral factors include cognitive and psychomotor skills (Pender, 1987). Cognitive skills is the person's knowledge of health promoting behaviors and the associated benefits. Psychomotor skills include the person's feelings about the health promoting behavior as well as the motor ability to perform the behavior.

Stages of Health Behavior

Health promoting behaviors have a high drop-out rate during the first three to six months (Dishman, Sallis, & Orenstein, 1985). After six months the drop-out rate
stabilizes (Dishman, Sallis, & Orenstein, 1985). This indicates that there is an initial stage and a more permanent stage of involvement in health activities.

Modification of the Health Promotion Model

A modification of the Pender Health Promotion Model was used to guide this study (see Figure 2). Modifying factors directly influence health promoting behaviors and indirectly influence cognitive perceptual factors. Health promoting behaviors and cognitive-perceptual factors directly influence each other. The relationship between health promoting behaviors and cognitive-perceptual factors is depicted as bi-directional because this study did not determine cause and effect. Cues to action were not addressed in this study.

Health Promoting Behavior

Type of Exercise Performed

It is not known whether type of exercise is related to self-esteem. The modified health promotion model proposed that a relationship may exist between type of exercise and self-esteem. The study examined this proposed relationship.
Health Promoting Behavior

Type of exercise performed

Length of exercise program

Frequency of exercise sessions

Duration of sessions

What the individual exercises with

Modifying Factors

Demographic Characteristics
- Age
- Gender
- Education
- Smoking status
- Employment
- Career satisfaction

Biologic Characteristics
- Weight
- Ethnicity

Interpersonal Influences
- Marital status

Behavioral Factors
- Previous exercise programs
- PE in school

Cognitive-Perceptual Factors

Enhanced Self-Esteem

Figure 2. Modification of Pender's Health Promotion Model to Examine Exercise and Self-Esteem
Length of Program

Dishman (1982) reported that most habits maintained for six months become permanent. Length was assessed as one to six months and greater than six months. The modified model included length of program as a factor that may have been related to self-esteem.

Frequency of Sessions

Frequency has previously been defined as exercise occurring every one to three days (Bonheur & Young, 1991). The adapted model proposed that frequency may be related to self-esteem.

Duration of Sessions

It is not known whether duration of sessions is related to self-esteem. Duration was included as a cognitive-perceptual factor so that the relationship may be explored.

Modifying Factors

Modifying factors are those factors that influence the cognitive-perceptual factors directly and the health-promoting behavior indirectly. Modifying factors included demographic characteristics, biologic characteristics, interpersonal characteristics, and behavioral factors.
Demographic Characteristics

Demographic data included age, gender, ethnic identification, highest educational level completed, employment status and career satisfaction. There is a natural decline of bodily function as age increases and a difference in heart and lung capacity exists related to gender (Cooper, 1977). Employment and career satisfaction have been correlated to sense of well-being (Dirksen, 1990). Ethnicity and education were included to allow examination of possible relationships.

Biologic Characteristics

Weight was assessed as a biologic characteristic. People who are overweight have been found to be less likely to exercise than those within ideal weight range (Dishman, Sallis, & Orenstein, 1985).

Interpersonal Characteristics

Social support has been previously demonstrated to have a positive correlation to self-care practices (Hubbard, Muhlenkamp, & Brown, 1984). Social support has also been proposed to predict levels of self-esteem (Dirksen, 1990). The modified model identified spouse, significant others, family, friends, and classmates as sources of interpersonal support.
Behavioral Factors

Previous exercise history and smoking status are included as behavioral factors. Past participation in exercise programs has been positively correlated to current exercise status (Dishman, Sallis, & Orenstein, 1985). Smoking has been shown to correlate negatively to exercise (Dishman, Sallis, & Orenstein, 1985).

Cognitive-Perceptual Factor

Self-esteem was examined as a cognitive-perceptual factor. This study assessed the relationship of exercise and self-esteem.

Summary

A modification of the Pender Health Promotion Model provided the framework for this study. The model has been used in similar studies and has been supported by the results of those studies. The goal of the Health Promotion Model is to enhance health and well-being. Physical activity and self-esteem were the concepts to be studied.
CHAPTER 3

METHODOLOGY

This chapter includes a description of the design, sample and setting. The instruments, human subjects protocol and data analysis plan are also discussed.

