Summer 1986

# A Measure of Student Attitude toward Physical Activity at Central Washington University

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# A MEASURE OF STUDENT ATTITUDE TOWARD PHYSICAL ACTIVITY AT CENTRAL WASHINGTON UNIVERSITY

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A Thesis

Presented to

The Graduate Faculty

Central Washington University

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In Partial Fulfillment

of the Requirements for the Degree

Master of Education

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by

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July, 1986

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The attitudes of students who were involved in service courses offered by the Physical Education Department of Central Washington University during the Winter Quarter of 1984 were given G. S. Kenyon's Attitude Toward Physical Activity inventory. The results showed that attitudes for male and female tested were similar within the six domains of the inventory, even though a wide variation of response was obtained in the individual domains by each sex group.

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# CHAPTER ONE

## Introduction

The current physical education classes offered to the students at Central Washington University cover five basic areas of activity: fitness, aquatics, dance, individual sports, and team sports. These activity areas provide the students with a wide range of choices in class selection necessary to fulfill academic and recreational needs.

The actual physical involvement necessary to complete the classes offered varies from ballroom dance to weight training courses and a variety of offerings for which certain levels of fitness and skill are deemed necessary. In all the classes the students must, for some reason, wish to attain some level of success, whether for a grade or for some personal gains in skill, fitness or knowledge. The large variety of classes makes it possible to study the part played by student attitude toward physical activity.

## Statement of the Problem

The problem which motivates the present study is to determine the attitudes held by Central Washington University students towards physical activity participation.

## Purpose of the Study

The first purpose of this study was to determine the relative positive or negative position along a seven-point

scale for each item of Kenyon's Attitude Toward Physical Activity instrument. The instrument was composed of six attitudinal domains, totaling 59 items for men and 54 items for women. The University's physical education service course curriculum was the subject of this student attitude survey. A second purpose was to test the hypothesis that no significant differences would occur between the sexes in the six domains of the two forms (M) and (W) of this attitude survey instrument. A third purpose was to test the significant difference between individual item means within each attitudinal domain for both men and women respondents.

These three purposes were designed to answer the following questions about the use of Kenyon's Attitude Toward Physical Activity instrument. First, what are the attitudes of men and women students toward physical activity? Second, are the sex differences in attitude a function of chance or are they genuine differences? Third, do individual items within an attitudinal domain differ from each other significantly or by chance?

## Limitations of the Study

This study was limited to students who were enrolled in ten or more credit hours during the Winter Quarter of 1984 at Central Washington University. No attempt was made to control outside influences that may have affected the way in which the students rated the items of the inventory.

## Assumptions of the Study

It was assumed that every student selected to take part in the research completed each statement honestly and without any reservation. It was originally assumed that the random sampling of students allowed for an adequate sampling of the entire student body at Central Washington University. However, of the 127 students selected only 56 completed the study.

## Definition of Terms

ATPA: For the purpose of this study, the Kenyon Attitude Toward Physical Activity Inventory will be referred to in the abbreviated form.

Attitude: "is a mental and neural state of readiness, organized through experience, exerting a directive or dynamic inference upon the individual response to all objects and situations with which it is related" (Rajecki 4).

Domains: The six classifications described by Kenyon that make up the physical activity realm. They are: The Social Experience, or physical activity, which is perceived as having social value; Health and Fitness, which are activities having the capacity to enhance personal health; The Pursuit of Vertigo, which are those activities that provide a thrill; The Aesthetic Experience, which are activities that are pleasing to the eye; Catharsis, which are those activities that provide a release of tension or

frustration; The Ascetic Experience, which are those sports conceived as providing competitive experience (Kenyon 566-74).

Hoyt Reliabilities: Reliabilities used by Kenyon in his original study. Hoyt's procedure estimates the reliability of a written test by analysis of variance.

$$\frac{R=MS\ subject - MS\ residual}{MS\ subjects}$$

MS subjects = mean square of the between subjects variance. MS residual = sums of squares of between item variance and between individual variance subtracted from sum of squares for total variance, divided by appropriate degrees of freedom (Safrit 105-6).

Likert Scale: A rating scale usually involving an expression of the individual agreement or disagreement with a series of affective statements (Safrit 192). For the purpose of this study, a seven-point scale was used moving from a strongly agree to a strongly disagree with four being an undecided or neutral score.

Student Sample: For the purpose of this study, all those full-time 56 students (27 male and 29 female) who, through a random selection, took an active part in this research.

# CHAPTER TWO

## Review of the Literature

J. B. Nash, in his work on physical education, felt that the total development of man as an individual is heavily dependent on those physical activities in which he chooses to participate. In his study, the physical activities chosen by the individual could be divided into four subsections of personal gain. The four subsections, as described by Nash, are: organic development, neuro-muscular development, interpretive development and emotional development (80-6).

It is the latter with which this research deals in the hope of uncovering student attitudes toward the physical activities offered by the University. A review of related literature was completed covering some of the past history of attitude research and the variety of research that has been completed in the physical education field. This review will therefore be divided into three sections; the first section will take a brief look into the historical past of attitude study and some of the prominent studies of this century. The second section will look at a variety of scales available to the physical educator, and the final section will review Kenyon's work and some studies based on the ATPA.

## The History of Attitude Studies

The investigation of attitude towards physical activity, sport and other areas of the educational field has been carried on for many years. A wide range of inventories has been administered to a wide assortment of groups, providing information from which a variety of inferences have been drawn over the years.

Gordon Allport, noted attitude researcher, referred to the importance of attitude research in this century by stating that the development of this type of study was, "the most indispensable concept in contemporary American social psychology. No term appears more frequently in experimental and theoretical literature" (Fishbein 1).

With this in mind, one can find the origins of attitude, or social psychology, can be traced to the times of Plato and Aristotle. However, the modern era originates in the late 1800's with the pioneers in the field being social psychologists Tarde, James, Lebon, Ross, and Tripplett. The earliest reference to the term "attitude" appeared in W. I. Thomas and F. Znaniecke's 1918 study, "The Polish Peasant in Europe and America." The first reference to attitude in a competitive setting appearing in a work completed by Tripplett in 1987 (Jahoda 18).

Social psychologist Thomas Ostrom suggests that the aforementioned period may have been the beginning of attitude research, but the most influential period in this field occurred in the decades of the 1930's and 1940's.

Ostrom explains that the events which affected the world during this time frame propelled a large variety of research that dealt with man's attitude towards his situation. He commented on this by saying:

> Despite the countervailing influences of the depression and the second world war, a number of influences combined to rapidly advance the understanding of the attitudinal processes during that twenty-year period, the establishment of social psychological theory and empirical techniques, the integrative influence of Allport's 1935 chapter, the solution of the measurement problem by Thurstone and others, and the application of attitude in the explaining of important social phenomena. (1)

Noted studies of this period described by Ostrom include: Allport's 1935 study on attitude change; the defining of social psychology by Lewin in the same year 1935; Newcomb's studies on attitude maintenance and change in 1943; Sherif and Cantril's studies on attitude formation in 1947; and, the measurement studies of Thurstone and Likert which were completed during this twenty-year span (1-28).

