CORRELATION OF SELF-ESTEEM AND PHYSICAL
FITNESS FOR WHITE, MIDDLE-CLASS, SUBURBAN
TEN, ELEVEN, AND TWELVE YEAR OLD BOYS

A thesis submitted in partial satisfaction of the
requirements for the degree of Master of Arts in
Educational Psychology

by

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I</strong></td>
<td><strong>THE PROBLEM.</strong></td>
</tr>
<tr>
<td></td>
<td>Statement of the Problem</td>
</tr>
<tr>
<td></td>
<td>Rationale</td>
</tr>
<tr>
<td></td>
<td>Statement of the Hypothesis</td>
</tr>
<tr>
<td></td>
<td>Definitions</td>
</tr>
<tr>
<td></td>
<td>Limitations of the Study</td>
</tr>
<tr>
<td></td>
<td>Organization of the Remainder of the Project</td>
</tr>
<tr>
<td><strong>II</strong></td>
<td><strong>REVIEW OF THE LITERATURE</strong></td>
</tr>
<tr>
<td></td>
<td>Introduction to Research Relating to Self-esteem</td>
</tr>
<tr>
<td></td>
<td>Main Areas of Research Relating to Self-esteem</td>
</tr>
<tr>
<td></td>
<td>Relevant Correlates of Physical Fitness</td>
</tr>
<tr>
<td></td>
<td>Research Relating to Physical Fitness and Self-esteem</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
</tr>
<tr>
<td><strong>III</strong></td>
<td><strong>METHODOLOGY</strong></td>
</tr>
<tr>
<td></td>
<td>Preparation for Testing</td>
</tr>
<tr>
<td></td>
<td>Samples</td>
</tr>
<tr>
<td></td>
<td>Instrumentation</td>
</tr>
<tr>
<td></td>
<td>Test Administration</td>
</tr>
<tr>
<td></td>
<td>Treatment of the Data</td>
</tr>
<tr>
<td></td>
<td>Assumptions</td>
</tr>
<tr>
<td></td>
<td>Limitations</td>
</tr>
<tr>
<td>Chapter</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>IV</td>
<td>38</td>
</tr>
<tr>
<td>FINDINGS, SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS</td>
<td>38</td>
</tr>
<tr>
<td>Findings</td>
<td>38</td>
</tr>
<tr>
<td>Summary</td>
<td>43</td>
</tr>
<tr>
<td>Conclusions</td>
<td>46</td>
</tr>
<tr>
<td>Recommendations</td>
<td>47</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>48</td>
</tr>
<tr>
<td>APPENDICES</td>
<td>53</td>
</tr>
<tr>
<td>APPENDIX A</td>
<td>54</td>
</tr>
<tr>
<td>APPENDIX B</td>
<td>55</td>
</tr>
<tr>
<td>APPENDIX C</td>
<td>56</td>
</tr>
</tbody>
</table>
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CSEI and AAHPER Mean Scores and Variances for Fall and Summer Groups, t-test of Difference Between Means, and F-ratio for Differences Between Variances</td>
<td>38</td>
</tr>
<tr>
<td>2</td>
<td>Correlation Coefficients Between CSEI and AAHPER Scores for Fall and Summer Groups, t-test for Correlation Greater than Zero, and Test for Significance of Difference Between Correlation Coefficients</td>
<td>39</td>
</tr>
</tbody>
</table>
ABSTRACT

CORRELATION OF SELF-ESTEEM AND PHYSICAL FITNESS FOR WHITE, MIDDLE-CLASS, SUBURBAN TEN, ELEVEN, AND TWELVE YEAR OLD BOYS

by

Myron Vaughan

Master of Arts in Educational Psychology

January, 1974

The purpose of this study was to investigate the correlation between physical fitness and self-esteem in ten, eleven, and twelve year old boys. A review of the literature revealed a relationship between self-esteem and several variables. A relationship was also found between physical fitness and other variables. Few studies were found that investigated the relationship between self-esteem and physical fitness; however, a moderately low relationship was revealed in one study.

Fifty-nine ten, eleven, and twelve year old boys were given the Coopersmith Self-esteem Inventory and the AAHPER Youth Fitness Test. Those boys who took the tests while participating in summer school sports elective classes showed a statistically significant positive correlation between scores on the two tests. The boys
who took the tests while participating in regular classrooms in the fall showed a nonsignificant negative correlation between scores on the two tests.

A general conclusion based on all findings from this study was that there is no relationship between self-esteem and physical fitness. Data findings did suggest the need for further study of the problem.
CHAPTER I
THE PROBLEM

School programs frequently have the elevation of children's self-esteem as a goal based upon the assumption that higher self-esteem facilitates learning. This is a particularly necessary goal in the elementary grades since the child has recently emerged from the family circle and must relate to teachers and friends who may express opinions which are less biased than those of his parents. In the school he compares himself to other children in many areas and must deal with failure as well as success.

The assumption that higher self-esteem facilitates learning is supported by the findings of several experimenters (e.g., Coopersmith, 1959; Piers and Harris, 1964). Bruck and Bodwin (1962) have demonstrated a relationship between low self-esteem and underachievement.

Educators are becoming more aware of the relationship between self-esteem and learning and they are seeking information about correlates of self-esteem.

Statement of the Problem

During the past two decades studies of self-esteem have become more numerous and due to the efforts of investigators such as Ruth Wylie (1961) meaningful data
are being formulated. Correlates of self-esteem have been revealed and they can be of value to educators who are interested in providing a successful environment for learning and personal growth. If physical fitness were one of the correlates of self-esteem, a knowledge of the relationship between the two would be of value to educators.

Comparatively little research has been conducted which relates physical fitness and personality characteristics (Tillman, 1965). Physical fitness is hypothesized by many to play an important part in the development of self-esteem; yet very little empirical research has been carried out to confirm the hypothesis.

Many pre-adolescent boys devote a great deal of time to activities which require physical involvement. Coopersmith (1967) provides evidence that pre-adolescent boys with low self-esteem initiated locomotor activities at a later age and that body size in males is a source of self-esteem.

