1986

The Relationship of Physical Ability to Self-Esteem in Mainland and Island Puerto Rican High School Students

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THE RELATIONSHIP OF PHYSICAL ABILITY TO SELF-ESTEEM
IN MAINLAND AND ISLAND PUERTO RICAN
HIGH SCHOOL STUDENTS

by

ELAINE TORRES

A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE
IN
PHYSICAL EDUCATION

UNIVERSITY OF RHODE ISLAND

1986

ABSTRACT

The purpose of this study was to examine the relationships among physical fitness, self-perception of physical ability and global self-esteem in mainland and island Puerto Rican high school students. Permission to conduct this study was obtained from the Institutional Review Board of the University of Rhode Island.

Subjects were 132 high school students of Puerto Rican ancestry. Forty were from Central High School, Providence, R.I., and 92 high school students from Puerto Rico; 30 from Seso High School, Mayaguez and 62 from Boneville High School, Cupey Alto. Subjects were administered three paper and pencil tests: the Rosenberg Self-Esteem Scale, the Physical Estimation and Attraction Scale, and a study-developed self-report of physical activity participation. The AAPERD Youth Fitness Test was administered as a measure of physical fitness.

Hypotheses of this study:

1. The relationship between estimation of one's physical ability and global self-esteem is significantly larger in mainland as compared to island high school students.

2. The relationship between estimation of one's physical ability and actual physical fitness is significantly larger in mainland as compared to island high school students.

Additional analysis were conducted to test the general validity of the Psychological Model for Physical Activity Participation.

Hypothesis 1 was not supported. The Z values for the coefficients obtained between estimation and self-esteem for mainland and island boys, and for mainland and island girls failed to achieve significant differences at the 0.05 level. Hypothesis 2 was also not supported. The Z values for the coefficients obtained between estimation and the physical fitness tests for mainland and island boys, and for mainland and island girls failed to achieve significant differences at the 0.05 level for 11 of 12 coefficients obtained. It was concluded that the relationship between physical fitness, estimation and global self-esteem is not necessarily larger in mainland as compared to island students.

The results supported the Psychological Model for Physical Activity. It was concluded that the model is applicable to Puerto Rican high school students.

ACKNOWLEDGEMENTS

The author would like to thank God, for his strenght during the data collection and writing this thesis. Thanks are given to Dr. Robert Sonstroem for his help and patience in preparing this thesis and to the thesis committee Dr. Richard Polidoro and Dr. Jerome Schaffran.

In special way the author would like to thank to her family and friends specially her brother, Jerry and her sister, Nidia for their help and encouragement while she was working in this paper.

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Chapter 1

INTRODUCTION

Participation in physical activity and sports is becoming increasingly important to people in the United States. According to Coakley (1978), the school, local recreational facilities, and the community each day are increasingly promoting physical activity and sports.

In the American society sports have become an integrated part of the individual. This phenomenon has opened doors for different studies outside of Physical Education. Even psychologists and sociologists are studying the influence of physical activity and sports in the life of human beings (Massengale, 1979).

Some of the factors that have been studied include how children are influenced by this phenomenon and how more children can be influenced to participate in physical programs of physical activity.

The attitude that an individual has toward physical activity can be an influential factor toward participation in physical education programs (Baumgartner & Jackson, 1982). Different tests have been developed in an attempt to measure attitudes

toward physical activity (e.g. Kenyon,1968; Simon and Smoll, 1974; Sonstroem 1974).

On the other hand, contextual factors such as racial, cultural, economic and academic differences have been found that affect the conduct of a physical education program (Griffin,1985). Different studies have been performed which show how sports or physical activity have influenced the American society, but few studies have been performed with different ethnic groups in the United States or other countries.

Sonstroem (1978) developed a psychological model with the purpose of explaining why the people participate in physical activity. This model maintains that estimation and attraction toward physical activity are directly related to physical fitness and self-esteem. Different studies with American populations have supported this model (Sonstroem, 1978) but studies have not been performed on other kinds of populations.

Statement of the Problem

The purpose of this study was to examine the relationships among physical fitness, self-perceptions of physical ability, and global self-esteem in mainland and island Puerto Rican secondary students.

Forty high school students enrolled at Central High School, Providence, R.I. of Puerto Rican descent, constituted the mainland sample. Thirty high school students from Seso High School, Mayaguez, Puerto Rico and 62 high school students from Bonneville School, Cupey Alto, Puerto Rico constituted the island sample. Subjects were administered three paper and pencil tests: the Rosenberg Self-Esteem Scale (Robinson and Shaver, 1973), the Physical Estimation and Attraction Scales (PEAS) (Sonstroem, 1974) and a study-developed self-report of physical activity participation. The AAHPERD Youth Fitness Test was administered as a measure of physical fitness.

The following hypotheses were investigated:

1. The relationship between estimation of one's physical ability and global self-esteem is significantly larger in mainland as compared to island high school students.
2. The relationship between estimation of one's physical ability and actual physical fitness is significantly larger in mainland as compared to island high school students.

Additional analysis were conducted to test the general validity of the Psychological Model for

Physical Activity Participation and to determine what relationships existed between the variables of the background questionnaire and the three tests administered to the subjects (Rosenberg Self-Esteem Scale, PEAS, Self Report of Physical activity Participation and Physical Fitness Test).

Significance of the Study

Little previous research has examined the psychological and motivational determinants of athletic behavior in Puerto Rican island youth. The present study attempted to fill this void by examining the validity of Sonstroem's(1974) Psychological Model for Physical Activity Participation for island high school students.

This model hypothesizes that for people to participate in physical activity, they must be interested in the activity and believe themselves capable of achieving a measure of success at the activity. Sonstroem (1974) developed the Physical Estimation and Attraction Scale(PEAS) based upon this model. The PEAS is divided into two scales: Estimation, which measures the self-concept that people have toward their capabilities in physical activity, and Attraction, which measures the interest

of the person toward the physical activity.

The model postulates estimation as a mediating variable between physical fitness and global self-esteem. Operationally, this implies that the latter two variables are unrelated of themselves although estimation is significantly related to self-esteem. While estimation and attraction are significantly related, it is attraction which bears the largest relationship to physical activity participation.

If the model is valid for Puerto Rican island youth, it is probable that the size of certain model relationships would be modified. This is reflected in the hypotheses. A rationale for these hypotheses would support the principle that those types of individual competencies which are socially endorsed within a society provide the building block for favorable self-esteem.

The island of Puerto Rico does not have good facilities for Physical Education or for athletic participation. According to Sambolin (1979) even the better schools of the country do not provide adequate fields for sport activities. Physical Education classes are not included in the curriculum of the elementary school, and they are required for only one

semester in High School. News items regarding high school sports are not carried by the island newspapers. Therefore, it would seem that athletic skill and/or physical fitness are of lesser societal importance on the island as compared to on the mainland.

Limitations of the Study

English education in Puerto Rico is only offered in a few private schools. For this reason, schools selected for the study in Puerto Rico were private schools. Mainland subjects were all from public schools. Due to this situation, the socioeconomic status of the two subsamples was extremely different.

Some of the students did not complete the tests and some of them displayed problems in understanding the paper and pencil tests.

Definition of terms

Attitude- a learned predisposition to respond to objects or institutions in a positive or negative way (Coon, 1980). A feeling about a particular object, such as a physical object, a certain type of person, or a social institution (Baumgartner & Jackson, 1981).

Self-Esteem- a quiet confidence that comes from regarding oneself as a worthwhile person (Coon, 1981). The totality of an individual's thoughts and feeling having reference to himself as an object (Rosenberg, 1979).

Physical Activity- activities where observable human movement occurs, in a wide variety of settings with the purpose of increasing or mantaining fitness, or for the purpose of acquiring other goals, such as money or prestige (Marten, 1975).

Physical Fitness- an adequate amount of muscular strength and endurance to meet the needs of different kind of activities, it is a compound of coordination, agility, power, balance, reaction time and speed (Siedentop,1972).

Chapter 2

REVIEW OF LITERATURE

The review of literature is divided into four sections: Attitudes, Self- Esteem, Psychological Model for Physical Activity Participation, and Sociopsychological Characteristics of Puerto Rican Youth.

Attitudes

Sociopsychological research workers have been very interested in the function of physical activity in the society. One of the more promising units of analysis for understanding the sociopsychological aspects of physical activity is that of attitude.

In the search for an explanation of different phenomena in human beings, attitudes are one of the more heavily studied aspects of social functioning. According to Coon (1980) attitude is a heavily studied aspect because it can summarize past experiences, and predict or direct future actions. Also, the effects of attitudes are intimately woven into the way a person views the world and acts toward it.

Triandis (1971) defines attitude as an idea charged with emotion which predisposes a class of

social situations. On the other hand, Coon (1980) defines attitude as a learned predisposition to respond to people, objects or institutions in a positive or negative way. Different definitions have been presented for attitudes. However two factors can be found in common: predisposition and action. No matter how attitude is defined, it is some kind of predisposition that leads us to action.

According to Triandis (1971) attitude can be divided into three components: 1) a cognitive component that is conceptualized as a person's belief, ideas or factual knowledge of some object or person; 2) an affective component, that is the emotion which charges the ideas; and 3) a behavioral component, that is a predisposition to action. Therefore, attitudes are inferred from what a person says about an object, from the way he feels about it, and from the way he says he will behave towards it.

Different methods have been developed to measure attitudes in physical activity. The methods utilized by physical education have been very similar to the methods utilized in social psychology. One of the best known and frequently used attitude scales is the Wear Attitude Inventory (Marten, 1976). The Wear Attitude Inventory was constructed by Carlos Wear in

1951. This instrument was constructed for the evaluation of the attitudes of college students toward physical activity as an activity course.

Another attitude scale that has been used frequently to measure attitude toward physical activity is the Attitude Toward Physical Activity Scale (ATPA) (Kenyon, 1969). Kenyon (1969) based this scale on a multidimensional model for characterizing physical activity. He developed two forms of inventories (male and female), each of which contains six dimensions which measure attitudes toward physical activity. These six dimensions present participation in physical activity as: a social experience, for health and fitness, for the pursuit of vertigo, as an aesthetic experience, catharsis and as an ascetic experience. Using this inventory Kenyon (1969) found that attitudes toward physical activity are different between males and females.