Probably the most influential of these studies was completed by L. L. Thurstone and Rensis Likert and dealt with the actual measurement of attitude. Instruments developed by these two have stood the test of time and are in wide use today. Attitude measure, in many cases, deals with a self report type of evaluation, regarding personal opinion towards a particular objective. Thurstone's and Likert's research dealt with the development of instrument using this format.

L. L. Thurstone was one of the earliest to devote considerable time to the measurement of an individual's attitude. He believed that before one could make advancement in the field, both the terms "opinion" and "attitude" must be defined. Opinion, he stated, was "a verbal expression of an attitude," and attitude was "the sum total of a man's inclinations and feelings, prejudices and bias" (Thurstone 45-46). The second phase of Thurstone's research dealt with the actual measurement of an individual attitude. On this problem, he stated that, "theorists and researchers agree that attitude possesses an affective quality which includes the property of directionality." It was this idea that one's attitude would show linear direction towards a positive or negative response to items of an instrument that led to his 1929 study with researcher E. J. Chave and the development of the modern day instruments used to measure attitude.

The Thurstone-Chave study of 1929 looked into the statements asked of an individual on a variety of attitude measuring instruments. The outcome of their work was a series of item related checks which researchers could use to correct future instruments used for attitude research (45-46).

Rensis Likert, like Thurstone, dedicated his studies to the actual scale used in measuring attitude. Likert felt that Thurstone's method of measuring was too complicated, and, in 1932, began a series of studies comparing a variety

of scales in the hope of improving on the scales that were available to the research field. Likert used a five-point scale which allowed the subject an opportunity to respond to statements on a scale which moved from positive to negative. The results of his study confirmed the reliability of a simplified instrument when compared with those developed by Chave-Thurstone showing a reliability coefficient of .88 (Likert 140-55).

Additional method studies by Seiler and Hough backed the findings of Likert by also comparing both methods. Their study showed "the Likert method was equal, or more reliable and equal and more valid than the Thurstone method." They also stated that

> the Likert method of scoring of any given number of items consistently produced more reliable results than the Thurstone method and it has been demonstrated that if one constructs and scores a scale by the Likert method, 20-25 items are usually enough to produce a reliability coefficient of .90 or more. (Summer 159-73)

## Inventories in Physical Education

The second phase of this literature review will deal with instruments designed to measure statements and group attitudes in physical education activity courses. The instruments cover a wide range of grade levels, from students in the junior high school to college men and women.

Physical Education Attitude Inventory

Carlos Wear developed the PEAI in an attempt to measure and group attitudes towards physical education by the use of a 120-item inventory. The validity of the instrument was compiled by correlating the scores of the PEAI with the self rating of students' general attitudes towards physical education activity courses. The coefficient of correlation between the inventory and the self rating was .80, indicating a substantial relationship between the students' "general" and "specific" attitudes towards physical education activity courses. Reliability of the inventory was determined by the split halves method with results of .96 and .98 when adjusted using the Spearman-Brown prophecy formula (114-26).

Wear later reduced the size of the original inventory from 120 items to 40 items which aided in the administration of the instrument without any serious loss of precision. Validity, determined against the self ratings, was .80 and reliability was .94 (Wear, Equivalent Form, 113-19).

M. K. Broer, using the Wear method in 1955 to assess the attitudes of college women, showed a reliability of .96 and validity, as determined by correlating the inventory scores with the self rating scale, was reported as .71 (15-27).

Wessel and Nelson in 1964, used the Wear method to again study college women. The results of their study

showed a correlation of inventory scores with the self rating at .81. The test retest resulted in an objectivity coefficient of .84 for the inventory and .81 for the self rating scale (562-69).

A study by Donald Campbell using the Wear method with college men showed no significant differences in the attitude of subgroups divided by size of high school attended by the subjects (456-62).

Edgington Attitude Scale

The Edgington Attitude Scale was designed to evaluate the attitudes towards physical education of high school aged boys. The scale contains 66 items, 34 of which are deemed to be negative and 32 of which are deemed to be positive.

Construct validity was determined in two ways: (1) through Likert's technique of internal consistency, and (2) through correlation between scores of 30 students and the rating of their attitudes by teachers. In the first instance, items were eliminated which did not show a difference of 1.5 between the highest and lowest ten percent in terms of the overall scores. This method assumes the validity of each inventory item, which served as a valid scale.

In the second instance, the respondents' teachers were asked to identify subjectively the 15 students with the most favorable attitudes and the 15 students with the most unfavorable attitudes. The observed scores of the

respondents were compared with the expected frequencies by means of chi-square, with a result level of significance of .01 (505-12).

Thurstone Scale of Attitude

Richardson constructed two equivalent forms of an equal appearing interval scale, each containing 19 items. Based upon the judgment of experts, the items were put into order from the least favorable to the most favorable, with the intervals between successive statements being of equal degree. The respondent circles the scale value for each of the statements with which there is agreement; the median of these scale values is designated as the respondent's score.

Based upon evidence of other studies, it was assumed that the experts were capable of making valid judgments of the favorable statements, independent of their own attitude towards physical education activities. Test retest showed a reliability coefficient of .83. Reliability, as estimated by correlating scores of 300 students on each of two forms, was .87 (638-43).

McPherson-Yuhasz Attitude Inventory

This 50-item inventory was designed to detect intensity of attitude of men towards exercise and physical activity. Validity was estimated by administering the inventory to two groups of teachers. The first group was made up of physical educators and were presumed to have a positive attitude

towards physical activities and exercise. The second group was made up of teachers in fields not related to physical activity and were perceived as not favoring physical activity. Test results detected significant differences between the mean scores of the two groups.

The reliability was estimated by administering the inventory twice to the group of physical education teachers. Coefficients yielded by the test retest and by corrected split halves for the two administrations were .95 and .81 (218-20).

### Physical Activity Attitude Inventory

Robert Sonstroem developed this 76-item inventory, which was designed to reflect one's estimation of one's ability to perform vigorous physical activity. It was also designed to measure one's attraction to the activity and how it affects the attraction to perform. No validity coefficient was given, but a factor analysis is reported to have identified one prominent psychological factor from the estimation subscale. A Kuder-Richardson reliability coefficient of .90 was computed. A low relationship of .21 was observed between estimation and self esteem (93-03).

### Physical Estimation and Attraction Scale

Sonstroem later reviewed the Physical Activity Attitude Scale. The new inventory contained 89 items, to be answered in a true-false manner to assess one's ability to perform in

vigorous physical activities. Validity coefficients between inventory scales and outside criteria ranged from -.46 to .00 to .90 (93-03).

## Kenyon's Attitude Toward Physical Activity

The final phase of this literature review will deal with the ATPA Inventory developed by Kenyon and the basis for this particular study. This section will also include some additional studies based on the ATPA and their conclusions.