Design

This descriptive study was designed to examine the relationship of various types of exercise and self-esteem. Descriptive studies are used to acquire information without attempting to demonstrate causality (Polit & Hungler, 1989). Descriptive studies are used because of their ability to efficiently collect extensive information and discover relationships in a short period of time (Polit & Hungler, 1989). The data gathered in this study was useful in determining relationships among the variables that were examined (Burns & Grove, 1987). Once relationships are more clearly established, studies to examine causality can be conducted (Burns & Grove, 1987).

Research Questions

This study answered several research questions regarding the relationship between self-esteem and exercise.
The questions of the study were:

1. Does a relationship exist between self-esteem and exercise?

2. Is there a relationship between age, gender, education, employment, smoking status, previous exercise history and exercise?

3. Is there a relationship between weight, ethnicity and exercise?

4. Is there a relationship between marital status and exercise?

5. Is there a relationship between previous exercise history and current exercise?

6. Is there a relationship between endurance, flexibility or strength exercises and self-esteem?

7. Is there a relationship between length of exercise program and self-esteem?

8. Is there a relationship between frequency of exercise sessions and self-esteem?

9. Is there a relationship between duration of exercise sessions and self-esteem?

Instruments

Three questionnaires were used to assess demographics, exercise patterns and self-esteem. The questionnaires are found in Appendix A.
Demographic Questionnaire

Participants were asked questions regarding age, gender, ethnicity, education, employment and career satisfaction, smoking status, weight and previous exercise history. Validity of the demographic questionnaire was established by expert examination for face validity.

Exercise Questionnaire

Participants were asked questions regarding their exercise patterns. Length of their current program, frequency and duration of exercise sessions and who they exercise with were assessed. Participants were also asked to select, from a list, the activities that they participate in. Face validity was confirmed by a panel of experts.

Coopersmith Self-Esteem Inventory

The adult version Coopersmith self-esteem inventory was used to measure self-esteem. The Coopersmith self-esteem inventory is a 25-item scale consisting of statements that reflect self-acceptance (Coopersmith, 1981). The participants were asked to select "like me" or "unlike me" for each statement (Coopersmith, 1981). The self-esteem inventory addresses the following sources of self-esteem: general, social-peers, home, and career (Gilberts, 1983). Internal consistency of the self-esteem inventory has been
reported from .87 to .92 with test-retest reliability of .70 (Gilberts, 1983). Construct validity has been confirmed by factor analysis. Coopersmith (1990) reported typical means of 70-80 with a standard deviation of 11-13. Other studies of adult populations have reported means and standard deviations within the ranges reported by Coopersmith (Bonheur & Young, 1991; Muhlenkamp & Sayles, 1986).

Sample

Questionnaires were distributed via staff mailboxes to 94 staff members at a local middle school. Participants met the following criteria:

1. speak, read and write English.
2. males and females.
3. 18 years old and older.
4. not currently being treated for mental illness such as manic-depression or schizophrenia.

Persons with mental illness were excluded from the sample due to the known relationship between mental illness and self-esteem (Martinsen, 1990).

Forty-nine of the 94 (52%) questionnaires were returned to a mailbox assigned to the investigator. More questionnaires may have been returned if follow-up had been done. Limitation of data collection imposed by the administration of the institution prohibited follow-up.
Setting

Data collection occurred at a local middle school. Participants completed the questionnaire at sites within the school campus that were convenient to them. Collection sites allowed for completing written questionnaires.

Protocol for Human Subjects

This study was approved by the College of Nursing Human Subjects Committee. Participant names did not appear on the forms. Identification numbers allowed participants to withdraw from the study at any time if desired. Identification numbers also ensured anonymity. Subjects were informed verbally and by written disclaimer of the purpose, methodology, potential benefits and potential risks prior to data collection. Participation was voluntary and subjects could have withdrawn at any time. A copy of the disclaimer is shown in Appendix B. A copy of the Human Subjects Committee approval letter appears in Appendix C.

Summary

A descriptive design was used to examine the relationship between exercise and self-esteem. Data was collected from a convenience sample of 49 people. Three questionnaires were used to obtain information regarding demographics, exercise and self-esteem. Self-esteem was
measured by the Coopersmith Self-esteem Inventory for adults.
CHAPTER 4
ANALYSIS OF DATA

The results of the data analysis are presented in this chapter. The demographics of the sample are described first. Next, the exercise patterns of the sample are presented. Finally, the data analysis for each of the research questions is presented.