Simon and Smoll (1974), used the Attitude Toward Physical Activity Scale to develop an instrument for assessing children's attitudes toward physical activity -- the Children's Attitude Toward Physical Activity Inventory (CATPA). It was demonstrated with a sample of 407 children that the CATPA is an appropriate instrument for use with fourth to sixth

grade children.

The ATPA has been used with different kinds of populations and conditions. Using the ATPA, Straub and Felock (1974), compared delinquent and nondelinquent junior high school girls' attitudes toward physical activity. Differences in attitudes toward physical activity between groups were found only in the subdomain of physical activity as a social experience. Tolson and Chevrette (1974) studied how attitudes change as a function of a daily program of individualized exercise in college freshmen. Significant differences were obtained for four of the six subdomains present in the ATPA; physical activity as an ascetic experience, catharsis, pursuit of vertigo, and health and fitness.

Self-Esteem

Self-concept is defined as the totality of the individual's thoughts and feeling having reference to himself as an object (Rosenberg, 1979). It is not a single concept, but instead is a system of conceptions about oneself. In part, it is an attitude about oneself. According to Martens (1976) similar to other attitudes, self-concept has a cognitive, affective, and behavioral component. The cognitive component

includes the categories that a person uses to describe him/herself. The affective component is usually called self-esteem and refers to how the individual evaluates him/herself. The behavioral component is the tendency to act toward oneself in various ways.

Many theorists consider high self-esteem essential for emotional health (Coon, 1980). Individuals with low self-esteem have a low estimation of their values as people. Martens (1976) states that negative feeling toward the self will predispose one negatively towards others.

Three major components are presented in self-concept: social self-concept, emotional self-concept and physical self-concept (Sonstroem, 1984). Social self-concept is the position and role that the person assumes in different social groups. Personal disposition, people are going to perceive themselves according to how others perceive their traits, abilities, preferences and response tendencies. Physical self-concept is the evaluative image that an individual holds about his or her height, weight, body build, attractiveness, strength and so on.

According to Sonstroem (1984) the influence of social identities is very notable in how the person

perceives his/her dispositions and his/her physical characteristics. There is a tendency to evaluate ourselves based on a comparison with others. Constant societal feedback is a component that influences our identity, our aspirations, and causes us to adopt certain behaviors.

Different kinds of psychometric instruments have been developed to assess self-esteem. Coopersmith (1967) developed an inventory that measures attitudes toward the self in social, academic, and personal contexts, the Coopersmith Self-Esteem Inventory (SEI). This scale presents self-attitudes in four areas: social self-peers, home-parents, school-academic and general self.

Fitts (1972) developed the Tennessee Self-Concept Scale (TSCS). This test measures an individual's self-concept in terms of identity, feeling and behavior. It is used for a wide range of clinical and educational applications.

One of the issues that has been greatly argued is whether self-esteem should be characterized as a global self-evaluation or if it is more fruitfully viewed as an aggregate of specific self-evaluative judgements across a variety of dimensions or domains (Harter, 1985).

According to Sonstroem (1984) after an early emphasis on treating self-concept as a global construct, theories today tend to emphasize multiple conceptions of self. The equivocal results of much early research led certain theorists to question the existence of a single global self-esteem. Many scholars after wrestling with this issue, have concluded that we need to capture both, global self-esteem and specific self-esteem (Harter,1985). Rosenberg (1972) considers that we retain the notion of global self-esteem while at the same time focusing on the constituent parts of this whole, since the two are not identical. Both should be studied as separate and distinguishable entities.

Rosenberg's primary focus has been on the assessment of one's global sense of self rather than the contruction of a model that deals with both global self-worth and the specific evaluative components of the self.

"His 10 item scale taps the degree to which one is generally satisfied with one's life, feels one has a number of good qualities, has a positive attitude toward oneself, feels useless, desires more self-respect, or thinks one is a failure"(Harter,1985,p.67).

Different models have been developed to explain and measure self-esteem. Within many of these models,

competence represents an important self-evaluative judgement. According to Harter (1985), the relationship between competence and aspiration is a critical determinant of how we evaluate the self. In different tests, competence has been included as a component. For example, in the Coopersmith Self-Esteem (Coopersmith,1967) competence was initially designed as one of the major components of self-esteem, and around one-fifth of the items on this scale pertain to scholastic competence.

Exercise and, as a consequence of exercise, physical fitness have been considered to be related to self-esteem (Folkins and Sime,1981; Sonstroem,1984). In the last few years, the psychological benefits of physical fitness training have been greatly propagandized. Folkins and Sime (1981) reviewed some of these theories and studies. One of the problems that they found was that research in this area has been inhibited by the lack of conceptual links between body and mind. Somatopsychic has been the only term that has provided this conceptual link. According to Folkins and Sime (1981) this term serves as a framework for causation which can generate hypotheses regarding the effects of exercise.

Speculations about the possible psychological

benefits of physical fitness have tended to emphasize either a physiological or a psychological point of view (Folkin and Sime, 1981). In recent years, researchers have promoted more specific hypothesis that imply a direct causation for psychological benefits of fitness training. For example, improvements in cardiovascular functioning following training, have been associated with an increase in "sense of well-being" and a more effective management of emotional stress. Some theorists hypothesize that physical fitness improvements give people a sense of mastery, a sense of having control over bodily functions, which is associated with the experience of well-being. To date no empirical efforts have tested this hypothesis. Folkins and Sime (1981) argue that research in this area is desperately in need of an integrated theoretical model that can pull together the various claims of cause and effect.

Self-Esteem is one of the variables that has been often associated with exercise (Folkins and Sime, 1981; Sonstroem, 1984). Sonstroem (1984) reviewed 16 selected studies which have tested the hypothesis of increased self-esteem via exercise. The experimental designs in these studies were preexperimental, cuasi-experimental or exerimental. The

median program duration was approximately 10 weeks of training activities. Sonstroem concluded, that even though results strongly tended to support a facilitative effect of exercise on self-esteem, the reviewed studies were incapable of determining why these self-esteem occurred. It was concluded that exercise programs are associated with increases in self-esteem, but this conclusion referred to exercise programs

rather than to fitness increases.

Psychological Model for Physical Activity

Sonstroem (1974) developed a model of attitude toward physical activity designed to explain motivation toward physical activity. This model hypothesizes that for the people to participate in physical activity, they must be interested in the activity and believe themselves capable of achieving a measure of success at the activity. Sonstroem (1974) developed the Physical Estimation and Attraction Scales (PEAS) based on this model. The PEAS is divided into two scales: estimation, which measures the self-concept that people have toward their capabilities in physical activity, and attraction, which measures the interest of the people toward

physical activity.

Studies with the PEAS have been conducted with boys in grades seven through 12. Internal consistency reliability estimates of 0.87 and 0.89 and stability reliability estimates of 0.92 and 0.94 have been reported for the estimation and attraction scales, respectively (Sonstroem, 1974, 1976). Both estimation and attraction were found to be related to height, weight, athletic experience, and various motor performance tests (Sonstroem, 1974).

Sonstroem and Kampper (1980), with the purpose of predicting male recruitment and adherence in a middle school athletic program, utilized the PEAS, and the Locus of Control Scale. Both tests were administered to seventh and eighth grade males. It was found that PEAS can significantly predict initial athletic participation but not continued adherence to the program.

Morgan (Fox, Corbin and Couldry, 1985) modified the PEAS for females changing the gender in the wording of certain items. Fox, Corbin, and Coultry (1985), used this test with college women to show that the model presented by Sonstroem works similarly for both sexes, although some differences exist.

It has been found that the perception of

required abilities is a determinant of performance (O'Reilly, 1973). Based on this statement, the relationship between the PEAS and physical fitness has been also studied. Studies have demonstrated relationships between the estimation scale of the PEAS and Physical Fitness. Neale, Sonstroem and Metz (1969) studied this possible relationship in a group of 165 adolescent boys, utilizing the AAHPERD Youth Fitness Test as the measure of fitness. Neale, et al. (1969) found significant differences between fitness groups on the Estimation and Attraction scale of the inventory.

Sonstroem (1974) later, improved the instrument (PEAS) by the analysis of an enlarged item pool. Also, Sonstroem examined the relationship of estimation and attraction with physical fitness, height, and athletic experience. The subjects were 710 boys, grade nine to twelve, enrolled in physical education classes at three Rhode Island high schools. It was found that estimation of one's physical ability yielded a positive and significant relationship with physical fitness, with height, and with athletic experience.

In response to the concern over the validity of responses to self-report statements, Sonstroem (1976) studied the extent to which response set and response

style contribute to self-perceptions of physical and athletic ability as obtained from the 33-item Estimation scale of the PEAS. Response set occurs when the subject answers in a certain way, unconsciously or consciously, with the purpose of producing a certain picture of himself. Response style occurs when the subject answers some kind or category of responses, independent of item content. Sonstroem also studied the relationship between estimation, physical fitness and emotional adjustment. The subjects were 109 high school boys and 112 junior high school boys. Four tests were utilized: the PEAS, the Tennessee Self-concept Scale (TSCS), Marlowe-Crowne Social Desirability Scale, and the AAHPERD Youth Fitness. Results demonstrated that estimation again was significantly related to physical fitness. It was concluded that estimation scores are influenced to a small degree by defensive responses of subjects. Also, it was concluded that positive perceptions of physical ability are significantly related to emotional adjustment scores and that those significant relationship are not dependent on any response distortion attending the assessment procedure.

On the other hand, Fox, Corbin and Couldry (1985)

used the female version of PEAS developed by Morgan in 1977, to see if the Psychological Model for Physical Activity Participation (Sonstroem, 1978) could be an explanation for college-age female involvement. They also examined, the properties of the PEAS with young adult male and female populations and compared their responses to those previously found with adolescents. The PEAS was administered to 94 male and the modified version was administered to 77 female undergraduate students. Four subtests were utilized in the health-related fitness test battery: body fatness, aerobic power, flexibility and left and right grip dynamometer score.