The ATPA was designed by G. S. Kenyon to measure the attitudes of students toward physical activity by dividing the activities into six domains. These domains, as defined in Chapter One, are: the social experience, health and fitness, pursuit of vertigo, the aesthetic experience, catharsis, and the ascetic experience. Two forms were developed, one for college men (CM) and one for college women (CW) and consisted of a number of items in each subdomain which the students rated in a positive or negative manner (96-05).

The ATPA Inventory used a seven-point Likert-type rating scale, which moved from a Very Strongly Agree to a Very Strongly Disagree. Validity was estimated using the student's response preference (weak or strong) for the generalized physical activity as the criterion. Except for the catharsis scale, scores discriminated significantly between those with strong and weak preferences. It was

assumed that the stronger the preference, the more favorable the attitude.

Reliabilities were calculated for both the men and women with the maximum reliabilities found in the pursuit of vertigo for both groups (.89 men and .86 women) and the minimum reliability found in the area of the social experience (.72) for both groups. The reliabilities for the other four domains in Kenyon's original study are: Health and Fitness (.79 for men and .83 for women), the Aesthetic Experience (.82 men and women .87), Catharsis (.77 men and women .79), and the Ascetic Experience was (.81 men and .78 women) (Kenyon, Six Scales, 566-74).

Alderman, studying championship male and female athletes representing ten different sports using Kenyon's scale, reported that male and female athletes used in the study were very similar in their attitudes towards physical activity showing the highest response in the Aesthetic activities and the lowest in the Ascetic experiences. Hoyt reliabilities for this study ranged from .902 in the Vertigo subdomain to .798 in the Fitness area (1-9).

Simon and Smoll used a modified inventory based upon the Kenyon studies to test children (CATPA) and reported reliabilities of .80 for the social experience and the health fitness areas, and a reliability of .89 in the aesthetic area (407-15).

Linda Zaichkowsky used Kenyon's ATPA to help determine if differences in attitude existed between college students

who were active in foundation curriculum and life time sport curriculum. Zaichkowsky's study concluded that distinct differences existed between male and female no matter what curriculum the subject was active. She also concluded that foundation programs were not more effective in the development of a positive attitude towards activity than life time sport activities (364-70).

An additional study completed by the team of William Straub and Thomas Felock using Kenyon's research to determine the differences in delinquent and nondelinquent junior high school girls. Using a multiple discriminate function analysis at the .01 level found only a significant difference in the social domain, showing nondelinquent girls used physical activity as a social experience to interact with others. At the .05 level significant differences showed an overall difference towards physical activity between the two groups (21-27).

# CHAPTER THREE

## Administration of the ATPA

The first purpose of this study was to determine the relative position along a seven-point scale for each item of Kenyon's Attitude Toward Physical Activity (ATPA) instrument, among samples of Central Washington University men and women students.

A second purpose was to test the hypothesis that no significant differences exist between responses of males versus females in the six domains of the men's and women's forms of the ATPA. The third purpose was to test the significance of difference between individual item means within all attitudinal domains for both men and women students.

During the Winter Quarter of 1984, 795 students were enrolled in the Tuesday and Thursday activity courses offered by the University. Thirty-three percent were enrolled in the fitness area, 27.4 percent in individual and dual sports, 20.5 percent in team sports, and 18.3 percent in rhythm activities. For the study, a 16 percent sample was selected from the total enrollment, or 127 students. The planned sample was proportional to the percentage of the group in each of the activity areas. Note that no students were selected from the aquatic area as described in Chapter

One. This was due to the cancellation of these classes during the quarter data was collected because of the pool being closed for repair.

## The Method

For this study a stratified random sampling of the students enrolled in Central Washington University was used. It was specifically a stratified sample of students enrolled in the activity courses offered by the University on Tuesday and Thursday and students who were enrolled as full time (ten or more credits) and not involved in these activity areas. All the students were selected from the official enrollment sheets following the last day of "drop-add" as designated by the University.

The subjects were all randomly selected using the last two numbers of their student identification (Social Security) number, which has been randomly assigned by the federal government. The numbers used for the selection process ranged from 00 to 21. Of the total group selected from both the activity classes and the non-active students, 56 were actually willing to complete the requirements of the study.

## Administration of the Inventory

The students who agreed to complete the study were given Kenyon's Attitude Toward Physical Activity (ATPA) inventory to complete. Both forms, (M) for men, and (W) for women, can be found in the Appendix. Form (M) contains 59

items covering the six domains, form (W) contains 54 items. The students were asked to rate each of the items on a Likert-type seven-point scale with 1 being very strongly agreeing, and moving towards 7 which was a very strongly disagree response. A rating of 4 was undecided on the particular item.

The testing session was the first day following the last day of "add-drop" as decided by the University. The subjects, both male and female, were given the proper inventory form along with both written and verbal instructions on how to complete the inventory. They were then allowed to take the inventory with them to complete and return the following week. It must be noted that all the students completing the inventory were also involved in a number of physical and skills tests during this same session. A lack of participation at this session made it necessary to hold a second session five days later when the students could be drawn directly out of the classroom.

The completed ATPA inventories were machine scored by the Central Washington University Testing and Evaluation Office. The inventories were also hand scored to assure that no errors had been made. The Testing and Evaluation Office provided the group rating for each individual item on the inventory. Included were the mean ratings, the standard deviations, the minimum and maximum ratings and the percentage of group response at each rating level between 1 and 7.

## Statistical Analysis of the Data

Means and standard deviations were calculated for each item in each attitudinal domain for both men and women in order to determine relative positions along a seven-point Likert scale, item by item.

A *t*-test for significance of difference between item response means of men versus women was calculated for each of the attitudinal domains.

A one-way analysis of variance was calculated among all means for each sex and each of the attitude domains in order to determine the relative nature of attitude and the significance of difference in attitude between attitude domains.

Level of significance was specified as .05.

# CHAPTER FOUR

## Results of the Study

The first purpose of this research was to determine the nature of the attitude held by selected students of Central Washington University towards physical activity. The second purpose was to test the hypothesis that no significant differences would be found between the sexes in the six domains of attitude survey instrument. The third purpose was to test the significance between item means within all attitudinal domains, by sex, in order to determine significance of difference between response strengths within domains.

### Results of Male and Female Responses

Analysis of the data was performed on the results of the inventory ratings of 27 male students and 29 female students who completed forms (M) and (W) of the ATPA. The subjects selected for this research were all full-time students of Central Washington University at the time of the study.

The responses by the students were examined to determine the extent to which the students' attitudes were found to be positive or negative.

The first analysis of the data was a calculation of the means and standard deviations for each item and each domain,

for men and women separately. These data are presented and discussed in Tables 1 through 12 and the accompanying narrative that follows.

Social Domain

Social Domain refers to physical activities whose principal value is in the social experience which they engender. Kenyon refers to these as those "whose primary purpose is to provide a medium for social intercourse, i.e., to meet new people and to perpetuate existing relationships" (99).