Demographic Characteristics of the Sample

The demographics questionnaire contained questions related to age, ethnic identification, gender, current marital status, weight, smoking status, type of employment, satisfaction with current employment, performance of exercise currently or previously and participation in a childhood physical education program.

The sample ranged from 18 to over 59 years old with 83.7% between 26 and 50 years old. The mean was not calculated because the data were categorical rather than continuous. The sample was primarily caucasian (69.4%), however, there were 12.2% Hispanic, 4.1% Native Americans, 4.1% reporting "other," 2.0% Black and 8.2% that did not answer the question. Subjects were mostly female (61.2%) with 38.8% males. Most of the subjects were married
(65.3%), 16.3% were never married, 16.3% were divorced and 2% reported having a significant other. No one reported being underweight, 53.1% reported being within their ideal weight range and 44.9% reported they were 10% or more overweight. Most participants had never smoked (61.2%). Of those who had smoked, 20% were ex-smokers and 8.2% were trying to quit smoking. Only 10.6% reported themselves as smokers. Subjects typically considered themselves to be professionals (77.6%). Career satisfaction ranged from very unsatisfied (4.1%) to very satisfied (40.8%). Most of the subjects were college graduates (73.4%) with 22.4% having completed some graduate level courses and 38.8% holding a graduate degree. Only 2% had less than a high school education, 12.2% had a high school diploma, 8.2% had completed some college courses and 4.1% had completed a trade school. The majority of subjects exercised currently (69.4%) and 83.7% had participated in a childhood physical education program. Of the 30.6% who did not exercise currently, 93% had previously exercised as adults (see Table 1).

Exercise Characteristics

The exercise questionnaire consisted of five questions that assessed frequency, duration, length and type of exercise performed. Subjects were also asked to identify
<table>
<thead>
<tr>
<th>Table 1. Demographic Characteristics of the Sample (N=49)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td>18-25</td>
</tr>
<tr>
<td>26-34</td>
</tr>
<tr>
<td>35-42</td>
</tr>
<tr>
<td>43-50</td>
</tr>
<tr>
<td>51-58</td>
</tr>
<tr>
<td>59+</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
</tr>
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<tr>
<td>Hispanic</td>
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<tr>
<td>Native American</td>
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<tr>
<td>Black</td>
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<tr>
<td>Other</td>
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<tr>
<td>Missing</td>
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<tr>
<td>Male</td>
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<td>Divorced</td>
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<tr>
<td>Within Ideal</td>
</tr>
<tr>
<td>Overweight</td>
</tr>
<tr>
<td>Missing</td>
</tr>
<tr>
<td>Smoking Status</td>
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<tr>
<td>------------------------</td>
</tr>
<tr>
<td>Never Smoked</td>
</tr>
<tr>
<td>Ex-Smoker</td>
</tr>
<tr>
<td>Smoker</td>
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<tr>
<td>Trying to Quit</td>
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<table>
<thead>
<tr>
<th>Type of Employment</th>
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<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Professional</td>
<td>38</td>
<td>77.6</td>
</tr>
<tr>
<td>Unemployed</td>
<td>3</td>
<td>6.1</td>
</tr>
<tr>
<td>Self-Employed</td>
<td>3</td>
<td>6.1</td>
</tr>
<tr>
<td>Trade/Craftsman</td>
<td>2</td>
<td>4.1</td>
</tr>
<tr>
<td>Laborer</td>
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<td>4.1</td>
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<tr>
<td>Missing</td>
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<td>2.0</td>
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<table>
<thead>
<tr>
<th>Career Satisfaction</th>
<th>N</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Very Satisfied</td>
<td>20</td>
<td>40.8</td>
</tr>
<tr>
<td>Somewhat Satisfied</td>
<td>13</td>
<td>26.5</td>
</tr>
<tr>
<td>Somewhat Unsatisfied</td>
<td>10</td>
<td>20.4</td>
</tr>
<tr>
<td>Very Unsatisfied</td>
<td>2</td>
<td>4.1</td>
</tr>
<tr>
<td>Missing</td>
<td>4</td>
<td>8.2</td>
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<table>
<thead>
<tr>
<th>Education</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Degree</td>
<td>19</td>
<td>38.8</td>
</tr>
<tr>
<td>Graduate College</td>
<td>11</td>
<td>22.4</td>
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<tr>
<td>College Graduate</td>
<td>6</td>
<td>12.2</td>
</tr>
<tr>
<td>Some College</td>
<td>4</td>
<td>8.2</td>
</tr>
<tr>
<td>Trade School</td>
<td>2</td>
<td>4.1</td>
</tr>
<tr>
<td>High School</td>
<td>6</td>
<td>12.2</td>
</tr>
<tr>
<td>Less than High School</td>
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<td>2.0</td>
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who they exercise with. To identify type of exercise performed, subjects were asked to select, from a list, those activities that they participated in. The activities selected were categorized as exercises that promote endurance, strength, or flexibility. Participants who performed activities from more than one category were classified as "combination" exercisers.