The relationship between the five model variables exhibited the same patterns as those from youth male subjects. Differences appeared only in the strengths of relationships. Attraction to physical activity did not contribute to the model for females in this study, but it did for males. Physical estimation emerged as the key factor, particularly for females, in its relationship with physical fitness. Estimation and attraction reliability coefficients ranged between 0.87 and 0.97 for both male and female.

Sonstroem (1984) stated that one of the reasons that self-esteem is not directly related to physical

fitness could be that the studies performed deal with global self-esteem and not self-esteem in regard to personal functioning in specific areas. No relationships have been found between physical fitness and global self-esteem. However, different studies have found relationships between physical fitness and estimation and between global self-esteem and estimation (Neale, et al, 1969; Sonstroem, 1976, 1978).

Bixby (1971) studied the relationship of physical fitness and to estimation in tenth to 12th grade male student grade. Bixby found a positive relationship between physical fitness and self-estimates of physical ability and between self-estimates of physical ability and global self-esteem. Nevertheless, no relationship was found between physical fitness and global self-esteem.

Three studies have also demonstrated relationships between estimation and attraction (Neale et al., 1969; Sonstroem 1974, 1976). Correlation coefficients in these studies ranged from .53 to .66. But two of three did not show significant relationships between attraction and self-esteem. No relationship was found between attraction and physical fitness. However, when the relationships between

estimation and self-esteem and between estimation and physical fitness were tested by controlling attraction influences, no significant relationship was found between these variables (Sonstroem, 1978).

Sonstroem (1978) posited that estimation rather than physical fitness or self-esteem influences the attraction to or interest in physical activity. The Psychological Model for Physical Activity Participation proposes that estimation and attraction are the mediating variables between physical fitness, physical activity and self-esteem relationship.

Psychosocial Characteristics of Puerto Rican Youth

A preponderance of psychological research in the Western Hemisphere has been concentrated in the United States. According to Segall (1979), psychology, by limiting its attention to behaviors of individuals in a single culture, loses sight altogether of the culture itself. This same limitation may be found in physical education research. Few studies have been performed with different cultures outside and inside of the United States.

Griffin (1985) found that one of the problems that confronts schools at this time is the wide range of diversity among students. Great racial and cultural

differences exist. Although individual teacher actions are important in determining the quality of instruction, there are other factors impinging on a teacher's ability to consistently achieve excellence, or even adequacy, in the instruction provided and the outcomes accomplished. Most studies of teaching in physical education focus on intraclass phenomena: teacher, student behavior, and attitudes (Griffin, 1985). However, these investigations are limited because they do not consider the extraclass factor inherent to the individual school. One of the factors that has been found to affect the conduct of the physical education program is that of cultural differences (Griffin, 1985). Teachers have to respond daily to cultural differences in dress, languages, interaction patterns, and perceptions of physical activity that affect student participation in physical education.

According to Swisher and Swisher (1976) a multicultural approach in teaching physical education must be based upon knowledge of those implicit or invisible aspects of culture such as values, beliefs and attitudes which have been transmitted/taught just as basically as language, games and music.

While attitudes have changed substantially over

the past 100 years, immigrants are still experiencing what Swisher and Swisher (1986) called a "conformity-for-your-own sake attitude". A certain degree of conformity is necessary in order to rapidly enter the mainstream of American society. Due to the accessibility that Puerto Ricans have as American citizen to migrate to mainland U.S.A., Puerto Ricans have been one of the populations that has been greatly affected.

The migration of Puerto Ricans to the United States and the subsequent return of many to the island is one of the most interesting sociopsychological phenomena of the second half of the twentieth century (Prewitt-Diaz & Dragun, 1985). According to the U.S. Census (1980) the population of the island of Puerto Rico was 3.4 million. The Planning Board of Puerto Rico (Prewitt-Diaz and Draguns, 1985) reported that approximately 42% of the island population has migrated to the mainland at least once. Prewitt-Diaz and Draguns (1985) consider that the migration of this population is different from previous migration waves to the U.S.A. because:

1. Puerto Ricans are American citizens and therefore, can travel to the U.S. at will.

2. the migration of Puerto Ricans is the first

airborne migration.

3. the island is only three and half hours away from the East Coast airports.

4. the Spanish language and Puerto Rican culture have been kept alive on the mainland because of the constant turnover of migrants.

These statements show the differences between Puerto Rican and other migrant populations. Since, the native language of Puerto Ricans is Spanish and their cultural background is Hispanic/African, these two factors have affected Puerto Ricans in the adjustment to the U.S.A.

As a result, the mental health of the Puerto Ricans has been affected by this adjustment process. Ruiz (1984) presented different studies which showed a high incidence of admission to psychiatric hospitals as well as a high percentage of schizophrenic diagnoses in Puerto Ricans who live in New York State. One of the factors that has influenced the adjustment of Puerto Ricans is the expression of self. The behaviors, language and culture of each culture are different.

Prewitt-Diaz (1983) studied the extent to which participation in a bilingual program affects self-concept and attitude toward school of recently

arrived Puerto Rican Islanders (PRI) when compared with Puerto Rican Mainlanders (PRM). For the purpose of his study PRI were those students who were on the mainland for the first time and were enrolled in a bilingual program. The PRM were those students who had lived all their school lives on the mainland. The students were administered the instruments at the beginning of the school year. The PRI participated in a bilingual program while PRM were participating in the regular school program. After one school year all students were readministered the same instruments. Significant changes in self-esteem and school sentiment was found for the PRI group while there were no significant difference in the PRM group with regards to self-esteem and school sentiment.

Prewitt-Diaz (1984) studied the self-perception, perception of school, and perception of teacher of returning migrant students in Puerto Rico and the United States. The returning migrants were those students who returned to the island after living for more than three years on the mainland. Circulating migrants were those students who constantly move "to and from" two places (more than one return). The students were selected from Puerto Rico and they were asked to indicate their perception of self-concept,

school and teacher in the island and the mainland. The attitude toward teachers, school, and self was significantly different between the groups. The circulating migrant students showed a significantly higher attitude toward teachers, school, and self on the mainland than the returning migrant, while the returning migrants was significantly higher than the circulating migrants in the perception of teachers, self and schools, on the island.

On the other hand, there is prejudice, not only against blacks, but also against many other minority groups which has existed and continues to exist in mainland society (Rosenberg,1979). Rosenberg argued that if a group is disdained in society and its members treated with contempt, then the principle of reflected appraisals would lead one to expect members of the group to see themselves accordingly, that is, to have low self-esteem. He presented two of the concepts which have been constantly invoked as central explanatory principles to this phenomenon: reflected appraisals and social comparisons. The principle of reflected appraisals, would explain low self-esteem among members of socially derogated racial, religious, or ethnic groups. It follows that if others look down on us by virtue of our social position, in time we

will come to see ourselves more or less as they do. The social comparison principle posits that minority group members, have lower self-esteem because they compare unfavorably with the majority group in ways other than their group membership. These unfavorable comparisons, such as low class position, poor school performance and stigmatized family structures are themselves consequences of prejudice and discrimination.

Rosenberg (1979) summarized one of the studies in which self-esteem is analyzed in Puerto Ricans in the U.S. This study was performed by Zirkel and Moses in 1971, which compared the self-esteem of 120 fifth and sixth-grade Puerto Ricans, blacks and whites in three Connecticut schools. The groups were balanced in terms of sex, self-esteem and I.Q. The Coopersmith Self-Esteem Inventory was utilized. It was found that Puerto Ricans rated significantly lower than the blacks or whites in self-esteem.

According to Lewis (1968), Wagenheim (1970), and Montijo-Colon (1974), Puerto Ricans confront a problem of cultural identification as a result of Americanization. Americanization is the process by which people of a foreign culture acquire American ways, standards on living, and national loyalty.

The cultural impact, was recognizable from the moment of transfer in 1898, when Puerto Rico as a result of the Hispanic-American war became part of the United States. Some of it was immediate and obvious- the revolution in sports, for example. Before 1898 baseball had been a popular game in Puerto Rico but after that date it rapidly became the national sport (Lewis, 1968).

As a result of Americanization the Puerto Rican culture has been devaluated. Lewis (1968) maintains that "the depreciation of the local culture has encouraged a corresponding self-depreciation in individuals"(p.244). On the other hand, Wagenheim (1970) believes that it has to be hard for the Puerto Rican to deal with two languages, two citizenships, two basic philosophies of life, two flags, two anthems, and two loyalties. There is considerable controversy as to the effect of Puerto Rico's present relationship to the U.S. upon the way of life and subjective experience of Puerto Ricans.

Montijo-Colon (1974) explored the relationship among self-esteem, group pride, and cultural group with Puerto Ricans that live in the metropolitan area and Puerto Ricans that live in the countryside, underprivileged group members. The scale for this

study was developed by the author utilizing the semantic differential technique. The scale was employed to rate the following concept: "Puerto Ricans", "American", "Me" and "My Ideal". It was found that both the urban and rural samples showed a positive correlation between self-esteem and Puerto Rican identification. The urban sample demonstrated a negative correlation between group pride and self-esteem. For the rural sample group pride is independent of and irrelevant to self-esteem. Puerto Rican identification is irrelevant to group pride and close identification with Americans is related to a reduction in group pride. It was also found that subjects saw themselves more like Puerto Ricans than like Americans.

Rivera (1982) studied the perception that Puerto Ricans have about themselves as a country and about themselves as individuals. It was found that workers in P.R. perceived themselves more assertively than students in P.R. The students considered Puerto Ricans as docile, weak, lazy and laid back while the workers considered Puerto Ricans as brave, aggressive, bright, and workers.

Further research with hispanic adolescents (Padilla and Lindholm, 1984) and specifically Puerto

Rican adolescents is recommended (Prewitt-Diaz, 1984).

Chapter 3

PROCEDURE

The procedure is divided into five sections: Selection of Subjects; Research Design; Instruments; Administration of Tests; and Computation of Data.