There has been little research to confirm a relationship between physical fitness and self-esteem and the research that has been conducted has not strongly supported a relationship. The purpose of this study was to investigate whether there is a positive correlation between physical fitness and self-esteem.
Rationale

A significant positive relationship has been found between self-esteem and physique, the age that locomotor activities were initiated, special physical training, and learning to swim (Collingwood and Willet, 1971; Coopersmith, 1967; Koocher, 1971). Physical fitness has been found to have a significant positive relationship to several personality variables (Neal, Sonstroem and Metz, 1969; Tillman, 1965; Ward, 1962). It therefore seems worthwhile to investigate the relationship between physical fitness and self-esteem.

Two empirical studies have investigated the relationship between self-esteem and physical fitness. One of these (Neale, Sonstroem, and Metz, 1962) did not report significant findings and the other (Johnson, 1970) reported a moderately low relationship. With only these two studies sound conclusions can not be made about a correlation between self-esteem and physical fitness. The present study is further justified by differing from the Neale, et al. and Johnson studies in sample characteristics and measure of self-esteem employed.

Statement of the Hypothesis

The present study was designed to test the following hypothesis:

Self-esteem has a positive correlation with physical
fitness in ten, eleven and twelve year old boys.

**Definitions**

The definitions of the following terms were considered appropriate for this study:

**Boys** - Normal 10, 11 and 12 year old boys in the Simi Valley Unified School District who did not have any physical handicaps or limitations.

**Physical fitness** - A general level of fitness which is evaluated on the basis of arm and shoulder girdle strength, efficiency of abdominal and hip flexor muscles, speed, ability to change direction, explosive muscle power of leg extensors, skill and coordination in throwing and cardiovascular efficiency.

In this study physical fitness is operationally defined as the total score on the AAHPER Youth Fitness Test (AAHPER Youth Fitness Test Manual, 1965).

**Self-concept** - Self concept is an abstract psychological construct by which a person thinks of himself as a unique human being. This construct is personal and therefore no one else can fully experience or understand a person's self-concept.

The self-concept is learned from experiences (Green, 1962) including a person's perception of the way others see him (Fader, 1962). It serves to regulate behavior (Rogers, 1951) and has self-esteem as a major component.
By self-esteem we refer to the evaluation which the individual makes and customarily maintains with regard to himself. It expresses an attitude of approval or disapproval, and indicates the extent to which the individual believes himself to be capable, significant, successful and worthy. In short, self-esteem is a personal judgment of worthiness that is expressed in the attitudes the individual holds toward himself. It is a subjective experience which the individual conveys to others by verbal reports and other overt expressive behavior (pp. 4-5).

In this study self-esteem is operationally defined as the total score on the Coopersmith Self-esteem Inventory (Coopersmith, 1967).

Limitations of the Study

This study was conducted in five elementary schools in Simi Valley which draw their population from middle class neighborhoods with low representations of racial minorities. Therefore, this study is only generalizable to schools with similar populations.

The boys in the summer school test groups had selected sports as an elective class, thereby expressing the possibility of a special interest in physical activities. Therefore, the results from the summer school test groups would only be generalizable to similarly elective sports classes.

All of the test subjects were boys (see definition of terms); therefore, the results from this study would
only be generalizable to boys who are similar to those in this study.

Organization of the Remainder of the Project

The remainder of the project is organized as follows:

Chapter II is a review of the related literature. Chapter III describes the samples, measuring instruments, research procedure, research design and treatment of the data. Chapter IV is a discussion of the results related to the stated hypothesis, a summary of the study, conclusions, and recommendations.
CHAPTER II
REVIEW OF THE LITERATURE

The focus of this study is the correlation between physical fitness and self-esteem. Research studies and experiments that relate to this problem can be classified under four main headings: (1) introduction to research relating to self-esteem; (2) main areas of research relating to self-esteem; (3) relevant correlates of physical fitness; and (4) research relating physical fitness and self-esteem.

Introduction to Research Relating to Self-esteem

Self-esteem is an essentially private experience and self evaluation which has recently begun to receive attention in empirical studies after a period of being considered in theories of the self. During the past twenty years the number of studies relating to self-esteem has increased and a body of information exists which allows some conclusions.

Unfortunately, the term self-esteem has not been clearly defined in many studies. Much of the information relating to self-esteem has been obtained in studies of self-concept and the two terms are frequently used synonymously.
The most popular measuring procedures in studies of self-esteem have been self-evaluation, behavioral or projective techniques. Whether the three procedures yield primarily equivalent aspects of the personality or three distinct aspects is open to question at this time. It is important to consider the method by which data is gathered in each study to decide upon comparability among studies.

Some early empirical evidence on the self comes from Jersild's *In Search of Self* (1952). By analyzing compositions written by children and young people in elementary and secondary schools and colleges on the topics "What I Like About Myself" and "What I Dislike About Myself," Jersild concluded that their responses appeared to fall into the following categories:

1. Physical characteristics, including general appearance, size and weight; build and shape, and details of head and limbs.
2. Clothing, grooming and makeup.
3. Health and physical condition.
4. Material possessions and ownership.
5. Animals and pets and attitude towards them.
6. Home and family relationships.
7. Sports, games and hobbies - participation in, and ability at.
8. School and school work - ability at, and attitude towards them.
10. Special talents and abilities or interests.

11. Personality traits, including temperament, disposition, character traits, emotional tendencies, etc.

12. Social attitudes and relationships.

13. Religious ideas, interests, beliefs and practices.


It was found that the younger children in Jersild's study described themselves more in terms of external criteria such as physical characteristics and grooming, while the older ones described themselves in terms of inner resources and the quality of relationships with other people.

Ruth Wylie (1961) wrote a critical survey (The Self-Concept) of self-concept research which had been done up to that time. She summarized the conclusions that had been reached and went on to attack the poor testing methods that had been used.

Six years after Ruth Wylie's work, Stanley Coopersmith published his book The Antecedents of Self-esteem. He had completed a thorough study of the self-esteem of pre-adolescent boys from which he concluded that, "The most general statement about the antecedents of self-esteem can be given in terms of three conditions: total or nearly total acceptance of the children by their parents, clearly defined and enforced limits, and the
respect and latitude for individual action that exist
within the defined limits (p. 236)." Coopersmith pre-
"sent ed several other more specific findings which will be
reviewed in this chapter.