Male. Ten statements comprised this domain of which four were negative. Means for each of the ten statements ranged from 4.04 to 5.11, standard deviations from .962 to 1.61 and coefficients of variation (V) from 23.76 to 34.77. The overall mean, standard deviation, and V were 4.65, 1.38 and 29.82, respectively. Thus, the central tendency for the responses in the social domain was "neutral," moving strongly towards choice #5, agree. The relatively large variability of response as noted by standard deviation greater than one indicates the variety of response value utilized by the participants. Inspection of Table 1 shows that about one-third of all respondents agree (#5), about 18 percent disagree (#3), and almost as many (N=45) are neutral (#4). Slightly smaller percentages of respondents very strongly agree (11.5 percent, #7) and strongly agree (14.5 percent, #6).

Table 1

Male Social Domain

| | VSA | | | | | | VSD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | M | $s$ | V |
| Item | | | | | | | | | | | |
| 07 | 2 | 4 | 9 | 7 | 3 | 1 | 1 | 27 | 4.56 | 1.37 | 30.04 |
| 17 | 4 | 7 | 11 | 1 | 2 | 1 | 1 | 27 | 5.11 | 1.45 | 26.91 |
| 20 | 2 | 4 | 8 | 8 | 3 | 1 | 1 | 27 | 4.52 | 1.37 | 30.31 |
| 26 | 2 | 3 | 11 | 4 | 4 | 1 | 0 | 27 | 4.56 | 1.26 | 27.63 |
| *30 | 5 | 4 | 11 | 2 | 3 | 1 | 1 | 27 | 4.96 | 1.53 | 30.85 |
| 34 | 4 | 4 | 11 | 2 | 5 | 1 | 0 | 27 | 4.89 | 1.37 | 28.02 |
| 44 | 5 | 4 | 6 | 1 | 10 | 1 | 0 | 27 | 4.63 | 1.61 | 34.77 |
| 48 | 0 | 1 | 9 | 8 | 8 | 1 | 0 | 27 | 4.04 | .962 | 23.76 |
| 52 | 4 | 3 | 6 | 7 | 7 | 6 | 0 | 27 | 4.56 | 1.50 | 32.89 |
| 56 | 3 | 5 | 9 | 5 | 3 | 1 | 1 | 27 | 4.74 | 1.46 | 30.80 |
| sum | 31 | 39 | 91 | 45 | 49 | 9 | 6 | 270 | 46.5 | 13.8 | |
| | | | | | | | | | 4.65 | 1.38 | 29.82 |

Note. N=10; 4 are negative.
*Negatively stated items are underlined.

Female. Eight statements comprised this domain of which three were negative. Means for each of the eight statements ranged from 3.76 to 5.11, standard deviations from .804 to 1.60 and coefficients of variation (V) from 16.66 to 35.37. The overall mean, standard deviation, and V were 4.60, 1.36 and 29.56, respectively. Thus, the central

tendency for the responses in the social domain was "neutral," moving strongly towards choice #5, agree. The relatively large variability of response as noted by standard deviation greater than one indicates the variety of response value utilized by the participants. Inspection of Table 2 shows that about 37 percent of all respondents agree (#5), about 19 percent disagree (#3) and almost 13 percent (N=30) are neutral (#4). Slightly smaller percentages of respondents very strongly agree (10 percent, #7) and strongly agree (19 percent, #6). The three statistics, Mean, Standard Deviation, and Variance are in very close agreement between the sexes on this domain.

Table 2

Female Social Domain

| | VSA | | | | | | VSD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | M | $\hat{s}$ | V |
| Item | | | | | | | | | | | |
| 11 | 1 | 3 | 11 | 5 | 6 | 1 | 2 | 29 | 4.21 | 1.42 | 33.72 |
| 17 | 6 | 6 | 11 | 5 | 6 | 1 | 2 | 29 | 5.11 | 1.60 | 31.31 |
| 20 | 6 | 4 | 8 | 5 | 5 | 1 | 0 | 29 | 4.93 | 1.46 | 29.61 |
| 25 | 3 | 1 | 11 | 3 | 10 | 1 | 0 | 29 | 4.35 | 1.35 | 31.03 |
| 29 | 3 | 6 | 11 | 2 | 4 | 2 | 1 | 29 | 4.72 | 1.53 | 32.41 |
| 33 | 4 | 6 | 11 | 3 | 3 | 2 | 0 | 29 | 4.97 | 1.38 | 27.77 |
| 39 | 0 | 3 | 6 | 7 | 9 | 2 | 2 | 29 | 3.76 | 1.33 | 35.37 |
| 49 | 1 | 4 | 16 | 4 | 4 | 0 | 0 | 29 | 4.80 | .804 | 16.66 |
| sum | 24 | 33 | 85 | 30 | 44 | 9 | 7 | 232 | 46.0 | 10.8 | |
| | | | | | | | | | 4.60 | 1.36 | 29.56 |

Note. N=8; 3 are negative.

Health/Fitness Domain

Health/fitness refers to those physical activities whose principal value is in the Health/Fitness experience which they engender. Kenyon refers to these as those activities "characterized primarily by its contribution to the improvement of one's health and fitness" (99).

Male. Ten statements comprised this domain of which four were negative. Means for each of the ten statements

ranged from 3.63 to 4.60, standard deviations from 1.13 to 1.64 and coefficients of variation (V) from 24.67 to 41.62. The overall mean, standard deviation, and V were 4.11, 1.38, and 33.49, respectively. Thus, the central tendency for the responses in the Health/Fitness domain was "neutral," very slightly towards choice #5, agree. The relatively large variability of response as noted by standard deviation greater than one indicates the variety of response value utilized by the participants. Inspection of Table 3 shows that about 25 percent of all respondents agree (#5), about 33 percent disagree (#3), and about 10 percent (N=26) are neutral (#4). Slightly smaller percentages of respondents very strongly agree, (4 percent, #7), and strongly agree (16 percent, #6). Respondents to the strongly disagree and very strongly disagree show percentages of about 7 percent and 4 percent, respectively.

Table 3

Male Health/Fitness Domain

| | VSA | | | | | | VSD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | M | $\hat{s}$ | V |
| Item | | | | | | | | | | | |
| 08 | 2 | 10 | 3 | 2 | 8 | 1 | 1 | 27 | 4.60 | 1.64 | 35.65 |
| 13 | 1 | 7 | 7 | 3 | 7 | 1 | 0 | 26* | 4.58 | 1.13 | 24.67 |
| 18 | 1 | 5 | 10 | 3 | 6 | 1 | 1 | 27 | 4.44 | 1.40 | 31.53 |
| 21 | 0 | 4 | 5 | 2 | 11 | 4 | 1 | 27 | 3.67 | 1.42 | 38.42 |
| 25 | 2 | 4 | 12 | 2 | 5 | 1 | 1 | 27 | 4.59 | 1.21 | 26.36 |
| 29 | 1 | 1 | 7 | 1 | 12 | 2 | 2 | 27 | 3.63 | 1.42 | 39.12 |
| 36 | 0 | 2 | 8 | 2 | 11 | 3 | 1 | 27 | 3.70 | 1.30 | 35.13 |
| 38 | 1 | 1 | 6 | 4 | 12 | 2 | 1 | 27 | 3.67 | 1.25 | 34.06 |
| 41 | 2 | 8 | 5 | 3 | 7 | 2 | 0 | 27 | 4.59 | 1.50 | 32.68 |
| 55 | 2 | 2 | 4 | 3 | 11 | 4 | 1 | 27 | 3.70 | 1.54 | 41.62 |
| sum | 12 | 44 | 67 | 26 | 90 | 21 | 9 | 269 | 41.1 | 13.8 | |
| | | | | | | | | | 4.11 | 1.38 | 33.49 |

Note. N=10; 4 are negative.
*One subject did not respond.