Selection of Subjects

The subjects utilized in this study were 132 High School students of Puerto Rican ancestry. Ninety two were Puerto Rican bilingual students of Puerto Rico: 16 boys and 14 girls of Seso High School, Mayaguez, P.R.(n=30); and 32 boys and 30 girls of Boneville High School, Cupey Alto, P.R. (n=62). Forty subjects were of Puerto Rican ancestry and were living in Rhode Island: 21 boys and 19 girls of Central High School, Providence, R.I. These students were from ninth-grade to twelfth-grade.

Because the paper and pencil tests were in English the schools selected in Puerto Rico were bilingual.

Research Design

Four tests were utilized in this study: the Physical Estimation and Attraction Scales (PEAS), the Rosenberg Self-Esteem Scale, a study-developed survey of

physical activity participation, and the AAHPERD Youth Fitness Test. Also, a background questionnaire developed for this study was administered. The paper and pencil tests were administered by the author, with the assistance of a physical education teacher. The AAHPERD Youth Fitness Test was administered by the author, physical education teachers and students majoring in physical education.

Instruments

Physical Estimation and Attraction Scales

The Physical Estimation and Attraction Scales (Appendix A) was developed by Sonstroem (1974) utilizing boys, grade nine to 12. The PEAS is an attitude scale designed to explain motivation toward physical activity. Estimation items ask students to affirm or deny their own physical characteristics, fitness, athletic ability or potential in motor performances. Attraction items ask students to affirm or deny their personal interests or likes for certain forms of physical activity. It consists of 89 items to which the student responds either true or false. This form is self-administered and takes about 20 minutes to complete. However, more time was required in this

study because for most of the students English was their second language and they did not understand English completely.

Rosenberg Self-Esteem Scales

The Rosenberg Self-Esteem Scale (Appendix B) was developed by Rosenberg in 1965 (Robinson & Shaver, 1973). This scale measures the self-acceptance aspect of self-esteem. The scale consists of ten items answered on a five point scale from strongly agree to strongly disagree. The form is self-administered and requires at most five minutes to complete.

Survey of Physical Activity Participation

A study-developed survey of physical activity participation (Appendix C) presented a list of recreational activities people enjoy. The subjects circled the activities that they normally participated in during the year, the number of days per week that they generally participated, for how long, and also the number of weeks per year that they generally participated in the activity. A list of 30 activities was created for this survey.

Background Questionnaire

The background questionnaire (Appendix D) was developed for this study to determine the subject's social position.

Social Status was determined utilizing the Two Factor Index of Social Position (Hollingshead, 1965). The two factors are occupation and education. According to Hollingshead (1965) occupation is presupposed to reflect the skill individuals possess and education is believed to reflect not only knowledge, but also cultural tastes.

AAHPERD Youth Fitness Test

Six subtests were included in the AAHPERD Youth Fitness Test (Baumgartner and Jackson 1982)(Appendix E). These were: pull-up (boys) or flexed-arm hang (girls), sit-up, shuttle run, standing long jump, 50-yard dash, and the 600-yard run. These tests were administered according to the directions for each test.

Administration of Tests

Central High School

Paper and pencil tests. The paper and pencil tests were administered by the author and major

professor at the first class hours in the morning. The students were gathered in the school dining room. General information about the research was given in English by the major professor and was translated by the author to Spanish. After the information was given, the Background Questionnaire was distributed. The rest of the questionnaires were passed out to students individually as they completed the Background Questionnaire. Students who demonstrated difficulties answering the tests were helped by the author and by peers who were fluent in English.

The AAHPERD Youth Fitness Test. The AAHPERD Youth fitness Test was administered by the author, major professor, and five students majoring in physical education. After the paper and pencil tests were administered, the students went to the school's gymnasium where four of the subtests were given: pull-up (boys) or flexed arm hang(girls), sit-ups, shuttle run, and standing long jump. Later students were led to the outdoor track for the 50-yard dash, and 600-yard run.

Seso High School and Bonneville School

Paper and pencil tests. The tests were administered by the author and a physical education

teacher in a classroom during physical education classes. General information about the research conducted was given in Spanish by the author. The tests were given in the same way as at Central High. The students showed less of a problem with the English, however the students that had problems understanding some words or sentences were assisted by the author, the physical education teacher and by some students.

AAHPERD Youth Fitness Test. The test battery was administered by the author and five physical education teachers during physical education class periods. The facilities for physical education were limited in both schools. The whole AAHPERD Youth Fitness Test was conducted outdoor, in a basketball court and in areas assigned by the physical education teacher as appropriate for the 50-yard, and 600-yard run.

Computation of data

PEAS

As stated earlier, the PEAS consists of 100 items to which the student responds either true or false. Of the 100 items, 33 measure physical estimation; 54 physical attraction; and 11 are neutral-items that are not scored, but are included to hide the nature of the

scale. For every response consistent with the scoring key, the student receives one point. The score is obtained by simply counting the number of correct responses for estimation and for attraction.

Rosenberg Self-Esteem Scale

The scale consists of ten items answered on a five point scale: A= strongly agree, B= agree, C= neither agree or disagree, D= strongly disagree, and E= disagree. Point values of one to five were assigned to each item, where for items 1,2,4,6, and 7 the A (strongly agree) was the higher point and for items 3,5,8,9, and 10, the higher point was E (strongly disagree).

Survey of physical activity participation

For each activity listed, subjects checked the appropriate frequency of participation per week, and duration in minutes and weeks per year. The participation, duration and weeks were multiplied for each activity. Afterward, the results of each activity were added for the total scores. Also, the number of activities were scored separately.

Background Questionnaire

The Index of Social Position Scores was determined by the scale value for occupation and the scale value for education. The scale value for occupation was multiplied by the factor weight for occupation, and scale value for education was multiplied by the factor weight for education. The weight for occupation is (7), and for education is (4). The Index of Social Position Score is computed as follows:

<u>FACTOR</u>	<u>SCALE</u>	<u>SCORE</u>	<u>FACTOR</u>	<u>WEIGHT</u>	<u>SCORE X WEIGHT</u>
Occupation	X		7		7X
Education	X		4		<u>4X</u>
Index of Social Position					---- Y

Where the sum of the scores x weights is the index of social position scales.

Social status (I to IV) is assigned by categorizing the summed products of scale x weight.

<u>Social Class</u>	<u>Range of Computed Scores</u>
I	11-17
II	18-27
III	28-43
IV	44-60
V	61-77

AAPHERD Youth Fitness Test

Scores were recorded for each of the six tests. The scores for the flexed arm hang, shuttle run, 50 yard dash and 600 yard run were recorded in seconds. For the flexed arm hang, a longer time was better, while for the shuttle run, 50 yard dash and 600 yard run a shorter time was better. Sit-ups were recorded as the number of correctly executed sit-ups in one minute. A higher score was more desirable. The standing long jump was recorded as the best of the trials in inches.

Test Administration Difficulties

The expected sample on the mainland was not obtained due to several difficulties. Central High School is considered one of the three schools in Rhode Island with a large Puerto Rican population. However, only 40 students wanted to participate in the study.

A second attempt was conducted in Casa Puerto Rico, a Providence Social Club, where a free shirt was promised to participants. Only two students volunteered for the testing.

Paper and pencil tests.

Students showed problems understanding the paper and pencil tests. Usually, these tests can be answered

in 45 minutes, however some students were about one hour and a half answering the tests. Assistance had to be given to some students by the author and by peers who were fluent in English.

This problem was more pronounced with the mainland sample. Only a few students showed problems understanding the tests on the island.

Physical tests. Some of the students did not want to participate in the physical fitness tests. Others did not want to participate in certain of the tests. While the tests were being given, some students began to disappear. On the mainland only 24 of 40 students who participated in the study completed all the physical fitness tests. On the island only 31 of 92 students who participated in the study completed all the physical fitness tests.

Statistical Analysis

The data from the different tests, and the questionnaire were analyzed by computer utilizing SPSSX.

Means and standard deviations were computed for each variable. Means of mainland boys and girls were compared to those of island boys and girls by means of the ONEWAY program of SPSSX. Relationships between variables were analyzed by using the product-moment

correlation coefficient (Pearson r). Statistics were obtained for each sample (Puerto Rican Mainlander and Puerto Rican Islander) and by sex.

Chapter 4

RESULTS

The results chapter is divided into the following sections: Descriptive statistics, Tests of hypotheses, Model relationships, Discussion, Practical Implications, and Recommendations for Future Research.

Descriptive Statistics

Total Sample

Means and standard deviations of the total sample for age, socioeconomic index and the different model variables are presented in Table 1.

TABLE 1

TOTAL SAMPLE MEANS AND STANDARD DEVIATIONS ON STUDY VARIABLES

	Mean	S.D.
Age	15.22	1.13
Socioeconomic	2.58	1.36
Self-esteem	37.84	5.73
Estimation	20.11	5.67
Attraction	31.84	7.94
* Activities	6.11	4.34
Activities Scores	874.77	1005.78

The socioeconomic level scale ranges from one to five, where one is the highest score. The socioeconomic level mean for the total sample was 2.58. This mean showed a middle class socioeconomic level. However a standard deviation of 1.36 does indicate considerable variability.

The maximum possible score for self-esteem was 50 points. The mean for the total sample in self-esteem was 37.84 which is 75% of the maximum possible scores. The highest score for estimation is 33 and 54 for attraction. The means were 20.11 for estimation and 31.84 for attraction, which is 61% and 59% respectively, of the maximum possible scores.

Examination of mean estimation and attraction in this study showed a similarity with the means found by Sonstroem (1974) with American high school student males. These means are also similar to other results found by Dishman (1978, study 1) and Fox et al. (1985) in which male and female college students were studied.

For the Survey of physical activity participation the mean for activities scores was high (874.77) but activities number mean was low (6.11). Because Puerto Rico is a tropical island the weather is almost the

same during the year and the sport events are the same during the whole year.. Therefore, island students may participate at all sports for 52 weeks of the year. On the other hand, the Puerto Ricans on the mainland tend to play the same sport they used to play on the island. The Activity Questionnaire has not been validated and perhaps the scores are not well estimated. The standard deviation for physical activity scores was much higher than the mean. Perhaps many students interpreted the questionnaire differently.