Main Areas of Research Relating to Self-esteem

Studies of research relating to self-esteem can be
classified under the following subheadings: (1) stability
of self-esteem; (2) sex - differences in self-esteem;
(3) race differences in self-esteem; (4) body charac-
teristics and self-esteem; (5) intelligence and self-
esteem; (6) parent - child relations and self-esteem;
(7) socioeconomic status and self-esteem; and (8) aca-
demic achievement and self-esteem.

Stability of Self-esteem

There is general agreement in the literature that
self-concept stabilizes prior to adolescence (Wylie,1961).

Engel (1959) studied the test-retest reliability of
self-concept Q-sorts taken by 172 high school students.
One group was tested in the eighth and tenth grades,
while the second group was tested in the tenth and
twelfth grades. For 23 of the students the average
self-self correlation was .68 over a ten day period and
.53 over a two year period. Engel also found the self
concept was less stable over time for those whose initial
self-concept was more negative.
In Coopersmith's study (1967) of 10 to 12 year old boys, he established test-retest reliability scores for his Self-esteem Inventory. The test-retest reliability for the inventory after a five-week interval with a sample of 30 fifth grade children was .88, and the reliability after a three-year interval with a different sample of 56 children was .70. This led Coopersmith to state that, "This would suggest that at some time preceding middle childhood the individual arrives at a general appraisal of his worth, which remains relatively stable and enduring over a period of several years. This appraisal can presumably be affected by specific incidents and environmental changes, but apparently it reverts to its customary level when conditions resume their normal typical course (p. 5)."

Sex-differences in Self-esteem

The literature offers no definite answers as to whether there are sex differences in self-esteem (Loney, 1972). It is generally accepted that boys receive more and stronger negative reinforcement from teachers. However, much of what the school considers the impulsivity and disobedience of boys is fostered and rewarded by parents and peers, who label the same behavior as masculine independence. This may mean that the self-esteem of a young boy may be relatively unaffected by the dis-
approval of his teachers.

Race differences in Self-esteem

There have been some efforts to determine whether self-esteem has any relationship to race; however, the results have varied and it would not be possible to draw any definite conclusions about a relationship at this time.

In an effort to examine the factors of self-concept, which emerge in relation to race and other variables, Yeatts (1967) administered Gordon's How I See Myself Scale to 8,979 students in grades three through twelve. After reviewing the results, she rejected the hypothesis that the self-concept would vary according to race.

Douglas (1969) used the Coopersmith Self-esteem Inventory to test 155 Black and 105 Caucasian junior high students in Detroit. The results of this study showed no differences between the self-esteem, the social self-esteem or the home self-esteem of the racial groups. He did find that the Black youths scored significantly higher on the school self-esteem. Zerkel and Moses (1967) also used the Coopersmith Self-esteem Inventory to investigate race and self-esteem. They administered the test to 120 Black, Puerto Rican and Caucasian students. The one finding of differences was that the Puerto Rican youth had a significantly lower self-esteem score.
Body Characteristics and Self-esteem

Self-concept theorists agree on the general idea that body characteristics which are lowly valued by persons may be expected to undermine their self-regard, while highly valued body characteristics should enhance self-regard (Wylie, 1961). It appears that satisfaction with body characteristics may be of particular concern to adolescents due to the fact that they must adjust to a changing and maturing body; this is supported to some degree by the findings of Clifford (1971).

Secord and Jourard (1953) developed "self-cathexis" and "body-cathexis" scales which they used to conduct a study of college students. They found that the males' self-cathexis and body-cathexis responses had an inter-correlation of .58. Clifford (1971) modified the scales and administered them to adolescents (ages 11-19) in order to determine whether males and females tended to react to body and self-satisfaction items in a similar fashion. There was a significant difference in their responses although levels of body satisfaction expressed were high for both sexes.

Felker and Kay (1971) investigated the relationship between self-concept and body type in a study of 153 seventh and eighth grade boys. The boys were divided into three body-type groups with the use of the Ponderal Index (height in inches divided by the cube root of
weight in pounds). All of the boys were then given the Piers-Harris 80 item self-report instrument to measure self-concept. It was found that for the seventh grade sample only the main effect of body type on self-concept scores was significant. This finding was supported by the results of a similar study of sixth grade boys (Felker, 1968).

It is interesting to note that in Coopersmith's study (1967) of fifth and sixth grade boys physical attractiveness was unrelated to self-esteem. However, it was found that there was a positive relationship between the physique and self-esteem of the boys.

**Intelligence and Self-esteem**

In order to determine whether differences in intelligence among groups of children would be accompanied by differences in the reality of the self-concept Ringness (1961) used the Wechsler Intelligence Scale for Children to divide 120 children into three intelligence groups. Ringness found that bright children tend to rate themselves most highly, retarded and average children following in that order. Mentally retarded children were found to have the least reliable self-concept ratings with a tendency to overestimate success.

In a study using 60 sixth grade students, William and Cole (1968) found a significant correlation of .31
between the self-concept and mental ability. They used the **Tennessee Self-Concept Scale** and the **California Short-Form Test of Mental Maturity** to obtain the results. Coopersmith's study (1967) yielded comparable results when he obtained a correlation of .28 between the **Coopersmith Self-Esteem Inventory** and the **Wechsler Intelligence Scale for Children** scores from boys 10-12 years old.

**Parent-Child Relations and Self-esteem**

Parent-child relations are said to be an important aspect in the development of self-esteem for the following reasons:

1. The self-concept is a learned constellation of perceptions, cognitions, and values.
2. An important part of this learning comes from observing the reactions one gets from other persons.
3. The parents are the persons who are present earliest and most consistently. (Wylie, 1961, p. 121)

Due to the problems inherent in designing and executing an investigation of parent-child relationships, there have been few studies of that relationship. Most of those which have been completed involve questionnaires given to college students which require them to recall events in their childhood.
Coopersmith's study (1967) provides some conclusions about parent-child relations in homes of boys with high self-esteem. It was revealed that the boys with high self-esteem were more frequently reared under conditions of acceptance, clear definition of rules, and respect. It was also shown that the parents of boys with high self-esteem expected their children to strive and comply with the standards they established. The home treatment of the high self-esteem boys tended to be much more vigorous, active and contentious.