Female. Eleven statements comprised this domain of which four were negative. Means for each of the ten statements ranged from 3.52 to 5.52, standard deviations from .895 to 1.75, and coefficients of variation (V) from 16.30 to 43.75. The overall mean, standard deviation, and V were 4.48, 1.36, and 30.29, respectively. Thus, the central

tendency for the responses in the Health/Fitness domain was "neutral," moving moderately towards choice #5, agree. The relatively large variability of response as noted by standard deviation greater than one indicates the variety of response value utilized by the participants. Inspection of Table 4 shows that about 37 percent of all respondents agree (#5), about 18 percent disagree (#3) and 12 percent of the respondents (N=37) are neutral (#4). Slightly smaller percentages of respondents very strongly agree (9 percent, #7), and strongly agree (14 percent, #6). It appears that these female students were slightly more positive in their affinity to Health and Fitness than the males and their relative variability was slightly less, i.e., they were more closely packed around the mean than the males.

Table 4

Female Health/Fitness Domain

| | VSA | | | | | | VSD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | M | $\sigma$ | V |
| Item | | | | | | | | | | | |
| 04 | 3 | 4 | 8 | 6 | 4 | 1 | 3 | 29 | 4.34 | 1.35 | 31.11 |
| 06 | 4 | 2 | 16 | 3 | 3 | 1 | 0 | 29 | 4.93 | 1.20 | 24.34 |
| 10 | 6 | 5 | 3 | 6 | 6 | 2 | 1 | 29 | 4.62 | 1.75 | 37.88 |
| 15 | 4 | 10 | 13 | 1 | 1 | 0 | 0 | 29 | 5.52 | .895 | 16.30 |
| 18 | 5 | 3 | 14 | 3 | 3 | 1 | 0 | 29 | 5.03 | 1.27 | 25.25 |
| 23 | 2 | 4 | 7 | 3 | 10 | 2 | 1 | 29 | 4.14 | 1.53 | 36.71 |
| 27 | 3 | 4 | 16 | 1 | 2 | 2 | 1 | 29 | 4.83 | 1.26 | 26.09 |
| 32 | 0 | 5 | 6 | 2 | 13 | 2 | 1 | 29 | 3.86 | 1.38 | 43.52 |
| 36 | 0 | 1 | 11 | 3 | 5 | 5 | 4 | 29 | 3.52 | 1.55 | 43.75 |
| 40 | 2 | 4 | 11 | 1 | 8 | 2 | 1 | 29 | 4.34 | 1.52 | 35.02 |
| 47 | 0 | 3 | 12 | 8 | 2 | 3 | 1 | 29 | 4.24 | 1.25 | 29.48 |
| sum | 29 | 45 | 117 | 37 | 57 | 21 | 13 | 319 | 44.8 | 14.9 | |
| | | | | | | | | | 4.48 | 1.49 | 30.29 |

Note. N=11; 4 are negative.

Vertigo Domain

Vertigo domain refers to those activities whose principal value is in the vertigo experience which they engender. Kenyon refers to these as

> those physical experiences providing, at some risk to the participant, an element of thrill through the medium of speed, acceleration, sudden change of

> direction, or exposure to dangerous situations, with the participant usually remaining in control. (100)

Male. Ten statements comprised this domain of which four were negative. Means for each of the ten statements ranged from 3.93 to 4.93, standard deviations from 1.08 to 1.94, and coefficients of variation (V) from 10.51 to 50.26. The overall mean, standard deviation, and V were 4.39, 1.45, and 32.95, respectively. Thus, the central tendency for the responses in the vertigo domain was "neutral," with some tendency towards choice #5, agree. The relatively large variability of response as noted by standard deviation greater than one indicates the variety of response value utilized by the participants. Inspection of Table 5 shows that about one-third of all respondents agree (#5), about 22 percent disagree (#3), and only 12 percent of the respondents (N=32) are neutral (#4). Slightly smaller percentages of respondents very strongly agree (9 percent, #7) and strongly agree (15 percent, #6).

Table 5

Male Vertigo Domain

| | VSA | | | | | | VSD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | M | $\sigma$ | V |
| Item | | | | | | | | | | | |
| 02 | 4 | 4 | 7 | 4 | 2 | 5 | 1 | 27 | 4.44 | 1.77 | 39.86 |
| 06 | 3 | 2 | 7 | 1 | 8 | 4 | 2 | 27 | 3.93 | 1.76 | 44.78 |
| 09 | 3 | 7 | 6 | 2 | 5 | 3 | 1 | 27 | 4.56 | 1.68 | 25.66 |
| 16 | 2 | 6 | 11 | 1 | 6 | 0 | 1 | 27 | 4.74 | 1.94 | 40.72 |
| 22 | 2 | 4 | 10 | 1 | 6 | 3 | 1 | 27 | 4.33 | 1.59 | 36.72 |
| 28 | 1 | 5 | 7 | 6 | 6 | 2 | 0 | 27 | 4.30 | 1.08 | 25.12 |
| 42 | 3 | 4 | 12 | 4 | 4 | 0 | 0 | 27 | 4.93 | 1.15 | 23.33 |
| 46 | 3 | 2 | 11 | 4 | 6 | 1 | 0 | 27 | 4.59 | 1.31 | 28.54 |
| 53 | 1 | 4 | 8 | 2 | 9 | 2 | 1 | 27 | 4.11 | 1.47 | 35.76 |
| 58 | 1 | 2 | 7 | 7 | 8 | 1 | 1 | 27 | 4.04 | 1.29 | 31.93 |
| sum | 23 | 40 | 86 | 32 | 60 | 21 | 8 | 270 | 43.9 | 14.5 | |
| | | | | | | | | | 4.39 | 1.45 | 32.95 |

Note. N=10; 4 are negative.

Female. Nine statements comprised this domain of which four were negative. Means for each of the ten statements ranged from 4.21 to 5.69, standard deviations from .995 to 2.67, and coefficients of variation (V) from 20.88 to 46.92. The overall mean, standard deviation, and V were 4.77, 1.47, and 30.75, respectively. Thus, the central tendency for the responses in the vertigo domain was "neutral," moving

strongly towards choice #5, agree. The relatively large variability of response as noted by standard deviation greater than one indicates the variety of response value utilized by the participants.