Of the 49 subjects, 34 (69.4%) reported that they exercised currently. Those 34 completed the exercise questionnaire. Forty-one percent exercised three to five times per week, 35.3% exercised one to two times per week, 20.6% reported exercising more than five times per week, and only 2.9% performed exercises less than once a week. The mean was not calculated because data were reported categorically. Most of the exercisers reported that exercise sessions lasted 20 to 60 minutes (61.3%); however, 32.3% reported sessions that lasted more than 60 minutes. Only 5.9% exercised less than 20 minutes per session. The majority (73.5%) had been exercising more than six months with only 26.5% reporting that they had been exercising for less than six months. Most of the subjects performed a combination of exercise (70.6%) with 23.5% performing only endurance activities and 5.9% performing only strengthening exercises. No one performed only flexibility activities. All of the exercisers reported that they exercised in a
variety of ways; alone, in a class, and with a spouse (see Table 2).

Self-Esteem Characteristics

The mean self-esteem score of the 49 subjects was 39 with a standard deviation of 9.1. Coopersmith (1990) reports normative data based on a study of 226 college students in Northern California. The norms reported a mean of 71.7 with a standard deviation of 18.8 (Coopersmith, 1990). The norms are consistent with other studies of adult populations (Muhlenkamp & Sayles, 1986; Bonheur & Young, 1991). According to the norms, the 50th percentile is a score of 76 on the self-esteem scale (Coopersmith, 1990). The scores of this sample ranged from 24 to 28 with a mean of 39. These scores are all below the fortieth percentile of the normative data indicating lower levels of self-esteem.

Research Questions

The research questions were answered individually by cross tabulation tables, one way analysis of variance (ANOVA), and Tukey HSD tests. Cross tabulation tables were used to identify relationships among categorical data. Pearson correlation coefficients were calculated. Significance was set at p<.05 (Norusis, 1990).
Table 2. Exercise Characteristics of the Sample.  
(N=34)

<table>
<thead>
<tr>
<th>Frequency of Sessions</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
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<tr>
<td>&gt; 5 times per week</td>
<td>7</td>
<td>20.6</td>
</tr>
<tr>
<td>3-5 times per week</td>
<td>14</td>
<td>41.2</td>
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<tr>
<td>1-2 times per week</td>
<td>12</td>
<td>35.3</td>
</tr>
<tr>
<td>&lt; 1 time per week</td>
<td>1</td>
<td>2.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration of Sessions</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 60 minutes</td>
<td>11</td>
<td>32.3</td>
</tr>
<tr>
<td>20-60 minutes</td>
<td>21</td>
<td>61.8</td>
</tr>
<tr>
<td>&lt; 20 minutes</td>
<td>2</td>
<td>5.9</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Length of Exercise Programs</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 6 months</td>
<td>25</td>
<td>73.5</td>
</tr>
<tr>
<td>0-6 months</td>
<td>9</td>
<td>26.5</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Type of Exercise</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Combination*</td>
<td>24</td>
<td>70.6</td>
</tr>
<tr>
<td>Endurance only</td>
<td>8</td>
<td>23.5</td>
</tr>
<tr>
<td>Strength only</td>
<td>2</td>
<td>5.9</td>
</tr>
<tr>
<td>Flexibility only</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

* Combination refers to participants performing activities from more than one category
Relationships among variables involving continuous data were analyzed by the one way ANOVA and Tukey HSD (Gravetter & Wallnau, 1988). The ANOVA was used to determine if there were differences in self-esteem scores among exercisers and non-exercisers. To answer those questions, the null hypothesis was assumed (Gravetter & Wallnau, 1988). That is, there are no differences in self-esteem scores of exercisers and non-exercisers. A Tukey HSD with a significance level of .05 was calculated to identify if differences existed between each possible combination of variables (Gravetter & Wallnau, 1988). For example, the Tukey HSD was used to examine self-esteem scores of endurance exercisers compared to all other exercisers, strength exercisers compared to all other exercisers, and combination exercisers compared to all other exercisers. If the null hypothesis had been rejected, further analysis would have been conducted to determine where the differences existed. Data analysis for each question is presented.