**Socio-economic Status and Self-esteem**

A review of the research on socio-economic status and self-esteem reveals varying results. Coopersmith (1967) and Trowbridge (1972) reported well designed studies.

Using the father's income and occupation as an index of socio-economic status, Coopersmith (1967) investigated the relationship between self-esteem and socio-economic status in pre-adolescent middle class boys. He found a weak and nonsignificant relationship between their self-esteem and socio-economic status.

Trowbridge (1972) conducted a study to determine whether measurable differences in self-concept existed between children of different socio-economic status. She used schools identified as Title I under the Elemen-
Coopersmith Self-esteem Inventory was administered to the students in her study. The results indicated lower socio-economic children had consistently higher mean self-esteem scores than middle socio-economic children.

The results of these two well-designed studies appear to be valid. However, they must be considered with the realization that other studies exist which either fail to confirm or conflict with the results of these studies. Further investigation is warranted.

**Academic Achievement and Self-esteem**

There has been a considerable amount of research relating academic achievement and self-esteem in children. With some exceptions (Green, 1970; Butcher, 1967), the evidence seems to point toward a significant correlation between self-esteem and academic achievement.

Even at the kindergarten level self-esteem may be related to future academic achievement. Measures of self-concept and ratings of self-concept taken in the first semester of kindergarten have been predictive of later achievement in reading (Wattenberg, 1964).
For 80 sixth grade pupils, William and Cole (1968) obtained a correlation coefficient of .31 between scores on the Tennessee Self-concept Scale and the California Achievement Test Battery. In the same study, a correlation coefficient of .33 was found between self-concept and mathematical achievement.

Piers and Harris (1964) developed a self-concept instrument from Jersild's (1952) collection of children's statements about what they liked and disliked about themselves. This instrument was given to third, sixth and tenth grade classes in a large school system. The scores were compared to achievement test scores which produced a correlation coefficient of .32 between academic achievement and self-concept. This compares to a correlation coefficient of .36 between academic achievement and self-esteem reported by Coopersmith (1959) in a study of fifth and sixth grade students.

A review of several self-concept and one self-esteem study indicates that there is a relationship between self-esteem and academic achievement.

Relevant Correlates of Physical Fitness

This section reviews empirical literature on the correlates of physical fitness which are relevant to this study. The correlates include personality traits,
attitudes, intellectual ability, and academic achievement. Literature relating physical fitness and self-esteem is reviewed in the next section.

Physical Fitness and Personality

Significant social personality differences were found between high school boys who scored high and low on a physical fitness test (Tillman, 1965). A group in the upper 15 per cent on the physical fitness test exhibited more dominance, signs of extroversion, socially oriented traits and a greater interest in people and group interaction when compared to a group that finished in the lower 15 per cent. The results of studies conducted by Ward (1962) and Wilson (1969) indicate that the conclusion that physical fitness is related to social personality differences is true for junior high as well as senior high school boys.

Neale, Sonstroem and Metz (1969) investigated the relationship between measured physical fitness and attitude toward physical fitness for boys 12 to 17 years old. It was found that the high fitness group had higher estimates of their physical abilities than did the low fitness group. It was also shown that the high fitness group tended to express greater attraction to physical activities than did the low fitness group.

In a study involving a comparison of ninth grade
athletes and nonparticipants in athletics, Schendel (1965) found significant differences in the psychological characteristics of the two groups. The ninth grade athletes tended to have more qualities which led to status. Also they complained less, had more social maturity, and were more conventional in their responses to social situations. Similar results were reported for a twelfth grade group.

A rather comprehensive study of the relationship between psychological, sociological, and physiological factors and the physical fitness of junior high boys was conducted by Ward (1962). A fit and an unfit group were made up from the upper and lower extreme results of the AAHPER Youth Fitness Test which was given to the boys. It was found that the unfit group was significantly more overweight and more frequently absent from school. The results indicated that the fit group participated more in school sports, attended more athletic events, drove automobiles more often, dated more often, had higher membership in out of school organizations, and held more leadership positions. In this study it was also revealed that the fit group had a mean I.Q. of 103.54, which was significantly higher than the unfit group whose mean I.Q. was 98.70.
Physical Fitness and Intellectual Ability

The findings on I.Q. differences in Ward's study is partially supported by Schendel (1965). His study revealed that ninth grade athletes performed significantly better on the Intellectual Efficiency section of the California Psychological Inventory than did the ninth grade nonparticipants. In contrast to findings of both these researchers, Slusher (1964) found that high school athletes scored significantly lower than nonathletes on the Lorge Thorndike Intelligence Test.

Physical Fitness and Academic Achievement

It is frequently stated that a relationship exists between physical fitness and academic achievement. The literature does not clearly support this conclusion. Rather it appears that studies, such as those that follow, present conflicting findings.

In a study of the relationship between physical fitness and academic achievement (Weber, 1953) it was found that college freshmen exhibited a significant relationship between physical fitness scores and grade point average for a year. Another study revealed that high physical fitness groups of 9, 13 and 15 year old boys had higher means on both academic achievement tests and grade point averages (Clarke and Jarman, 1961).
Ward (1962) found that high fitness and low fitness groups of junior high boys did not differ significantly on the basis of grades received in solid subjects or physical education. When sixth grade students' performances on the *Iowa Test of Basic Skills* were compared to their performances on the *AAHPER Youth Fitness Test* it was revealed that there was no significant correlation between the two (Green, 1970).

Research Relating to Physical Fitness and Self-esteem

The search for a relationship between physical fitness and self-esteem has received little attention over the years even though it is generally felt that such a relationship does exist. Research that has been carried out up to this time has not clearly supported a relationship or the lack of a relationship between physical fitness and self-esteem.

Studies of physical training programs have demonstrated an effective change in self-esteem as a result of participation in the programs. In one program (Collingwood and Willet, 1971), the self-esteem of five obese boys between the ages of 13 and 16 was improved through participation in a three week program. Another study (Collingwood, 1972) of 50 male rehabilitation clients between the ages of 18 and 26 revealed an im-
provement in self-attitude after a four week program was completed.