Inspection of Table 6 shows that about 37 percent of all respondents agree (#5), about 18 percent disagree (#3) and 14 percent of the respondents (N=36) are neutral (#4). Slightly smaller percentages of respondents very strongly agree (7 percent, #7) and strongly agree shows about 18 percent (#6). Compared with the males, the females tended to be more strongly in agreement, with slightly lesser relative variability.

Table 6

Female Vertigo Domain

| | VSA | | | | | | VSD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | M | $\sigma$ | V |
| Item | | | | | | | | | | | |
| 01 | 2 | 12 | 8 | 5 | 0 | 1 | 1 | 29 | 5.14 | 1.30 | 25.29 |
| 07 | 4 | 7 | 10 | 2 | 3 | 3 | 0 | 29 | 4.93 | 1.48 | 30.02 |
| 13 | 5 | 6 | 7 | 2 | 7 | 1 | 1 | 29 | 4.76 | 1.65 | 34.66 |
| 22 | 5 | 2 | 13 | 2 | 6 | 0 | 1 | 29 | 5.69 | 2.67 | 46.92 |
| 28 | 3 | 4 | 6 | 8 | 6 | 0 | 2 | 29 | 4.36 | 1.54 | 35.32 |
| 38 | 2 | 4 | 11 | 3 | 9 | 0 | 0 | 29 | 4.55 | 1.25 | 28.74 |
| 42 | 1 | 4 | 17 | 2 | 5 | 0 | 0 | 29 | 4.79 | .995 | 20.88 |
| 50 | 0 | 5 | 8 | 6 | 8 | 2 | 0 | 29 | 4.21 | 1.21 | 28.74 |
| 53 | 1 | 2 | 15 | 6 | 3 | 2 | 0 | 29 | 4.52 | 1.10 | 24.55 |
| sum | 23 | 46 | 95 | 36 | 47 | 9 | 5 | 261 | 43.0 | 13.2 | |
| | | | | | | | | | 4.77 | 1.47 | 30.75 |

Note. N=9; 4 are negative.

Aesthetic Domain

Aesthetic domain refers to those physical activities whose principal value is in the aesthetic experience which they engender. Kenyon refers to these as those activities "having aesthetic value for the individual, that is activities are conceived of as possessing beauty or certain artistic qualities" (100).

Male. Ten statements comprised this domain of which five were negative. Means for each of the ten statements ranged from 3.33 to 4.30, standard deviations from .744 to 1.94, and coefficients of variation (V) from 10.51 to 50.26. The overall mean, standard deviation, and V were 3.84, 1.39, and 36.10, respectively. Thus, the central tendency for the responses in the Aesthetic domain was "disagree," moving towards choice #4, neutral. The relatively large variability of response as noted by standard deviation greater than one the variety of response value utilized by the participants. Inspection of Table 7 shows that about one-third of all respondents disagree (#3), about 26 percent agree (#5) and almost 13 percent (N=34) are neutral (#4). Smaller percentages of respondents strongly disagree (12 percent, #2) and strongly agree (8.5 percent, #6).

Table 7

Male Aesthetic Domain

| | VSA | | | | | | VSD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | M | $s$ | V |
| Item | | | | | | | | | | | |
| 03 | 3 | 2 | 7 | 3 | 9 | 2 | 1 | 27 | 4.15 | 1.58 | 38.07 |
| 11 | 1 | 5 | 4 | 4 | 11 | 1 | 1 | 27 | 4.04 | .744 | 10.51 |
| 14 | 0 | 0 | 6 | 5 | 9 | 6 | 1 | 27 | 3.33 | 1.15 | 34.53 |
| 19 | 0 | 4 | 6 | 5 | 7 | 4 | 1 | 27 | 3.86 | 1.94 | 50.26 |
| 32 | 0 | 0 | 7 | 6 | 12 | 1 | 1 | 27 | 3.63 | 1.03 | 28.37 |
| 35 | 0 | 1 | 12 | 3 | 6 | 3 | 2 | 27 | 3.85 | 1.38 | 35.84 |
| 39 | 2 | 3 | 11 | 1 | 6 | 3 | 1 | 27 | 4.30 | 1.56 | 36.28 |
| 45 | 3 | 3 | 3 | 2 | 10 | 4 | 2 | 27 | 3.78 | 1.77 | 46.82 |
| 47 | 0 | 3 | 9 | 0 | 8 | 5 | 2 | 27 | 3.67 | 1.54 | 41.96 |
| 50 | 1 | 2 | 5 | 5 | 11 | 3 | 0 | 27 | 3.82 | 1.28 | 33.51 |
| sum | 10 | 23 | 70 | 34 | 89 | 32 | 12 | 270 | 38.4 | 13.9 | |
| | | | | | | | | | 3.84 | 1.39 | 36.10 |

Note. N=10; 5 are negative.

Female. Nine statements comprised this domain of which two were negative. Means for each of the nine statements ranged from 3.62 to 4.52, standard deviations from 1.13 to 1.57, and coefficients of variation (V) from 25.62 to 39.50. The overall mean, standard deviation, and V were 4.08, 1.34, and 32.76, respectively. Thus, the central tendency for the responses in the Aesthetic domain was "neutral," very

slightly moving towards choice #5, agree. The relatively large variability of response as noted by standard deviation greater than one indicates the variety of response value utilized by the participants. Inspection of Table 8 shows that about 31 percent of all respondents agree (#5), about 28 percent disagree (#3) and almost 15 percent (N=39) are neutral (#4). Slightly smaller percentages of respondents strongly agree (7.2 percent, #7) and strongly disagree (12.2 percent, #2). Consequently, the women were considerably more aesthetic with less variability than the men.

Table 8

Female Aesthetic Domain

| | VSA | | | | | | VSD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | M | $\sigma$ | V |
| Item | | | | | | | | | | | |
| 03 | 1 | 2 | 6 | 8 | 9 | 3 | 0 | 29 | 3.94 | 1.23 | 31.22 |
| 08 | 1 | 0 | 11 | 0 | 10 | 6 | 1 | 29 | 3.62 | 1.43 | 39.50 |
| 14 | 0 | 3 | 8 | 3 | 7 | 8 | 0 | 29 | 3.70 | 1.24 | 33.51 |
| 19 | 2 | 3 | 13 | 3 | 4 | 3 | 1 | 29 | 4.41 | 1.48 | 33.56 |
| 30 | 2 | 2 | 10 | 5 | 7 | 3 | 0 | 29 | 4.24 | 1.36 | 32.08 |
| 35 | 2 | 4 | 5 | 6 | 10 | 2 | 0 | 29 | 4.17 | 1.39 | 33.33 |
| 41 | 1 | 3 | 12 | 4 | 9 | 0 | 0 | 29 | 4.41 | 1.31 | 25.62 |
| 45 | 2 | 0 | 5 | 7 | 13 | 2 | 0 | 29 | 3.79 | 1.21 | 31.92 |
| 48 | 4 | 2 | 12 | 3 | 3 | 5 | 0 | 29 | 4.52 | 1.57 | 34.73 |
| sum | 15 | 19 | 82 | 39 | 72 | 32 | 2 | 261 | 36.8 | 12.0 | |
| | | | | | | | | | 4.08 | 1.34 | 32.76 |

Note. N=9; 2 are negative.