The first research question was to determine if there was a relationship between exercise and self-esteem. To answer this question, the null hypothesis was assumed. That is, there is no difference in self-esteem scores of exercisers and non-exercisers. A one-way ANOVA was calculated to determine if a difference was present.
There was no difference in self-esteem scores of exercisers and non-exercisers for this sample.

The second research question asked if there was a relationship between age, gender, education, employment, smoking status, previous exercise history and current exercise. The Pearson correlation coefficient was used to determine if relationships existed. Data for each variable are discussed separately. No relationship was found to exist between age and exercise. Most of the subjects were between 18 and 50 years old. No relationship was found between gender and exercise. Sixty-eight percent of the male participants exercised and 70% of the females exercised. There was no relationship found between education and exercise.

There was no relationship found between smoking status and exercise. Of the 49 subjects, only 5 (10.2%) reported themselves as smokers and 4 (8.2%) were trying to quit. No relationship was found between career satisfaction and exercise. Variability among levels of satisfaction was limited so it was difficult to assess the accuracy of this analysis. There were only 10 subjects (22.2%) who were somewhat unsatisfied with work and all of those (100%) reported that they exercised currently. Of the two subjects (4.4%) who reported being very unsatisfied with their career, one exercised currently and one did not exercise.
A relationship between previous exercise and current exercise was not supported. Forty-seven of the 49 subjects had exercised previously. Overall the data analysis did not support a relationship between the selected demographic variables and exercise.

The third research question asked if a relationship between weight, ethnicity and exercise was present. There was no relationship found between weight and exercise. However, 80.8% of the subjects who reported themselves to be within the ideal weight range exercised and only 59% of the subjects who were overweight exercised. None of the subjects reported themselves as underweight. There was no relationship found between ethnicity and exercise. Variability of ethnic identification was limited. Subjects were primarily Caucasian (n=34, 59.4%) with only six Hispanics (12.2%), two Native Americans (4.1%), one Black (2.0%), and two (4.1%) classified themselves as other. Inadequate variability limits the ability to identify relationships concerning ethnic identification.

The fourth research question asked if a relationship between marital status and exercise exists. A relationship between marital status and exercise was not found. Exercisers comprised the majority of subjects in each marital status category.
The fifth research question asked if a relationship exists between previous exercise history and current exercise. Of the fifteen subjects not currently exercising, 13 (86.7%) had exercised as adults. No relationship between physical education as a child and current exercise was found.

The sixth research question asked if a relationship exists between the type of exercise performed and self-esteem. The Tukey HSD was calculated for self-esteem scores of each category of exercisers compared to the self-esteem scores of all other exercisers. That is, self-esteem scores of endurance only exercisers were compared to the scores of all other exercisers, self-esteem scores of strength only exercisers were compared to scores of all other exercisers and self-esteem scores of combination exercisers were compared to all other exercisers. No one reported performing flexibility only exercises so there was no comparison of flexibility to the other forms of exercise. No significant difference among groups was found using the Tukey HSD.

The seventh research question asked if a relationship between length of exercise program and self-esteem exists. This question was not answered because most (n=25, 73.5%) of the exercisers had been exercising for more than six months.
The eighth research question asked if a relationship exists between frequency of exercise sessions and self-esteem. This question was not answered due to limited variability within the sample. There was only one subject (2.9%) who exercised less than once a week and seven subjects (20.6%) who exercised more than five times a week.

The final research question asked if a relationship exists between duration of exercise sessions and self-esteem. This question was not answered due to limited variability within the sample. Only two subjects (5.9%) exercised less than 20 minutes per session. Twenty-one exercisers (61.8%) exercised 20 to 60 minutes per session. The remaining 11 exercisers (32.3%) reported exercising 60 minutes or more per session.

Summary

The results of the data analysis did not support a relationship between exercise and self-esteem. Relationships were not found between demographic variables, weight, career characteristics, previous exercise history and current exercise patterns. Relationships were not found between exercise characteristics and self-esteem. The accuracy of the analysis was limited by the homogeneity of the sample. Three research questions were not answered because of limited variability within the sample.
CHAPTER 5
DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

In this chapter, the findings are discussed in relation to the conceptual framework. Limitations of this study, implications for community health nursing and recommendations for further research are also discussed.