Group Comparisons

Before proceeding with the tests of hypotheses, comparisons were made on variable means of the four subsamples in the project. Group 1 consisted of mainland males, group 2 consisted of island males, mainland females composed group 3 and island females composed group 4. Table 2 presents means for each of these subsamples.

Tests for significant differences were conducted by analysis of variance utilizing the ONEWAY program of SPSSX. This package also permits tests for significant differences between specific groups as hypothesized before the analysis. For the purpose of

this study a priori contrasts were made between mainland boys and island boys, between mainland girls and island girls, and between all of the mainland and all of the island students. Column six of Table 2 lists F values of the single classification analysis

TABLE 2
SUBSAMPLE COMPARISONS ON STUDY VARIABLES

Variable	Groups 1	2	3	4	F	Significant Group Differences (p<.05)
N	21	48	19	44		
AGE	15.81	15.02	15.63	14.98	4.14 ^b	1 vs. 2; 3 vs. 4; 1+3 vs. 2+4
SOECO	3.94	2.10	4.42	1.79	54.51 ^c	1 vs. 2; 3 vs. 4; 1+3 vs. 2+4
SE	37.24	36.00	37.48	39.35	1.82	3 vs. 4
EST	20.38	21.46	16.74	19.95	3.34 ^a	3 vs. 4; 1+3 vs. 2+4
ATTR	34.24	32.69	29.26	30.86	1.74	
NACTS	4.39	7.56	4.45	5.84	3.24 ^a	1 vs. 2; 1+3 vs. 2+4
ACTSC	799.1	1126.6	398.2	774.2	1.88	
PULLS	5.10	8.67			1.74 [*]	
FAH			2.47	5.07	1.13 [*]	
SITS	33.55	39.83	19.46	24.75	22.05 ^c	1 vs. 2; 3 vs. 4; 1+3 vs. 2+4
SLJ	73.20	72.42	51.33	50.44	18.84	
SHUT	11.27	10.76	13.12	13.33	10.01 ^c	
FIFTY	6.75	6.62	8.18	8.21	14.32	
SIXHUN	132.1	148.8	190.0	238.2	14.65 ^c	3 vs. 4; 1+3 vs. 2+4
HEIGHT	66.15	67.04	62.00	63.57	16.82 ^c	3 vs. 4; 1+3 vs. 2+4
WEIGHT	127.9	133.7	118.2	116.6	7.48 ^c	

Group 1 - Mainland Males

Group 2 - Island Males

Group 3 - Mainland Females

Group 4 - Island Females

a - p<.05

b - p<.01

c - p<.001

* males were tested on pullups, girls were tested on the flexed arm hang

of variance. Column seven of Table 2 indicates which of the hypothesized contrasts were significant. As an example Table 2 indicates an overall age difference among groups ($F=4.14$, $p < 0.01$). Column seven indicates that all of the hypothesized contrasts were different. Mainland boys were significantly older than island boys, mainland girls were significantly older than island girls, and the entire mainland sample was significantly older than the entire island sample.

The socioeconomic index was higher for the island sample than the mainland sample. This difference was especially pronounced between island females and mainland females. While no overall significant difference was found for self-esteem across the groups, self-esteem mean was significantly higher than mainland females' self-esteem mean.

The estimation scores of island girls were found to be higher than those of mainland girls. Also, the entire island sample showed higher estimation scores than the entire mainland sample. On the other hand the attraction means differences were not found among the groups. These results showed that the mainland sample was different to the island sample in how they estimate themselves in relation to physical activity

but not in how much they are interested in physical activity.

In the survey of physical activity participation the island sample proved to be higher than the mainland sample in the number of physical activities participated (NACTS) in but not in the activity scores (ACTSC). Differences were pronounced between mainland boys and island boys.

Significant differences were found for three of the six fitness test; situps (SITS), shuttle run (SHUT) and 600 hundred yard (SIXHUN). Island boys were higher in situps than mainland boys, the island girls were higher than mainland girls, and the entire island was higher than the entire island sample. In the shuttle run, the island sample scored significantly better than the mainland sample. The island girls were significantly poorer than the mainland girls in the 600 yard, while the island sample overall was poorer than the mainland sample. In two of the three physical fitness tests where significant differences were found, shuttle run and 600 yard, the mainland sample showed better scores than the island sample (the lower scores were the best). No significant differences were found for pullups (PULLS), flexed arm hang (FAH), standing long jump (SLJ), and 50 yard dash. In pullups

and flexed arm hang the samples were smaller due to the fact that the groups were divided by sex. Boys took the pullups test while girls took the flexed arm hang test.

Tests of Hypotheses

Hypotheses were tested by means of Pearson r correlation. Table 3 presents Pearson r values for mainland males (first row for each variable) and for island males (second row for each variable). Values for mainland and island girls are presented in the same manner in Table 4. Test for significant differences between coefficients were conducted by transforming the r coefficients to Fisher z values and utilizing the formula below (Ferguson, 1971, p. 170-171).

$$\sqrt{\frac{Zr = Zr1 - Zr2}{1/N1-3 + 1/N2-3}}$$

Hypothesis 1

Hypothesis 1: The relationship between estimation of one's physical ability and global self-esteem is significantly larger in mainland as compared to island high school students.

Table 3 indicates coefficients of 0.582 and 0.571 for mainland and island males respectively between estimation and self-esteem. A test for significant differences produced a z value of .54 ($p>0.29$) which failed to achieve significance at the customary 0.05 level of confidence.

TABLE 3
CORRELATION MATRIX OF STUDY VARIABLES FOR MALES

	AGE	SOECO	EST	ATTR	NACTS	ACTQ
SE	.150 .154	-.023 -.182	.582 ^b .571 ^c	.115 ^b .392	-.001 ^b .440 ^b	-.330 .367
AGE	---	-.011 -.132	.463 ^b .112	.314 .159	-.149 -.058	-.115 .021
SOECO	---	---	.155 -.179	-.095 -.080	.215 -.011	.370 -.112
EST	---	---	---	.633 ^c .498 ^c	.210 .319 ^a	-.177 ^a .281 ^a
ATTR	---	---	---	---	.165 ^c .454 ^c	.130 .130
NACTS	---	---	---	---	---	.475 ^b .305 ^a

a = $p<.05$ b = $p<.01$ c = $p<.001$

Note: Upper row for each variable contains values for mainland males, lower row for island males.

Table 4 presents coefficients of 0.359 and 0.104 respectively for mainland and island girls between estimation and self-esteem. A test for significant differences produced a z value of 0.93 ($p>0.18$) which failed to achieve significance at the 0.05 level.

Based on these separate analyses for males and females, Hypothesis 1 was not supported. It was concluded that the relationship between estimation and global self-esteem is not necessarily larger in mainland as compared to island students.

TABLE 4
CORRELATION MATRIX OF STUDY VARIABLES FOR FEMALES

	AGE	SOECO	EST	ATTR	NACTS	ACTQ
SE	.355 .145	-.152 .004	.359 .104	.460 ^a .136	.012 -.045	.155 -.138
AGE	--- ---	.068 .009	-.073 -.055	-.011 -.097	-.783 ^b -.102	-.063 .200
SOECO	--- ---	--- ---	.252 -.139	-.268 .141	.309 -.013	.180 -.041
EST	--- ---	--- ---	--- ---	.011 ^b .468 ^b	.162 .130	-.342 .178
ATTR	--- ---	--- ---	--- ---	--- ---	.776 ^b -.070	.231 .130
NACTS	--- ---	--- ---	--- ---	--- ---	--- ---	.043 .613

a = p < .05 b = p < .01 c = p < .001

Note: Upper row for each variable contains values for mainland females, lower row contains values for island females.

Hypothesis 2

Hypothesis 2: The relationship between estimation of one's physical ability and actual physical fitness is significantly larger in mainland as compared to island high school students.

Table 5 presents the coefficients for mainland and island males between estimation and physical

fitness tests.

TABLE 5
COEFFICIENTS BETWEEN ESTIMATION AND FITNESS TESTS
FOR MAINLAND AND ISLAND BOYS

	Mainland	Island
Pullups	.328	.085
Situps	.262	.294
S-L-J	.053	.240
Shut	-.198	-.131
50 yd.	-.642 ^b	-.103
600 yd.	-.713 ^c	-.311

a = $p < .05$ b = $p < .01$ c = $p < .001$

A test for significant differences produced a z value of 0.73 ($p > 0.23$) for pullups, 0.08 ($p > 0.47$) for situps, 0.597 ($p > 0.28$) for standing long jump, 0.20 ($p > 0.42$) for shuttle run, 1.74 ($p > 0.04$) for 50 yard dash and 1.44 ($p > 0.075$) for 600 yard. The z values failed to achieve significance at the level customary 0.05 level of confidence for five of the coefficients. The mainland boys coefficient was found significantly higher only for 50 yard dash. In summary Hypothesis 2 was supported only in the case of the 50 yard dash.

Table 6 presents the coefficients for mainland and island girls between estimation and fitness tests.

A test for significant differences produced a z value of 1.08 ($p>0.14$) for flexed arm hang, 0.22 ($p>0.41$)

TABLE 6
COEFFICIENTS BETWEEN ESTIMATION AND FITNESS TESTS
FOR MAINLAND GIRLS AND ISLAND GIRLS

	Mainland	Island
F-A-H	.100	-.493 ^a
Situps	.399	.474 ^a
S-L-J	.352	.215
Shut	-.525 ^a	-.004
50 yd.	-.503 ^a	-.261
600 yd.	-.299	-.260

a = $p<.05$ b = $p<.01$ c = $p<.001$

for situps, 0.37 ($p>.098$) for standing long jump, 1.39 ($p>0.08$) for shuttle run, 0.71 ($p>0.23$) for 50 yard dash and 0.10 ($p>0.46$) for 600 yard. The z values failed to achieve significance at the level customary 0.05 level of confidence. In summary, Hypothesis 2 was not substantiated for girls. Therefore, out of 12 tests with girls and boys, only one of the hypothesized differences was significant. Research Hypothesis 2 was not supported. However, it should be pointed out that a majority of the data in Table 5 and 6 lie in the hypothesized direction.