In a study of middle aged men, it was found that self-assurance was the best predictor of membership in a high fitness group. It also appeared that the men, who were participating in a physical fitness program, were more self-confident at the end of the program (Ismail and Trachtman, 1973).

A relationship between active participation in athletics and a sense of personal worth was revealed in a study by Schendel (1965). Scores on the California Psychological Inventory indicated ninth and twelfth grade athletes had a greater sense of personal worth than nonathletes from the same grade level.

Koocher (1971) investigated the possibility that increased competence in swimming would enhance self-esteem. Using pre and posttest measures of the discrepancy between the ideal-self and self-concept of 65 seven to fifteen year old boys, it was found that success in learning to swim reduced the discrepancy significantly. These findings were further enhanced when it was revealed that the boys who did not learn to swim and those who could already swim did not experience significant changes in the discrepancy in either direction.

Using the twelve physical factor items from Gordon's How I See Myself Scale, Yeatts and Gordon (1968) measured
the self-esteem of seventh grade students who had a physical education specialist in their elementary years and compared it to their results on the AAHPER Youth Fitness Test. A significant correlation was found between the self-esteem and physical fitness of the boys in the group. Another group of boys who did not have a physical education specialist in their elementary years was also involved in the study; their results did not reveal a significant correlation.

Green (1970) conducted an investigation of the self-esteem, physical fitness and academic achievement of sixth grade students. In this study, self-esteem and physical fitness were never directly correlated. However, Green did conclude that self-esteem did not appear to be significantly influenced by high and low performances on the physical fitness and academic achievement tests.

In a study previously cited (Neale, Sonstroem, and Metz, 1969), 165 high school boys were given the AAHPER Youth Fitness Test and a ten item self-esteem scale developed and used extensively by Rosenberg (1965). The chi square procedure was used to compare distributions of self-esteem scores for the high- and low-fit groups. The obtained value was not significant and it was concluded that there was no evidence to indicate that high- and low-fit boys differed in self-esteem.
Johnson (1970) intercorrelated the 14 subtests on the **Tennessee Self-Concept Scale** with the ten test events on the **Fleishman Basic Fitness Tests**. A moderately low relationship was found between the self-concept and physical fitness of white as well as black junior high students.

**Summary**

A review of the literature revealed that self-esteem was significantly related to intelligence, academic achievement, physique and parent-child relations (Cooper-smith, 1967; William and Cole, 1968). Research suggested a relationship between socioeconomic status and self-esteem; however, more study is needed in this area.

The literature supports the general belief that self-esteem stabilizes at some time prior to adolescence (Coopersmith, 1967).

Physical fitness of junior and senior high school boys was found to be significantly related to the ability to relate socially, interest in physical fitness, and the ability to estimate physical abilities (Tillman, 1965; Ward, 1962; Wilson, 1969). At the junior high level only, physical fitness was found to be significantly related to sports interest, participation in special activities, leadership and intelligence (Ward, 1962).

Ninth and twelfth grade athletes were shown to
possess more qualities which lead to status and more social maturity. It was also reported that they tended to complain less and were more conventional in their responses to social situations (Schendel, 1965).

Self-esteem was positively related to physical training in special programs and to the experience of learning to swim (Collingwood and Willet, 1971; Koocher, 1971). Also persons participating in athletics tended to have a greater sense of personal worth (Schendel, 1965).

A study was conducted in which it was found that boys who had a physical education specialist in elementary school had a significant correlation between their physical fitness and self-esteem in the seventh grade. Another group of boys who did not have a physical education specialist in elementary school did not reveal a significant correlation (Yeatts and Gordon, 1968).

Two empirical studies investigated the relationship between self-esteem and physical fitness. One did not report significant findings and the other reported a moderately low relationship (Johnson, 1970; Neale, Sonstroem, and Metz, 1969).
CHAPTER III
METHODOLOGY

The purposes of this chapter were (a) to describe the method of preparation for testing, (b) to describe the method for obtaining a sample, (c) to describe the instrumentation and test administration, and (d) to describe the treatment of the data and scoring procedures.

Preparation for Testing

Permission to conduct the study was obtained from the Elementary Education Assistant to the Superintendent and the principals and teachers of each Simi Valley school that was involved. To accomplish this, it was necessary to: (1) contact, in person, each of the people indicated above; (2) discuss the original proposal; and (3) make tentative plans for the collection of data.

The preceding steps were taken and the original proposal, along with the tentative plans, was accepted by all persons contacted; however, the Assistant to the Superintendent requested that written permission be obtained from all parents whose children were to be involved in the testing programs.
Samples

To select individuals it was necessary to ask the teachers which boys were ten, eleven, or twelve years old and who did not have any physical limitations or handicaps. A letter from the school principal (See Appendix A) was prepared and presented to each of these boys. They were asked to obtain a signature from their parents in order to participate in the testing program. The awards associated with the Presidential Physical Fitness Program were shown to the boys as an incentive for their participation.

Fifty-nine boys received parental permission to participate in the program. Unfortunately, the investigator did not keep exact records of the parental permission slip return rate. However, the return rate was estimated to be approximately seventy-five percent. Thirty-five of the boys were involved in sports elective classes during the 1973 summer school session (summer group) and the remaining twenty-four boys were members of regular classrooms during the 1973 fall semester (fall group).

The total group was drawn from five elementary schools in the Simi Valley Unified School District. In order to provide a relatively consistent middle class
sample, schools identified as Title I under the Elementary and Secondary Education Act were not used. Information from the school administration indicated that the sample schools had students who lived in suburban middle class areas with single family dwellings. The populations were relatively stable and most persons living in the areas were regularly employed. The sample was predominantly white with a low representation of racial minorities.

**Instrumentation**

**Coopersmith Self-Esteem Inventory**

The instrument chosen to measure self-esteem was Stanley Coopersmith's Self-Esteem Inventory (CSEI), (Coopersmith, 1967). It has been widely used (Butcher, 1967; Coopersmith, 1959; Green, 1970; Kerensky, 1966; Trowbridge, 1972; Zirkel and Moses, 1971) and reliability and normative data are available.