Findings Related to the Conceptual Framework

An adaptation of Pender's Health Promotion Model was used to guide this study. The model was adapted to evaluate the relationship between exercise and self-esteem. Demographic, behavioral and interpersonal characteristics were evaluated for relationships to exercise patterns. The results of the study did not support the adaptation of Pender's Model. Relationships were not established among the variables for the 49 subjects analyzed in this study. The conceptual framework suggested that characteristics such as age, gender, ethnicity, weight and education affect an individual's exercise patterns. The 49 subjects were fairly homogeneous in ethnicity (69.4% Caucasian), marital status (65.3% married), education (73.4% college graduate or higher), smoking status (81.2% non-smokers), job satisfaction (67.3% satisfied), and participation in
exercise (69.4% currently exercising). No significant relationships were found among age, gender, weight, and exercise participation. Previously exercise was found to decline as age increased (Volden, Langemo, Adamson, & Oeschle, 1990). Increased weight had also been reported to decrease likelihood of exercise participation (Summerson, Konen, & Dignan, 1991). Pender (1987) also reported that support from others increased performance of health promoting behaviors. A relationship between social support and exercise was not assessed because of limited variability within the sample.

A relationship between exercise and self-esteem was not supported by data analysis. The self-esteem scores were not significantly different for exercisers and non-exercisers. Questions regarding relationships among types of exercise performed, length of exercise program, frequency of exercise sessions, duration of sessions and self-esteem were not answered by data analysis because of limited variability within the sample. Subjects who exercised performed a combination of exercise types (70.6%), had been exercising for more than six months (73.5%), and exercised 2 to 5 times a week (76.4%) for 20 to 60 minutes or more (94%).

Self-esteem scores of the sample were lower than reported norms. Coopersmith (1990) reports typical means of 70-80 with a standard deviation of 11-13. Other recent
studies support the norms reported by Coopersmith (Muhlenkamp & Sayles, 1986; Bonheur & Young, 1991). The mean self-esteem score of the 49 subjects was 39 with a standard deviation of 9.1. Self-esteem scores ranged from 24 to 68. The Coopersmith Inventory is designed to measure an individual's evaluation of the self and may be affected by sudden or drastic changes in the person's life (Coopersmith, 1990). Changes that may affect self-esteem scores include such things as increased stress at work or home, death of another person, illness or injury (Coopersmith, 1990; Crouch & Straub, 1983). Other factors affecting self-esteem include significance, power, competence and virtue (Coopersmith, 1967). The 49 subjects analyzed in this study were teachers and support personnel from a local middle school. The questionnaires were completed one week after the violent death of a student at another school within the same school district. This occurrence could have affected the self-esteem scores of the subjects. Parent-teacher conferences were held the week prior to completion of the questionnaires. The parent-teacher conferences may have affected self-perception of acceptance by others. Perceived acceptance by others affects an individual's feelings of significance (Coopersmith, 1967). Feelings of power and competence may have been impacted by characteristics of the school. The
school was built for 800 students, yet current enrollment was 1179. The increased enrollment was responsible for larger class sizes of 30 to 34 students. The increased number of students may have had an impact on the staff's feelings of control and ability to achieve goals. If staff goals had been set based upon enrollment of 800 students, achievement could be affected by the increased number of students.

Limitations

The results of this study are limited by sample size, homogeneity of the sample and use of self-report questionnaires. The study was limited to 49 subjects; therefore, results cannot be generalized. Accuracy of the results is also limited by the lack of variability within the sample. Greater variability may have been established if follow-up had been possible. Supplemental observation of the sample would have increased the reliability of the self-esteem scores (Coopersmith, 1990). Supplemental observation would have required identification of behaviors consistent with high and low levels of self-esteem. The sample would have been observed for presence of these behaviors to validate the scores of the Coopersmith Inventory. Although
reliability has been established for the Coopersmith Self-Esteem Inventory, the instrumentation may have been a limitation.

A descriptive study can not evaluate cause and effect. The descriptive design only allowed for examination of relationships. Variables could not be manipulated to identify various interpretations of results (Burns & Grove, 1987). The characteristics of those not returning the questionnaires are not known. Variability may have been improved by a higher return rate.

Implications for Community Health Nursing

A relationship between self-esteem and exercise was not supported by this study. However, the self-esteem scores of the sample were much lower than previously reported norms (Coopersmith, 1990). Therefore, the major implication of this study for community health nursing is to support programs that assess and enhance self-esteem in the community.