Model Relationship

Figure 1 indicates the relationship between the variables presented in the Psychological Model for Physical Activity.

		SELF-ESTEEM			
		M	I		
		.582	.571		
		.359	.104		
		ESTIMATION		-----ATTRACTION	
		M	I		
4 of 6 above	.25				
5 of 6 above	.25				
		M	I		
		2 of 6 sign.	2 of 6 sign.		
		2 of 6 sign.	1 of 6 sign.		
		I			
2 of 6 above	.25				
3 of 6 above	.25				
		PHYSICAL FITNESS			
		M	I		
		.165	.465		
		.776	.070		
		NACTS		-----	
		ACTSC		-----	
		M	I		
		.089	.130		
		.231	.130		

FIGURE 1
PSYCHOLOGICAL MODEL FOR PHYSICAL ACTIVITY

* in the figure above the upper correlations and significances are for the boys and the lower ones are for the girls samples.

Due to the small size of the samples it was

difficult to obtain both significant and stable coefficients.

Table 5 and Table 6 present evidence that support the relationship between estimation and physical fitness even with the small sample size. Table 5 indicates that for mainland and island boys two of the six physical fitness tests were significantly related to estimation (see Figure 1, center). Also, it was found that for the mainland boys four of the six correlation coefficients were higher than 0.25, and for island boys two of the six coefficients were higher than 0.25 (see left margin of Figure 1).

Table 6 indicates that for mainland girls two of the six fitness tests were significantly related to estimation but only one relationship was significant for island girls. For the mainland girls five of the six coefficients were higher than 0.25 and for the island girls three of the six were higher than 0.25.

Significant relationships between self-esteem and estimation were found again as compared with studies presented by Sonstroem(1978). The relationships were significant for both boy samples, and for mainland girls but not for island girls. It is concluded that the model was supported in this area for all of the subsamples except island girls. Island girls

subsamples except island girls. Island girls demonstrated the highest means in self-esteem scores. Evidently they established their high levels of self-esteem from bases other than sport.

The coefficients between attraction and physical activity number were mixed. Projected relationships were found for mainland girls and island boys in the case NACTS. One of the reasons that the results were not significant in this area is because the Activity Participation Questionnaire has not been validated and may be imprecise.

Even within the limitations presented in this study the results support the Psychological for Physical Activity. It is concluded that the model is applicable to Puerto Rican high school students.

Discussion

The purpose of this experiment was to study the validity of the Psychological Model for Physical Activity Participation in high school students of Puerto Rican ancestry. It was believed that the relationships between the variables stated in the model would be higher in Puerto Rican students living in the United States than the Puerto Rican student on Puerto Rico.

Hypothesis 1 stated that the relationship between estimation of one's physical ability and global self-esteem is higher in Puerto Rican mainland than Puerto Rican islander. The hypothesis was not accepted, no significant differences were found between the samples. Both groups, mainland and island sample showed a significant relationship between estimation and global self-esteem. Different studies conducted to determine the relationship between self-esteem and estimation have been performed with American high school student (Sonstroem, 1974) and American college-age student (Dishman, 1978; Corbin, 1985). The results obtained in this study with Puerto Rican high school students agree with the finding of those above studies.

Hypothesis 2 stated that the relationship between estimation of one's physical ability and physical fitness is higher for the Puerto Rican mainland students than for the Puerto Rican island students. Hypothesis 2 was not accepted, no significant differences were found between the groups.

The relationship of physical ability to self-esteem in mainland and island was not significantly different. The results in both groups agree with the studies revised by Sonstroem (1978)

with American students. One of the reasons that can be considered in explaining these results is the americanization process. It is possible that the integration into the American culture is occurring in the same level, for both samples. Due to the political situation between Puerto Rico and United States, the Puerto Rican still on the island has the same opportunity of integration into the American culture as the Puerto Rican on the mainland.

The results of this study support the Psychological Model for Physical Activity. Estimation is related to both physical fitness and self-esteem. According to Sonstroem (1978) estimation may be considered to be a mediating variable between physical fitness and self-esteem. In the present study similar to a large amount of previous research (Sonstroem, 1978), physical fitness was not directly related to self-esteem. Estimation, however, was significantly related to both physical fitness and self-esteem.

Significant relationships were found between attraction and estimation for all the subsamples except the mainland girls. This result agrees with other findings reported by Sonstroem (1978).

On the other hand, some studies have found significant relationship between attraction and

self-esteem while other studies have not found this relationship. In this study the results were mixed. A relationship between self-esteem and attraction was found in island boys and mainland girls, but no relationship was found in the case of mainland boys and island girls. Sonstroem (1978) posited in his analysis of the Psychological Model for Physical Activity that estimation rather than physical fitness or self-esteem influences the attraction to or interest in physical activity. This presupposition could be assumed also in this study with Puerto Rican high school students.

Different factors can be considered to affect the results in this study. Due to the small sample size it was hard to get significant statistics. The stability of the coefficients obtained may also be questioned. One of the reasons that the samples were small was because some students did not want to participate in some of the tests. Some students did not want to participate in the physical fitness tests, and others did not want to complete the paper and pencil inventories.

Differences in weather can be considered another factor that may have affected these results. The temperature and humidity on the mainland were lower

than on the island. On the other hand, the clothes that the subjects were wearing on the mainland were not the most appropriate for the physical fitness tests.

However, even with the limitations presented, in the study results support the Psychological Model for Physical Activity. It is concluded that the model can be applicable to Puerto Rican high school students on the island of Puerto Rico as well as on the U.S.A. mainland.

Practical Implications

One of the factors that has been found to affect the conduct of physical education programs is that of culture differences (Griffin, 1985). Results of the present study would tend to minimize the importance of these cultural differences when fitness activities are being studied in the physical education curriculum.

Study results indicate the relevance of the Psychological Model for Activity Participation and PEAS for use with Hispanic Youth.

Implication for Future Research

The application of the Psychological Model for Physical Activity Participation to Puerto Rican high

school students opens the door to future studies with other non-American populations. Further studies with larger Puerto Rican samples is recommended.

It is necessary to translate more psychological tests into Spanish. If the tests utilized in this study had been in Spanish, better subject responses could have been obtained because more students would have been able to participate.

The Physical Activity Participation Inventory should be improved and validated.

By conducting further research, better understanding could be gained with respect to the psychological variables related to a physical activity program with Puerto Rican and another populations living in the United States.

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APPENDIX A
PHYSICAL ESTIMATION AND ATTRACTION SCALES

(Use the B section on the answer sheet.)

ATTITUDE QUESTIONNAIRE

The statements below reflect certain attitudes and interests of persons. Read each statement and decide whether it is true or false as applied to you. Indicate your answer by blackening the appropriate space on the separate answer sheet. In some cases you may have difficulty deciding which response is best, but please make some decision and answer every item. Please do not make an attempt to be consistent in your answers during the test, but respond to each item individually. Even if an item asks about things you haven't experienced, answer it as best you can on the basis of what you have heard, seen, or read.

True or False:

1. I would rather see a play than a movie.
2. I prefer exercising to reading.
3. I generally prefer talking with friends to playing a family table game such as monopoly.
4. I would much rather play softball than go for a ride in a car.
5. Most of my friends work harder than I do.
6. My body is strong and muscular compared to other boys my age.
7. I would be interested in learning to play a musical instrument.
8. Most sports require too much time and energy to be worthwhile.
9. I would have made a good accountant.
10. I am in better physical condition than most boys my age.
11. The mechanical properties of motors interest me a great deal.
12. On a Sunday afternoon, I would prefer to go to a movie rather than to go on a picnic.
13. I am quite limber and agile compared to others my age.
14. I often stick up for my own point of view even when no one agrees with me.
15. I enjoy people who talk a great deal.
16. I prefer team sports to individual sports because of the experience of playing with different people.
17. I like to be in sports that don't require a great amount of running.
18. I know that my health improves when I exercise.
19. I just don't have the coordination necessary to look like a graceful skier.
20. I prefer woodworking to tinkering with a motor.
21. One of my favorite interests is listening to music.

22. I would enjoy participating in activities such as cross-country skiing, and channel swimming.
23. Music, art, or intellectual pursuits are more refreshing to me than physical activity.
24. I would rather visit an amusement park than watch a tennis match.
25. I like the social opportunities afforded by physical activity programs.
26. I am better coordinated than most people I know.
27. I would enjoy difficult mountain climbing.
28. I love to go to jazz or rock concerts.
29. I don't think that I'd enjoy participating in a judo program.
30. I enjoy the feeling of physical well-being one gets after a day's tramp in the woods.
31. I would rather watch a good movie than a hockey match.
32. I would like to belong to some type of exercise group.
33. I am a good deal stronger than most of my friends.
34. I would rather play poker than softball.
35. Compared to other people I am somewhat clumsy.
36. I enjoy hard physical work.
37. I like to engage in recreational exercise rather than in organized, competitive athletics.
38. I am stronger than a good many of my friends.
39. Most people I know think I have very good physical skills.
40. My friends seem to be more physically active than I am.
41. I would rather walk than run through an open meadow or field.
42. Sports provide me with a welcome escape from the pressures of present-day life.
43. I like the rough and tumble of athletic competition.
44. I prefer to watch an exciting basketball game to playing it myself.
45. I rather enjoy the physical risk involved when I play football.
46. I would enjoy participating in a vigorous weight-lifting program.
47. Long distance running would seem to be an enjoyable activity.
48. I doubt that I could ever get into good physical condition.