Coopersmith (1967) used fifth and sixth grade classes to establish reliability levels for the CSEI. The test-retest reliability was .88 for a sample of 30 children after a five week interval and .70 with a different sample of 56 children after a three year interval. The differences between the mean scores for males and females was not significant. A degree of concurrent validity for
the CSEI was established by the findings of Simon (1972). The CSEI is a self-report inventory composed of 58 items. It has been used on a group basis with subjects ranging in age from nine to adult level; however, it was designed specifically for children from nine to about fifteen years of age. A child taking the test is asked to check a column to indicate whether a certain attitude or characteristic is "like me" or "unlike me." The maximum possible score is 100 and the national average score for males age nine to fifteen is 72.2. There are no exact criteria for high, medium and low self-esteem; however, Coopersmith has employed the upper quartile as being indicative of high self-esteem; the lower quartile as being indicative of low self-esteem and the remaining range as being indicative of medium self-esteem.

The 58 items in the CSEI are divided into the following subscales: (1) general self; (2) social self-peers; (3) home - parents; (4) school academic; and (5) lie scale. Eight items make up the lie scale and they are not counted in the scoring of the test. Each of the remaining 50 items is given a weight of two which makes the maximum possible score of 100.

The lie scale items on the CSEI are absolute statements such as: "I always tell the truth," "I'm never shy," and "I never worry about anything." They were
designed to reveal defensive reactions which could affect the validity of the test results. Trowbridge (1972) eliminated subjects from her study who had more than three "like me" responses on the lie scale items. The need for the lie scale items on the CSEI was supported by the findings of Mikesell, Calhoun, and Lottman (1970).

AAHPER Youth Fitness Test

The AAHPER Youth Fitness Test was selected as the instrument to be used for measuring physical fitness. It is the first test ever developed by the physical education profession for which national norms were determined and it has been widely used (Green, 1970; Neale, Sonstroem, and Metz, 1969; Tillman, 1965; Ward, 1962; Yeatts and Gordon, 1968).

The seven test events which make up the AAHPER Youth Fitness Test are clearly described and planned so that they can be administered both practically and consistently (AAHPER, 1965). They are: (1) pull-ups; (2) sit-ups; (3) shuttle-run; (4) the standing broad jump; (5) the 50-yard dash; (6) the softball throw; and (7) the 600-yard run-walk. New national norms were established for these test events based on a national sampling carried out during the years 1963-64, and 1964-65. These norms were used to develop the scoring tables which are contained in the AAHPER Youth Fitness Test Manual.
Using these scoring tables an examiner can convert a raw score on any test event into a percentile score which is based upon the national norms.

The AAHPER Youth Fitness Test was evaluated at the high school level when Klesius (1968) administered all of the test events to 150 male high school students. This study demonstrated that the number of trials and measures recommended by the Youth Fitness Test Manual to represent performance seemed justified. One possible exception was the sit-up test which had a reliability coefficient which was lower than generally accepted standards of reliability. However, this was probably a result of muscular discomfort since it was given three days in a row. It was also recommended that the directions for the shuttle run be carefully observed since the second trial was usually the best of the two.

Stein (1964) conducted a reliability study of the AAHPER Youth Fitness Test using a sample of 50 tenth and eleventh grade boys. The test-retest reliability for five of the seven test events (pull-ups, standing broad jump, sit-ups, 50-yard dash, softball throw) over a five day time period was between .90 and .98. The other two events (shuttle-run, 600-yard run-walk) yielded reliability coefficients of .74 and .83 over the same time period.
Four of the seven AAHPER Youth Fitness Test events require more than one trial. Marmis, Montoye, Cunningham, and Kozar (1966) investigated the test-retest reliability of these multi-trial items in order to obtain evidence concerning the appropriateness of the prescribed number of trials. The results of this study of nine to eighteen year old children indicated that two instead of three trials in both the standing broad jump and softball throw would be sufficient. It was also indicated that at least three trials are necessary in the shuttle run and that two trials as prescribed are necessary in the 50-yard dash.

The results from the AAHPER Youth Fitness Test were related to dynamic strength when Berger and Mabee (1967) found a correlation coefficient of .564 between the AAHPER Youth Fitness Test and a weight lifting test of total dynamic strength.

**Test Administration**

All tests were administered by the writer and other upper elementary grade teachers. They were administered during regular class and recess periods during the summer and fall of 1973.

The CSEI was administered before any AAHPER events so that CSEI scores would not be affected by participa-
tion in the program. CSEI directions were read orally from the inventory page and all questions were answered. Honesty was encouraged by explaining that the results would be kept confidential, that there were no "right" or "wrong" responses, and that the inventory would not be used as part of the school evaluation procedure. Whenever the teacher indicated that one or more boys would have difficulty reading the questions, the inventory was read aloud by the examiner. Questions were rephrased whenever a student indicated difficulty in making a response.

The AAHPER Youth Fitness Test events were administered by the teacher in accordance with instructions outlined in the manual (AAHPER, 1965). The number of trials was modified to fit the recommendations of Marmis, Montoye, Cunningham, and Kozar (1966). Testing was not conducted when the outside temperature exceeded ninety degrees and events were spaced so as to minimize the effects of fatigue. Makeup tests were administered on following days so that all members of the sample were able to complete the testing.

**Treatment of the Data**

The self-esteem inventories were hand scored by the writer. Each response was scored in accordance with the
Coopersmith answer key. Two points were given for each response which indicated a higher level of self-esteem.

Lie scale items on the self-esteem inventory were scored separately. Following the practice of Trowbridge (1972) subjects who had more than three "like me" responses on the lie scale items were eliminated from the study. Seven out of the 59 subjects were eliminated on this basis.

Raw scores from the AAHPER Youth Fitness Test events were converted to percentiles using the conversion tables in the test manual (AAHPER, 1965). It was necessary to interpolate many of the percentages since the conversion tables were not set up for all possible scores.

The percentage scores for each test event were then converted to $z$ and then $T$ scores. The seven $T$ scores were then summed for each participant to provide a total physical fitness score.

The data from the summer and fall groups was first considered separately. Means and standard deviations for the CSEI and total physical fitness scores were computed for each group.

A Pearson product-moment correlation coefficient for the CSEI and physical fitness scores was also computed for each group.

The difference between the means of the two groups
was tested by an independent \( t \)-test. The difference between variances for the two groups was tested by an \( F \)-ratio. The difference between correlation coefficients for the two groups was tested using a Fisher's \( z \) transformation (Guilford, 1965, p. 189).