Community health nurses need to be knowledgeable in assessing self-esteem and in methods that enhance self-esteem. Coopersmith (1990) identified some techniques to build self-esteem. These techniques include the following:

1. Allow participants to freely select an activity from a group of activities,
2. Allow participants to choose their own rate of progress,
3. Accept the feelings of the participants and support further expression of those feelings,
4. Realize that each participant is unique,
5. Avoid sudden or drastic changes in the program, and
6. Set goals with the participants that are achievable and expect those goals to be achieved.

These techniques can be applied to community health programs, thereby helping enhance the self-esteem of the community. An example for this sample would be to allow teachers to select the subjects that they wish to teach. Teachers would also be allowed to choose from a variety of teaching methods rather than being required to teach the same method throughout the school. The rate of progress would be determined by the teacher and the class rather than the administration. The goals for each teacher and class would be set by the teacher and class rather than by administration. The staff would also be encouraged to express their feelings without fear of consequences. When possible, changes in the programs would be made over the summer rather than during the school year. According to Coopersmith (1990) these methods would enhance the self-esteem.
Recommendations for Further Study

Based on the results of this study, the following recommendations for further research are suggested:

1. Replicate the study using a larger sample size to obtain greater variability of characteristics. The questionnaire should be reassessed prior to replication of the study. Some of the questions such as age, weight, length of exercise sessions, and frequency of sessions may be more accurately analyzed if continuous rather than categorical data were reported. The categories used may have been too general to identify some relationships.

2. Conduct a quasi-experimental study using exercise as the independent variable. Two similar groups of non-exercisers would be used. Both groups would complete the questionnaires initially. An exercise program would be instituted for one group while the other group would serve as the control group. Questionnaires would be completed after three to six months. Data would be analyzed for differences in self-esteem scores of the exercisers and non-exercisers.

3. Further investigation of school personnel to assess self-esteem scores. If other studies were to find similar self-esteem scores in school personnel, further
study would be indicated to identify factors influencing that population.

Summary

The results of this study did not support the adaptation of Pender's Health Promotion Model. However, homogeneity of the sample may have limited the accuracy of the results. The self-esteem scores of the sample were much lower than previously reported norms. Recent events may explain the lower self-esteem scores. The study was limited by homogeneity of the sample and the use of self-report questionnaires. The major implication for community health nursing was to support and develop programs that enhance self-esteem. Recommendations for further study included replication of the study with a larger more representative sample, conducting a quasi-experimental study to determine the effect of exercise on self-esteem, and further investigation of school personnel to examine levels of self-esteem.
APPENDIX A

QUESTIONNAIRES
DEMOGRAPHICS QUESTIONNAIRE

Directions: Please check the most appropriate response for each question.

1. Age
   - 18-25
   - 26-34
   - 35-42
   - 43-50
   - 51-58
   - 59 & over

2. Ethnic Identification
   - Caucasian
   - Native American
   - Hispanic
   - Oriental
   - Black, African
   - Other

3. Gender
   - Male
   - Female

4. Current marital status
   - Never married
   - Married
   - Divorced
   - Widowed
   - Significant other

5. Highest education completed
   - Less than high school
   - High school
   - Some college
   - College graduate
   - Trade school
   - Some graduate school
   - Graduate degree

6. Describe your current weight
   - 10% or more below ideal
   - Within ideal range
   - 10 or more above ideal
7. Describe your smoking status

- Never smoked
- Ex-smoker
- Trying to quit
- Smoker

8. Employment

- Unemployed
- Trade/craftsman
- Laborer
- Professional
- Self-employed

9. Describe your level of satisfaction with your present employment

- Very unsatisfied
- Somewhat unsatisfied
- Somewhat satisfied
- Very satisfied

10. Did you participate in an organized physical education program as a child (PE, baseball, football, etc.)?

- Yes
- No

11. a. Do you exercise currently?

- Yes
- No

b. If no, as an adult have you exercised in the past?

- Yes
- No

IF YOU ANSWERED YES FOR QUESTION 11a, PLEASE ANSWER THE EXERCISE AND COOPERSMITH QUESTIONNAIRES

IF YOU ANSWERED NO FOR QUESTION 11a, PLEASE ANSWER ONLY THE COOPERSMITH QUESTIONNAIRE
EXERCISE QUESTIONNAIRE

Directions: Please check the appropriate response for each question.