Catharsis Domain

Catharsis domain refers to those physical activities whose principal value is in the catharsis experience which they engender. Kenyon refers to these as those that "are perceived as providing a release of tension precipitated by frustration through some vicarious means" (100).

Male. Nine statements comprised this domain of which four were negative. Means for each of the nine statements ranged from 3.41 to 4.89, standard deviations from .818 to 1.91, and coefficients of variation (V) relative from 17.56 to 46.92. The overall mean, standard deviation, and V were 4.46, 1.44, and 32.06, respectively. Thus, the central tendency for the responses in the Catharsis domain was "neutral," moving somewhat towards choice #5, agree. The relatively large variability of response as noted by standard deviation greater than one indicates the variety of response value utilized by the participants. Inspection of Table 9 shows that about 32 percent of all respondents agree (#5), about 17 percent disagree (#3) and about 14 percent (N=32) are neutral (#4). Slightly smaller percentages of respondents very strongly agree (9 percent, #7) and strongly agree (17 percent, #6).

Table 9

Male Catharsis Domain

| | VSA | | | | | | VSD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | M | $\hat{d}$ | V |
| Item | | | | | | | | | | | |
| 05 | 5 | 5 | 8 | 1 | 2 | 4 | 2 | 27 | 4.63 | 1.91 | 41.25 |
| 12 | 3 | 7 | 8 | 2 | 3 | 1 | 3 | 27 | 4.63 | 1.79 | 38.66 |
| 15 | 3 | 5 | 8 | 5 | 4 | 1 | 1 | 27 | 4.67 | .818 | 17.56 |
| 23 | 2 | 1 | 10 | 6 | 5 | 2 | 1 | 27 | 4.22 | 1.40 | 33.18 |
| 27 | 2 | 7 | 10 | 3 | 4 | 1 | 0 | 27 | 4.89 | 1.26 | 25.77 |
| 33 | 4 | 4 | 11 | 2 | 5 | 1 | 0 | 27 | 4.89 | 1.37 | 28.02 |
| 43 | 2 | 3 | 8 | 7 | 4 | 3 | 0 | 27 | 4.37 | 1.36 | 31.12 |
| 54 | 2 | 3 | 11 | 3 | 6 | 1 | 1 | 27 | 4.44 | 1.42 | 31.98 |
| 59 | 1 | 3 | 3 | 3 | 8 | 7 | 2 | 27 | 3.41 | 1.60 | 46.92 |
| sum | 24 | 38 | 77 | 32 | 41 | 21 | 10 | 243 | 40.1 | 14.3 | |
| | | | | | | | | | 4.46 | 1.43 | 32.06 |

Note. N=9; 4 are negative.

Female. Nine statements comprised this domain of which four were negative. Means for each of the nine statements ranged from 4.00 to 5.07, standard deviations from .674 to 1.58, and coefficients of variation (V) from 15.76 to 36.58. The overall mean, standard deviation, and V were 4.47, 1.29, and 28.86, respectively. Thus, the central tendency for the responses in the Catharsis domain was "neutral," moving moderately towards choice #5, agree. The relatively large

variability of response as noted by standard deviation greater than one indicates the variety of response value utilized by the participants. Inspection of Table 10 shows that about one-third of all respondents agree (#5), about 28 percent disagree (#3) and 12 percent of the respondents (N=34) are neutral (#4). Slightly smaller percentages of respondents very strongly agree (8.8 percent, #7) and strongly agree (11.9 percent, #6). Men and women were virtually identical in mean responses, their variability was greatly similar and the coefficient of variation was slightly smaller among the female respondents.

Table 10

Female Catharsis Domain

| | VSA | | | | | | VSD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | M | $s$ | V |
| Item | | | | | | | | | | | |
| 12 | 5 | 8 | 7 | 3 | 4 | 1 | 1 | 29 | 5.00 | 1.58 | 31.60 |
| 16 | 2 | 4 | 11 | 6 | 6 | 0 | 0 | 29 | 4.66 | 1.16 | 24.89 |
| 21 | 7 | 1 | 14 | 1 | 6 | 0 | 0 | 29 | 5.07 | 1.36 | 26.82 |
| 26 | 4 | 8 | 8 | 2 | 4 | 2 | 1 | 29 | 4.86 | 1.61 | 33.12 |
| 31 | 3 | 2 | 9 | 3 | 9 | 2 | 1 | 29 | 4.21 | 1.54 | 36.58 |
| 37 | 0 | 4 | 8 | 4 | 11 | 2 | 0 | 29 | 4.03 | 1.22 | 30.27 |
| 44 | 0 | 3 | 11 | 3 | 11 | 1 | 0 | 29 | 4.14 | 1.14 | 27.53 |
| 51 | 2 | 1 | 7 | 7 | 9 | 3 | 0 | 29 | 4.00 | 1.31 | 32.83 |
| 54 | 0 | 2 | 12 | 5 | 9 | 0 | 0 | 28* | 4.25 | .674 | 15.76 |
| sum | 23 | 33 | 87 | 34 | 69 | 11 | 3 | 260 | 40.2 | 11.6 | |
| | | | | | | | | | 4.47 | 1.29 | 28.86 |

Note. N=9; 4 are negative.
*One subject did not respond.

Ascetic Domain

Ascetic domain refers to those physical activities whose principal value is in the ascetic experience which they engender. Kenyon refers to these as those forms of physical activity as a "competitive experience-physical activity that involves long strenuous and often painful

training and stiff competition demanding a deferment of many gratification" (101).

Male. Ten statements comprised this domain of which six were negative. Means for each of the ten statements ranged from 2.95 to 4.74, standard deviations from .975 to 2.25, and coefficients of variation (V) relative variability from 21.88 to 63.90. The overall mean, standard deviation, and V were 3.85, 1.53, and 40.00, respectively. Thus, the central tendency for the responses in the Ascetic domain was "disagree," moving strongly towards choice #4, "neutral." The relatively large variability of response as noted by standard deviation greater than one indicates the variety of response value utilized by the participants. Inspection of Table 11 shows that about 27 percent of all respondents disagree (#3), about 24 percent agree (#5) and about 13 percent (N=34) are neutral (#4); almost the same number strongly agree.