49. My legs have as much spring as those of champion high jumpers.
50. I don't enjoy doing things that get me sweaty and dirty.
51. I prefer not to participate in physical activities that involve risk of injury.
52. I would enjoy belonging to a whitewater canoe club.
53. When tensions are high, I prefer to lie down and rest rather than to absorb myself in physical activity.
54. If I wanted to, I could become an excellent tennis player.
55. I enjoy performing gymnastic stunts because of the coordinated movements involved.
56. It makes no difference to me how strong or fit I am.
57. I would like to meet more people by engaging in various types of physical activities.
58. After a day at school, I prefer to take it easy instead of participating in vigorous sport activities.
59. It is difficult for me to catch a thrown ball.
60. With a fair amount of practice I could maintain a high bowling average.
61. I enjoy the discipline of long and strenuous physical training.
62. I can run faster than most of my friends.
63. Watching an athletic contest provides a welcome relief from the cares of life.
64. With practice I could become a very good golfer.
65. I have more important things to do than to spend time on developing and maintaining physical fitness.
66. I would rather run in a track meet than play badminton.
67. I could do better at long distance hiking than the average boy of my age.
68. I exhibit a fair amount of leadership in a sports situation.
69. I lack confidence in performing physical activities.
70. Even with practice I doubt that I could learn to do a handstand well.
71. Playing tennis appeals to me more than does golfing.
72. I can run for longer distances than most boys of my age.
73. I'm a natural athlete.
74. The thought of getting sweaty and dirty often keeps me from exercising.
75. I love to run.

76. Getting into good physical shape takes too much effort to be really worth it.
77. I have a strong throwing arm for baseball or softball.
78. Karate competition must be fun.
79. It would be very difficult for me to learn to do a back dive.
80. I would prefer to listen to a concert than to watch a gymnastics match.
81. I am well-equipped to excel at physical activities.
82. Being strong and highly fit is not really that important to me.
83. Absorbing myself in a good sport activity provides an escape from the routine of a school day.
84. Even with practice I doubt that I could ever learn to do a cartwheel well.
85. Exercise relieves me of emotional strain.
86. I would play sports more often if I didn't get so tired.
87. Probably I could get into good physical condition faster than most fellows my age.
88. I often doubt my physical abilities.
89. I would rather play touch football than go to an amusement park.
90. Participation in physical activity improves me as a social person.
91. I'm not very good at most physical skills.
92. I enjoy the exhilarated feeling one gets after doing calisthenics.
93. I'm not able to meet many worthwhile people through participation in sports.
94. Poor timing handicaps me in certain physical activities.
95. I am a natural leader in sport activities.
96. I would rather play active sports like soccer and basketball than participate in activities like badminton and softball.
97. I believe it is important that a person belongs to a group that participates in sport activities together.
98. I would rather watch either a baseball or basketball game than visit a museum or art gallery.
99. Target archery appeals to me more as an activity than does tennis.
100. I believe one of the greatest values of physical activity is the thrill of competition.

ATTITUDE QUESTIONNAIRE (F)

The statements below reflect certain attitudes and interests of persons. Read each statement and decide whether it is true or false as applied to you. Indicate your answer by blackening the appropriate space on the separate answer sheet. In some cases you may have difficulty deciding which response is best, but please make some decision and answer every item. Please do not make an attempt to be consistent in your answers during the test, but respond to each item individually. Even if an item asks about things you haven't experienced, answer it as best you can on the basis of what you have heard, seen, or read.

True or False:

1. I would rather see a play than a movie.
2. I prefer exercising to reading.
3. I generally prefer talking with friends to playing a family table game such as monopoly.
4. I would much rather play softball than go for a ride in a car.
5. Most of my friends work harder than I do.
6. My body is strong and muscular compared to other girls my age.
7. I would be interested in learning to play a musical instrument.
8. Most sports require too much time and energy to be worthwhile.
9. I would have made a good accountant.
10. I am in better physical condition than most girls my age.
11. Sewing and needlecraft interests me a great deal.
12. On a Sunday afternoon, I would prefer to go to a movie rather than go on a picnic.
13. I am quite limber and agile compared to others my age.
14. I often stick up for my own point of view even when no one agrees with me.
15. I enjoy people who talk a great deal.
16. I prefer team sports to individual sports because of the experience of playing with different people.
17. I like to be in sports that don't require a great amount of running.
18. I know that my health improves when I exercise.

19. I just don't have the coordination necessary to look like a graceful skier.
20. I prefer cooking to reading mystery novels.
21. One of my favorite interests is listening to music.
22. I would enjoy participating in activities such as cross-country skiing, and channel swimming.
23. Music, art, or intellectual pursuits are more refreshing to me than physical activity.
24. I would rather visit an amusement park than watch a tennis match.
25. I like the social opportunities afforded by physical activity programs.
26. I am better coordinated than most people I know.
27. I would enjoy difficult mountain climbing.
28. I love to go to jazz or rock concerts.
29. I don't think that I'd enjoy participating in a judo program.
30. I enjoy the feeling of physical well-being one gets after a day's tramp in the woods.
31. I would rather watch a good movie than a field hockey match.
32. I would like to belong to some type of exercise group.
33. I am a good deal stronger than most of my friends.
34. I would rather play cards than softball.
35. Compared to other people I am somewhat clumsy.
36. I enjoy hard physical work.
37. I like to engage in recreational exercise rather than in organized, competitive activities.
38. I am stronger than a good many of my friends.
39. Most people I know think I have very good physical skills.
40. My friends seem to be more physically active than I am.
41. I would rather walk than run through an open meadow or field.
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45. I rather enjoy the physical risk involved when I play sports.
46. I would enjoy participating in a vigorous weight-lifting program.
47. Long distance running would seem to be an enjoyable activity.
48. I doubt that I could ever get into good physical condition.
49. My legs have as much spring as those of champion high jumpers.
50. I don't enjoy doing things that get me sweaty and dirty.
51. I prefer not to participate in physical activities that involve risk of injury.
52. I would enjoy belonging to a whitewater canoe club.
53. When tensions are high, I prefer to lie down and rest rather than to absorb myself in physical activity.
54. If I wanted to, I could become an excellent tennis player.
55. I enjoy performing gymnastic stunts because of the coordinated movements involved.
56. It makes no difference to me how strong or fit I am.
57. I would like to meet more people by engaging in various types of physical activities.
58. After a day at school, I prefer to take it easy instead of participating in vigorous sport activities.
59. It is difficult for me to catch a thrown ball.
60. With a fair amount of practice I could maintain a high bowling average.
61. I enjoy the discipline of long and strenuous physical training.
62. I can run faster than most of my friends.
63. Watching an athletic contest provides a welcome relief from the cares of life.
64. With practice I could become a very good golfer.
65. I have more important things to do than to spend time on developing and maintaining physical fitness.

66. I would rather run in a track meet than play badminton.
67. I could do better at long distance hiking than the average girl of my age.
68. I exhibit a fair amount of leadership in a sports situation.
69. I lack confidence in performing physical activities.
70. Even with practice I doubt that I could learn to do a handstand well.
71. Playing tennis appeals to me more than does golfing.
72. I can run for longer distances than most girls of my age.
73. I'm a natural athlete.
74. The thought of getting sweaty and dirty often keeps me from exercising.
75. I love to run.
76. Getting into good physical shape takes too much effort to be really worth it.
77. I have a strong throwing arm for baseball or softball.
78. Karate competition must be fun.
79. It would be very difficult for me to learn to do a back dive.
80. I would prefer to listen to a concert than to watch a gymnastics match.
81. I am well-equipped to excel at physical activities.
82. Being strong and highly fit is not really that important to me.
83. Absorbing myself in a good sport activity provides an escape from the routine of a school day.
84. Even with practice I doubt that I could ever learn to do a cart-wheel well.
85. Exercise relieves me of emotional strain.
86. I would play sports more often if I didn't get so tired.
87. Probably I could get into good physical condition faster than most girls my age.
88. I often doubt my physical abilities.

89. I would rather play touch football than go to an amusement park.
90. Participation in physical activity improves me as a social person.
91. I'm not very good at most physical skills.
92. I enjoy the exhilarated feeling one gets after doing calisthenics.
93. I'm not able to meet many worthwhile people through participation in sports.
94. Poor timing handicaps me in certain physical activities.
95. I am a natural leader in sport activities.
96. I would rather play active sports like soccer and basketball than participate in activities like badminton and softball.
97. I believe it is important that a person belongs to a group that participates in sport activities together.
98. I would rather watch either a baseball or basketball game than visit a museum or art gallery.
99. Target archery appeals to me more as an activity than does tennis.
100. I believe one of the greatest values of physical activity is the thrill of competition.

APPENDIX B
ROSENBERG SELF-ESTEEM SCALES

ATTITUDE QUESTIONNAIRE

The statements below reflect certain attitudes and interests of persons. Express your agreement or disagreement by filling in the appropriate circle on your answer sheet according to the following:

Strongly Disagree	Agree	Neither Agree or disagree	Agree	Strongly Disagree
A	B	C	D	E

Respond to ALL statements. Even if an item asks about things that you have not experienced, answer it as best you can on the basis of what you have heard, seen, or read.

Respond to each item individually.

You should rarely need to use C (Neither agree or disagree).

The significant of this research depends upon the degree to which you express your own opinion. Use the A section on the answer sheet.

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

APPENDIX C

SURVEY OF PHYSICAL ACTIVITY PARTICIPATION

Name: _____

ACTIVITY INDEX

Below you will find a list of recreational activities people enjoy. Please circle the activities that you normally participate in during the year. In the second column indicate the number of days per week that you generally participate in the circled activity. In the third column indicate how long (duration) you are active each time you participate. In the fourth column please write in the number of weeks per year that you generally participate in the activity.