If all three statistical tests indicated nonsignificance, the summer and fall groups were judged homogeneous and pooling of data was justified. Otherwise, the hypothesis would be tested separately for the two groups. Calculations were done on a hand calculator and computed twice for accuracy.

**Assumptions**

The following assumptions were made for this investigation:

1. All measures employed were sufficiently reliable and valid to furnish evidence for the research hypothesis set forth.

2. The students in the five schools chosen for this study constituted a sufficiently broad and representative sample to permit generalizability of the results (i.e., the realization of some degree of external validity).

3. The participants in the research -- students, teachers, and administrators -- understood the require-
ments of the tasks assigned and cooperated to a degree sufficient to permit the realization of both reliable and valid data.

4. Major sources of invalidity in the design of this correlational study were minimized to a degree that the inferences for the groups studied were essentially correct (i.e., the realization of some degree of internal validity).

Limitations

This study was limited by the use of parental permission slips. The permission slips made it a voluntary program since a boy or his parents had the option of not returning the permission slips with a positive response.

The study was also limited by the fact that the summer group was made up of boys from elective sports classes. Their participation in these classes could be considered to be a sign of special interest in physical activities.
CHAPTER IV

FINDINGS, SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this chapter was to present the findings of the study and then to present a summary with conclusions and recommendations.

Findings

Prior to pooling data for the summer and fall groups, differences between means, variances, and correlation coefficients were tested. Data for the tests are presented in Tables 1 and 2. A significance level of .05 was used in all statistical tests.

TABLE 1

CSEI AND AAHPER MEAN SCORES AND VARIANCES FOR FALL AND SUMMER GROUPS, $t$-TEST OF DIFFERENCE BETWEEN MEANS, AND $F$-RATIO FOR DIFFERENCES BETWEEN VARIANCES

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<th>N</th>
<th>$\bar{x}$</th>
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<td>67.0</td>
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<td>279</td>
<td>1.299</td>
<td>p&gt;.05</td>
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<td>23</td>
<td>66.3</td>
<td></td>
<td></td>
<td>215</td>
<td></td>
<td></td>
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<td>AAHPER</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>29</td>
<td>351.6</td>
<td>0.82</td>
<td>p&gt;.05</td>
<td>1444</td>
<td>2.05</td>
<td>.05&gt;p&gt;.01</td>
</tr>
<tr>
<td>Fall</td>
<td>23</td>
<td>359.0</td>
<td></td>
<td></td>
<td>704</td>
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</table>
The t-test for differences between means was non-significant when means were compared for the summer and fall groups on both the Coopersmith Self-esteem Inventory (CSEI) and the AAHPER Youth Fitness Test (AAHPER). Since variances were different on the AAHPER, the t-test comparing AAHPER test means was computed following Edwards' (1968, p. 104) instructions for this situation.

Differences in variances were not significant for the CSEI scores (Table 1). However, there was a significant difference between variances for AAHPER scores with the summer group scores having greater variance.

The correlation coefficient between CSEI and AAHPER scores for the summer group was .40 and for the fall group -.24 (Table 2). These coefficients were significantly different (Guilford, 1965, p. 190).

TABLE 2
CORRELATION COEFFICIENTS BETWEEN CSEI AND AAHPER SCORES FOR FALL AND SUMMER GROUPS, t-test FOR CORRELATION GREATER THAN ZERO, AND TEST FOR SIGNIFICANCE OF DIFFERENCE BETWEEN CORRELATION COEFFICIENTS

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<td>.40</td>
<td>2.268</td>
<td>.05&gt;p&gt;.01</td>
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<td>-.24</td>
<td>-1.13</td>
<td>p&gt;.05</td>
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</table>

2.25 .05>p>.01
Since the correlation coefficients for summer and fall groups were different, the groups were considered coming from different populations on the variables measured. Therefore, scores from the summer and fall groups were not pooled to test the research hypothesis. Instead the hypothesis was tested twice, considering the group scores separately.

The research hypothesis stated a positive relationship between self-esteem and physical fitness. For this study, self-esteem is defined as CSEI scores and physical fitness is defined as AAHPER scores.

The correlation coefficient between CSEI and AAHPER scores for the summer group was .40 (Table 2). With a sample size of 29 a correlation coefficient of .40 is significant (Guilford, 1965, p. 163). The null hypothesis of the population correlation being zero or less was rejected. The data from the summer group supported the research hypothesis.

For the fall group, the correlation coefficient between CSEI and AAHPER scores was -.24. With a sample size of 23 this correlation coefficient was nonsignificant. The null hypothesis of the population correlation being zero or less was supported. Data from the fall group do not support the research hypothesis.

Although the data from the Summer group indicate a statistically significant relationship between CSEI and
AAHPER scores, four circumstances prevent any generalization to a relationship between self-esteem and physical fitness in the population of ten, eleven, and twelve year old boys. One, the correlation coefficient between CSEI and AAHPER scores for the fall group was not significant. This evidence against the generalization was as strong as the evidence for the generalization. Two, the correlation for the fall group was in the negative direction, opposite to the direction for the summer group. Three, if the scores for the fall and summer group had been pooled and the hypothesis tested once, the correlation would have been nearer zero and surely nonsignificant. And, four, the sample size for the summer group was small for generalization from correlation coefficients.

Inconsistencies in the data warrant discussion. The correlation coefficient between CSEI and AAHPER scores was significant for the summer group and nonsignificant for the fall group. The correlation coefficient for the summer group was positive and significantly greater than zero. For the fall group the correlation coefficient was not greater than zero. The statistical evidence suggests differences in the summer and fall groups.

As described in Chapter 3, the summer and fall groups were selected under different circumstances. The summer group consisted of boys who had elected to take a
sports class during summer school. In a sense they were three time volunteers. They volunteered to go to summer school, volunteered to take a sports class, and volunteered for this study. Boys in the fall group were attending school during the required school year, in assigned classes, and only volunteered for this study. The summer group was more self-selecting.