1. How often do you exercise?
   - _____ less than 1 time per week
   - _____ 1 - 2 times per week
   - _____ 3 - 5 times per week
   - _____ more than 5 times per week

2. How long have you been consistently performing your current exercise routine?
   - _____ 0 - 6 months
   - _____ more than 6 months

3. How long does each exercise session last?
   - _____ less than 20 minutes
   - _____ 20 - 60 minutes
   - _____ more than 60 minutes

4. Who do you exercise with? (check all that apply)
   - _____ alone
   - _____ spouse
   - _____ significant other
   - _____ friend
   - _____ club/team
   - _____ class
   - _____ parents
   - _____ children
5. Please select the activities that you participate in:

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<th>Hirer</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td>backpack</td>
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<tr>
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<tr>
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<tr>
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<td>bicycle</td>
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<tr>
<td></td>
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<tr>
<td></td>
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<td></td>
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Stanley Coopersmith, Ph.D.  
University of California at Davis

Directions

On the other side of this form, you will find a list of statements about feelings. If a statement describes how you usually feel, put an X in the column "Like Me." If a statement does not describe how you usually feel, put an X in the column "Unlike Me." There are no right or wrong answers. Begin at the top of the page and mark all 25 statements.
Like  Unlike

•  •  1. Things usually don’t bother me.
•  •  2. I find it very hard to talk in front of a group.
•  •  3. There are lots of things about myself I’d change if I could.
•  •  4. I can make up my mind without too much trouble.
•  •  5. I’m a lot of fun to be with.
•  •  6. I get upset easily at home.
•  •  7. It takes me a long time to get used to anything new.
•  •  8. I’m popular with persons my own age.
•  •  9. My family usually considers my feelings.
•  • 10. I give in very easily.
•  • 11. My family expects too much of me.
•  • 12. It’s pretty tough to be me.
•  • 13. Things are all mixed up in my life.
•  • 14. People usually follow my ideas.
•  • 15. I have a low opinion of myself.
•  • 16. There are many times when I would like to leave home.
•  • 17. I often feel upset with my work.
•  • 18. I’m not as nice looking as most people.
•  • 19. If I have something to say, I usually say it.
•  • 20. My family understands me.
•  • 21. Most people are better liked than I am.
•  • 22. I usually feel as if my family is pushing me.
•  • 23. I often get discouraged with what I am doing.
•  • 24. I often wish I were someone else.
•  • 25. I can’t be depended on.
APPENDIX B

DISCLAIMER
PARTICIPANT DISCLAIMER

EXERCISE AND WELL-BEING

You are being asked to voluntarily participate in a study to examine relationships among type, frequency, and duration of exercise and feeling of well-being. By completing the questionnaires, you are giving your consent to participate in the study. You may choose not to answer any or all of the questions and may withdraw from the study without negative consequences. Your identity will not be revealed and confidentiality will be maintained in the report of this study. The benefits of participation include a greater awareness of your exercise habits and well-being. There are no known risks of participation in this study.

If you have any questions, please contact:

Debra Rouse, RN, BSN
Graduate Student
University of Arizona
College of Nursing
290-0481
APPENDIX C

HUMAN SUBJECTS COMMITTEE

APPROVAL LETTER
MEMORANDUM

TO: Debra Rouse, RN, BSN
FROM: Leanna Crosby, D.N.Sc., R.N. Director of Intramural Research
DATE: November 16, 1992
SUBJECT: Human Subjects Review: "Self-Esteem and Exercise"

Your research project has been reviewed and approved by William Denny, M.D., Chairman of the University of Arizona Human Subjects Committee, and deemed to be exempt from review by their full committee. You will be receiving a confirmation letter from Dr. Denny. In addition, your project has been reviewed and approved by the College of Nursing Human Subjects Review Committee.

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

LC/ga
November 13, 1992

Debra Rouse, R.N., BSN
College of Nursing
Community Health Division
Arizona Health Sciences Center

RE: SELF-ESTEEM AND EXERCISE

Dear Ms. Rouse:

We received documents concerning your above cited project. Regulations published by the U.S. Department of Health and Human Services [45 CFR Part 46.101(b)(2)] exempt this type of research from review by our Committee.

Thank you for informing us of your work. If you have any questions concerning the above, please contact this office.

Sincerely yours,

William F. Denny, M.D.
Chairman,
Human Subjects Committee

WFD:sj

cc: Departmental/College Review Committee
REFERENCES
REFERENCES