<u>ACTIVITY</u>	<u>No. OF DAY A WEEK</u>	<u>DURATION</u>	<u>WEEKS PER YEAR</u>
Backpacking.	1 2 3 4 5 6 7	_____ min.	_____
Badminton	.1 2 3 4 5 6 7	_____ min.	_____
Baseball/softball. . .	1 2 3 4 5 6 7	_____ min.	_____
Basketball	1 2 3 4 5 6 7	_____ min.	_____
Bicycling	.1 2 3 4 5 6 7	_____ min.	_____
Canoeing	1 2 3 4 5 6 7	_____ min.	_____
Dance, Aerobic.	.1 2 3 4 5 6 7	_____ min.	_____
Dance,Ballet/Modern. .	1 2 3 4 5 6 7	_____ min.	_____
Dance, Disco	1 2 3 4 5 6 7	_____ min.	_____
Fitness Calisthenics. .	.1 2 3 4 5 6 7	_____ min.	_____
Football	1 2 3 4 5 6 7	_____ min.	_____
Golf,(walking).	.1 2 3 4 5 6 7	_____ min.	_____
Gymnastics.	.1 2 3 4 5 6 7	_____ min.	_____
Handball	1 2 3 4 5 6 7	_____ min.	_____
Hiking.	1 2 3 4 5 6 7	_____ min.	_____

Jogging/Running.	1 2 3 4 5 6 7	_____ min.	_____
Karate/Judo.	1 2 3 4 5 6 7	_____ min.	_____
Raquetball/Paddleball.	1 2 3 4 5 6 7	_____ min.	_____
Rope Skipping	1 2 3 4 5 6 7	_____ min.	_____
Rowing, Crew	1 2 3 4 5 6 7	_____ min.	_____
Skating, Ice	1 2 3 4 5 6 7	_____ min.	_____
Skating, Roller	1 2 3 4 5 6 7	_____ min.	_____
Skiing, Cross Country.	1 2 3 4 5 6 7	_____ min.	_____
Skiing, Downhill/Water.	1 2 3 4 5 6 7	_____ min.	_____
Soccer	1 2 3 4 5 6 7	_____ min.	_____
Swimming	1 2 3 4 5 6 7	_____ min.	_____
Tennis	1 2 3 4 5 6 7	_____ min.	_____
Volleyball.	1 2 3 4 5 6 7	_____ min.	_____
Weight Training.	1 2 3 4 5 6 7	_____ min.	_____
Yoga	1 2 3 4 5 6 7	_____ min.	_____
Other _____	1 2 3 4 5 6 7	_____ min.	_____
_____	1 2 3 4 5 6 7	_____ min.	_____
_____	1 2 3 4 5 6 7	_____ min.	_____

APPENDIX D
BACKGROUND QUESTIONNAIRE

Background Questionnaire

Name: _____

Height: _____ Weight: _____ Age: _____ Sex (M or F): _____ Grade: _____

Who do you live with?

- ☐ a. both parents
- ☐ b. mother
- ☐ c. other relative (specify) _____

How many years have you lived with the person(s) you have checked above? _____

What is the occupation of the person(s) with whom you are living? Answer for each person below only if you are living with that person.

- a. father: _____
- b. mother: _____
- c. other relative: _____

Please indicate with checkmarks the highest school grade level which each adult that you live with has completed (use one check for each adult you live with):

- ☐ Did not complete the seventh grade.
- ☐ Completed seventh, eighth, or ninth grade.
- ☐ Completed tenth or eleventh grade, but not twelve.
- ☐ Completed high school.
- ☐ Completed at least one year of college, but not a full college course.
- ☐ Completed a four-year college or university course leading to recognized college degree.
- ☐ Completed a recognized professional course leading to a graduate degree.

If you lived in Puerto Rico during any part of your life, what was the occupation of the person(s) you lived with in Puerto Rico?

- a. father: _____
- b. mother: _____
- c. other relative: _____

APPENDIX E
AAHPERD YOUTH FITNESS TEST

pull-up

BOYS

1

FIGURE 1
Improvised equipment for pull-up—
doorway gym bar in background,
ladder in foreground.

FIGURE 2
Starting position for pull-up.

EQUIPMENT

A metal or wooden bar approximately 1½ inches in diameter is preferred. A doorway gym bar can be used, and, if no regular equipment is available, a piece of pipe or even the rungs of a ladder can serve the purpose (FIGURE 1).

DESCRIPTION

The bar should be high enough so that the pupil can hang with his arms and legs fully extended and his feet free of the floor. He should use the overhand grasp (FIGURE 2). After assuming the hanging position, the pupil raises his body by his arms until his chin can be placed over the bar and then lowers his body to a full hang as in the starting position. The exercise is repeated as many times as possible.

RULES

1. Allow one trial unless it is obvious that the pupil has not had a fair chance.
2. The body must not swing during the execution of the movement. The pull must in no way be a snap movement. If the pupil starts swinging, check this by holding your extended arm across the front of the thighs.
3. The knees must not be raised and kicking of the legs is not permitted.

SCORING

Record the number of completed pull-ups to the nearest whole number.

EQUIPMENT

A horizontal bar approximately 1½ inches in diameter is preferred. A doorway gym bar can be used; if no regular equipment is available, a piece of pipe can serve the purpose. A stopwatch is needed.

DESCRIPTION

The height of the bar should be adjusted so it is approximately equal to the pupil's standing height. The pupil should use an overhand grasp (FIGURE 3). With the assistance of two spotters, one in front and one in back of pupil, the pupil raises her body off the floor to a position where the chin is above the bar, the elbows are flexed, and the chest is close to the bar (FIGURE 4). The pupil holds this position as long as possible.

RULES

1. The stopwatch is started as soon as the subject takes the hanging position.
2. The watch is stopped when (a) pupil's chin touches the bar, (b) pupil's head tilts backwards to keep chin above the bar, (c) pupil's chin falls below the level of the bar.

SCORING

Record in seconds to the nearest second the length of time the subject holds the hanging position.

1

GIRLS

flexed-arm hang

FIGURE 3
Starting position for flexed-arm hang.

FIGURE 4
Flexed-arm hang.

sit-up (flexed leg)

BOYS AND GIRLS

2

FIGURE 5
Starting position for flexed leg sit-up

FIGURE 6
Flexed leg sit-up

EQUIPMENT

Clean floor, mat or dry turf and stop-watch.

DESCRIPTION

The pupil lies on his back with his knees bent, feet on the floor and heels not more than 12 inches from the buttocks. The angle at the knees should be less than 90 degrees. The pupil puts his hands on the back of his neck with fingers clasped and places his elbows squarely on the mat, floor or turf. His feet are held by his partner to keep them in touch with the surface. The pupil tightens his abdominal muscles and brings his head and elbows forward as he curls up, finally touching elbows to knees. This action constitutes one sit-up. The pupil returns to the starting position with his elbows on the surface before he sits up again. The timer gives the signal "ready-go," and the sit-up performance is started on the word "go." Performance is stopped on the word "stop." The number of correctly executed sit-ups performed in 60 seconds shall be the score.

RULES

1. Only one trial shall be allowed unless the teacher believes the pupil has not had a fair opportunity to perform.
2. No resting is permitted between sit-ups.
3. No sit-ups shall be counted in which the pupil *does not* (a) keep the fingers clasped behind the neck; (b) bring both elbows forward in starting to sit up without pushing off the floor with an elbow; or (c) return to starting position, with *elbows flat on the surface*, before sitting up again.

SCORING

Record the number of correctly executed sit-ups the pupil is able to do in 60 seconds. A foul nullifies the count for that sit-up. The watch is started on the word "go" and stopped on the word "stop."

shuttle run

BOYS AND GIRLS

3

EQUIPMENT

Two blocks of wood, 2 inches x 2 inches x 4 inches, and stopwatch. Pupils should wear sneakers or run barefooted.

DESCRIPTION

Two parallel lines are marked on the floor 30 feet apart. The width of a regulation volleyball court serves as a suitable area. Place the blocks of wood behind one of the lines as indicated in FIGURE 7. The pupil starts from behind the other line. On the signal "Ready? Go!" the pupil runs to the blocks, picks one up, runs back to the starting line, and *places* the block behind the line; he then runs back and picks up the second block, which he carries back across the starting line. If the scorer has two stopwatches or one with a split-second timer, it is preferable to have two pupils running at the same time. To eliminate the necessity of returning the blocks after each race, start the races alternately, first from behind one line and then from behind the other.

RULES

Allow two trials with some rest between.

SCORING

Record the time of the better of the two trials to the nearest tenth of a second.

FIGURE 7
Starting the shuttle run.

standing long jump

BOYS AND GIRLS

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EQUIPMENT

Mat, floor, or outdoor jumping pit, and tape measure.

DESCRIPTION

Pupil stands as indicated in FIGURE 8, with the feet several inches apart and the toes just behind the takeoff line. Preparatory to jumping, the pupil swings the arms backward and bends the knees. The jump is accomplished by simultaneously extending the knees and swinging forward the arms.

RULES

1. Allow three trials.
2. Measure from the takeoff line to the heel or other part of the body that touches the floor nearest the takeoff line (FIGURE 8).
3. When the test is given indoors, it is convenient to tape the tape measure to the floor at right angles to the takeoff line and have the pupils jump along the tape. The scorer stands to the side and observes the mark to the nearest inch.

SCORING

Record the best of the three trials in feet and inches to the nearest inch.

FIGURE 8

Measuring the standing long jump.

EQUIPMENT

Two stopwatches or one with a split-second timer.

DESCRIPTION

It is preferable to administer this test to two pupils at a time. Have both take positions behind the starting line. The starter will use the commands "Are you ready?" and "Go!" The latter will be accompanied by a downward sweep of the starter's arm to give a visual signal to the timer, who stands at the finish line.

RULES

The score is the amount of time between the starter's signal and the instant the pupil crosses the finish line.

SCORING

Record in seconds to the nearest tenth of a second.

5

50-yard dash

BOYS AND GIRLS

FIGURE 9
Starting the 50-yard dash.

EQUIPMENT

Track or area marked according to FIGURES 11-13, and stopwatch.

DESCRIPTION

Pupil uses a standing start. At the signal "Ready? Go!" the pupil starts running the 600-yard distance. The running may be interspersed with walking. It is possible to have a dozen pupils run at one time by having the pupils pair off before the start of the event. Then each pupil listens for and remembers his partner's time as the latter crosses the finish. The timer merely calls out the times as the pupils cross the finish.

RULES

Walking is permitted, but the object is to cover the distance in the shortest possible time.

SCORING

Record in minutes and seconds.

6

600-yard run

BOYS AND GIRLS

Options:

Ages 10-12, 1-mile or 9-minute run

Ages 13 or older, 1½-mile or 12-minute run

FIGURE 12

Using any open area for 600-yard run

FIGURE 11

Using football field for 600-yard run

FIGURE 13

Using inside track for 600-yard run