Although the summer group was more self-selecting, the data did not indicate an explanatory variable with elitist or restrictive characteristics. Means were not higher for the summer group on measures of self-esteem or physical fitness. A comparison of variances showed no differences in the CSEI scores and greater variance in AAHPER scores for the summer group. The summer group physical fitness scores were more variable than fall group scores, but on the average not higher.

If the correlation coefficients for the summer and fall groups do come from populations differing in the variables measured, possibly the differences are explainable by underlying differences in variables such as interest or value. For example, perhaps boys interested enough in sports to volunteer for a class also highly value physical fitness and positively judge their own esteem in terms of their physical fitness. Data from this study do not justify such a wide inferential leap. The data do justify exploration of such variables if
findings by others are similar to findings of this study.

The greater variability in AAHPER scores for the summer group increased the possibility of the summer group having a higher correlation coefficient between CSEI and AAHPER scores. The findings of this study indicate that others should exercise caution to select a representative and homogeneous sample. Being unable to pool data in this study required working with sample sizes smaller than preferred. When working with a variable as complex as self-esteem and a less than ideally accurate inventory measure, large sizes are necessary for confidence that data features are the effect of variables of interest and not sampling error.

A general conclusion based on all findings from this study was that there is no relationship between self-esteem and physical fitness; however, inconsistencies in the findings justify further study.

Summary

Problem

There has been little empirical research to confirm a relationship between physical fitness and self-esteem. The research that has been conducted has not strongly supported a relationship.

This study measured the correlation between physical fitness and self-esteem in fifty-two ten, eleven and
Review of Literature

A review of the literature confirmed the belief that self-esteem stabilizes at some time prior to adolescence and revealed it to be significantly related to intelligence, academic achievement, physique, parent-child relations, physical training in special programs, and the experience of learning to swim.

Physical fitness was found to be related to social skills, intelligence, interest in physical fitness and sports, ability to estimate physical abilities, participation in special activities and leadership. Athletes were shown to possess qualities associated with social ability and a greater sense of personal worth. A moderately low relationship was found between self-esteem and physical fitness.

Methodology

School district and parental permission was obtained for fifty-nine ten, eleven, and twelve year old boys to participate in the study. Each of these boys was given the CSEI and AAHPER tests.

After seven boys' scores were eliminated because of defensive responses on the self-esteem inventory, the remaining fifty-two boys were considered in two groups. The first group was made up of twenty-nine boys who
participated in the testing while enrolled in summer school sports elective classes and the second group was made up of twenty-three boys who participated in the testing while enrolled in regular elementary classrooms in the fall.

A total physical fitness $T$ score and a self-esteem score was computed for each boy. Means and standard deviations for the CSEI and total physical fitness scores were computed for each group. A correlation coefficient for the CSEI and the total physical fitness scores was determined for each group. $F$ tests, $t$ tests, and $z$ ratios were computed to test the differences between the two groups.

Results

Differences in variances between the summer and fall groups were significant for the AAHPER scores, but not for the CSEI scores. The correlation coefficient for the summer group was significant and positive; however, the correlation coefficient for the fall group was negative and nonsignificant. Since the correlation coefficients for the summer and fall groups were different, the scores from the two groups were considered separately to test the hypothesis.

The research hypothesis that self-esteem has a positive correlation with physical fitness in ten,
eleven, and twelve year old boys was supported by the results from the summer group, but not by the results from the fall group.

Due to the differences in findings for the two groups and the small size of the sample, with the positive results, it was concluded that the results do not indicate a relationship between self-esteem and physical fitness. Inconsistencies in the data and the special nature of the summer group do justify further study.

**Conclusions**

Within the framework of the hypothesis, the following conclusions were formulated:

1. For the summer group, the research hypothesis that self-esteem has a positive correlation with physical fitness in ten, eleven, and twelve year old boys was statistically supported.

2. For the fall group, the research hypothesis that self-esteem has a positive correlation with physical fitness in ten, eleven, and twelve year old boys was not statistically supported.

3. Mixed results led to the general conclusion that the findings of this study do not support
the existence of a positive relationship between self-esteem and physical fitness in ten, eleven, and twelve year old boys.

Recommendations

1. It is recommended that a similar study be done using a larger and more representative sample and a behavioral as well as a self-report measure of self-esteem.

2. It is recommended that studies be conducted to explore a relationship between physical fitness and self-esteem being dependent on a third variable such as interest or values.
REFERENCES


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APPENDICES
APPENDIX A

LETTER TO PARENTS REQUESTING PERMISSION FOR THEIR CHILD TO PARTICIPATE IN THE STUDY

Dear Parents,

Mr. Myron Vaughan, a Simi Valley teacher, is currently doing a research study for a master's degree at California State University at Northridge. In order to complete a part of the research, he is asking several boys to participate in two tests.

The first test will be a nationally accepted measure of self-esteem, the Coopersmith Self-Esteem Inventory. It should take approximately twenty minutes to complete and all individual information will be kept confidential.

The second test will be the seven events in the Presidential Physical Fitness Program. Any boys who qualify in all seven events in this program will receive the Presidential Physical Fitness patch and award certificate. All of the boys will receive a certificate stating which events they qualified in.

In order for your son to participate in this testing, he will need your permission. This study has been approved by the district and it is Mr. Vaughan's intention to make the testing an enjoyable learning experience for the boys who participate.

Your cooperation in helping Mr. Vaughan obtain information for his study would be greatly appreciated. Please return the attached permission slip indicating whether you do or do not want your son to participate in the tests.

Thank you,

[Permission Slip]

(Your son's name), has/does not have my (circle one)
permission to participate in the physical fitness testing and take the self-esteem inventory.

Parent's signature
APPENDIX B

AGE, AAHPER EVENT T SCORES, COOPERSMITH SELF-ESTEEM INVENTORY SCORES, AND TOTAL PHYSICAL FITNESS SCORES FOR SUMMER GROUP (N = 29)

<table>
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<tr>
<th>Age</th>
<th>Full Ups</th>
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<th>Standing</th>
<th>50 Yard Dash</th>
<th>Softball Throw</th>
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### APPENDIX C

**AGE, AAHPER EVENT T SCORES, COOPERSMITH SELF-ESTEEM INVENTORY SCORES, AND TOTAL PHYSICAL FITNESS SCORES FOR FALL GROUP (N = 23)**

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