Table 11

Male Ascetic Domain

| | VSA | | | | | | VSD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | M | $\sigma$ | V |
| Item | | | | | | | | | | | |
| 01 | 4 | 6 | 7 | 4 | 3 | 1 | 2 | 27 | 4.74 | 1.69 | 35.65 |
| 04 | 4 | 3 | 9 | 3 | 7 | 1 | 0 | 27 | 4.67 | 1.44 | 30.84 |
| 10 | 2 | 5 | 9 | 2 | 7 | 1 | 1 | 27 | 4.48 | .975 | 21.88 |
| 24 | 1 | 3 | 4 | 3 | 8 | 6 | 2 | 27 | 3.52 | 1.60 | 45.45 |
| 31 | 0 | 2 | 6 | 2 | 5 | 5 | 7 | 27 | 3.07 | 1.68 | 55.04 |
| 37 | 1 | 5 | 4 | 2 | 11 | 3 | 1 | 27 | 3.89 | 1.55 | 39.85 |
| 40 | 1 | 6 | 10 | 2 | 4 | 2 | 2 | 27 | 4.41 | 1.59 | 36.05 |
| 49 | 2 | 1 | 2 | 1 | 14 | 4 | 3 | 27 | 3.22 | 1.55 | 48.14 |
| 51 | 1 | 1 | 4 | 12 | 7 | 2 | 0 | 27 | 2.95 | 1.05 | 35.59 |
| 57 | 1 | 0 | 9 | 3 | 7 | 3 | 4 | 27 | 3.52 | 2.25 | 63.90 |
| sum | 17 | 32 | 64 | 34 | 73 | 28 | 22 | 270 | 38.5 | 15.3 | |
| | | | | | | | | | 3.85 | 1.53 | 40.00 |

Note. N=10; 6 are negative.

Female. Eight statements comprised this domain of which five were negative. Means for each of the eight statements ranged from 3.17 to 5.00, standard deviations from 1.37 to 2.57, and coefficients of variation (V) from 33.33 to 53.05. The overall mean, standard deviation, and V were 3.83, 1.64 and 42.81, respectively. Thus, the central tendency for the responses in the Ascetic domain was

"disagree," moving strongly towards choice #4, neutral. The relatively large variability of response as noted by standard deviation greater than one indicates the variety of response value utilized by the participants.

Inspection of Table 12 shows that about 21 percent of all respondents agree (#5), about 25 percent disagree (#3) and about 11 percent (N=26) are neutral (#4); almost an equal number strongly agree and more than 16 percent strongly disagree. Among both sexes the willingness to involve oneself in "long strenuous and often painful training" as described by Kenyon does not seem to appeal to these men and women who seem to be in considerable agreement in their perception of the ascetic domain.

Table 12

Female Ascetic Domain

| | VSA | | | | | | VSD | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | N | M | $s$ | V |
| Item | | | | | | | | | | | |
| 02 | 6 | 3 | 7 | 6 | 3 | 3 | 2 | 29 | 4.65 | 1.71 | 36.77 |
| 05 | 4 | 9 | 8 | 3 | 2 | 2 | 1 | 29 | 5.00 | 2.57 | 51.40 |
| 09 | 3 | 1 | 2 | 4 | 7 | 9 | 3 | 29 | 3.28 | 1.74 | 53.05 |
| 24 | 1 | 1 | 3 | 1 | 7 | 10 | 6 | 29 | 2.73 | 1.42 | 52.01 |
| 34 | 1 | 3 | 6 | 3 | 13 | 2 | 1 | 29 | 4.17 | 1.39 | 33.33 |
| 43 | 0 | 1 | 8 | 4 | 9 | 3 | 4 | 29 | 3.40 | 1.43 | 42.06 |
| 46 | 1 | 4 | 11 | 2 | 7 | 3 | 1 | 29 | 4.21 | 1.47 | 34.91 |
| 52 | 0 | 2 | 4 | 3 | 11 | 6 | 3 | 29 | 3.17 | 1.37 | 43.22 |
| sum | 16 | 24 | 49 | 26 | 59 | 38 | 20 | 232 | 30.6 | 13.1 | |
| | | | | | | | | | 3.83 | 1.64 | 42.81 |

Note. N=8; 5 are negative.

Table 13 presents a summary of the pertinent statistics from Tables 1 through 12. As would be expected, all the means tend towards the center of the scoring scale, but at the same time the standard deviation indicates wide variability around the means, for both sexes. Coefficients of variation, indicating relative variability and equating this relative variability between the sexes and domains, are quite high indicating wide variation within each sex for

each domain, but the two sexes appear to score similarly in relative variability.

Table 13

Summary of Means, Standard Deviations and Coefficients of Variation for the Six Attitudinal Domains: Men and Women

| M | Social | F | M | H&F | F | M | Vertigo | F |
|---|---|---|---|---|---|---|---|---|
| 4.65 | M | 4.60 | 4.11 | M | 4.48 | 4.39 | M | 4.77 |
| 1.38 | SD | 1.36 | 1.38 | SD | 1.49 | 1.45 | SD | 1.47 |
| 29.83 | V | 29.56 | 33.49 | V | 30.29 | 32.95 | V | 30.75 |
| | Aesthetic | | | Catharsis | | | Ascetic | |
| 3.84 | M | 4.08 | 4.46 | M | 4.47 | 3.85 | M | 3.83 |
| 1.34 | SD | 1.34 | 1.43 | SD | 1.29 | 1.53 | SD | 1.64 |
| 36.10 | V | 32.76 | 32.06 | V | 28.86 | 40.00 | V | 42.81 |

Note. M=Male; F=Female.

The second purpose of this study was to determine the significance of difference between means of response for each of the attitudinal domains, for men versus women. The *t*-ratio used applied to independent groups, with alpha levels set at .05. Table 14 presents these data.

Table 14

*t*-ratios for Two Independent Groups for All Domains of the ATPA

| Mean X | Mean Y | Mean Dif. | S.D. X | S.D. Y | d.f. | *t* |
|---|---|---|---|---|---|---|
| **Social Domain** | | | | | | |
| 4.65 | 4.60 | 0.05 | .295 | .459 | 54 | 0.284 |
| **Health/Fitness** | | | | | | |
| 4.11 | 4.48 | 0.37 | .469 | .569 | 54 | 1.610 |
| **Vertigo** | | | | | | |
| 4.39 | 4.77 | 0.38 | .317 | .447 | 54 | 2.120* |
| **Aesthetic** | | | | | | |
| 3.84 | 4.08 | 0.24 | .276 | .336 | 54 | 1.750 |
| **Catharsis** | | | | | | |
| 4.46 | 4.47 | 0.01 | .452 | .428 | 54 | 0.374 |
| **Ascetic** | | | | | | |
| 3.85 | 3.83 | 0.02 | .684 | .796 | 54 | 0.060 |

Note. X=male, Y=female.
*Denotes a significant difference at the .05 level which is 2.00 for 54 degrees of freedom.

The results of this *t*-test for two independent groups shows no significant difference between the groups tested in five of the six of the individual domains at the .05 level. The only domain showing a significant difference between the sexes is in the domain of Vertigo in which the female group scored significantly higher, that is, more toward the positive side of the scale. The reason for the differences

between the sexes has not been determined by this study. The results in general suggest that similar attitudes exist among the two groups tested.

The third purpose of the study was to determine the extent to which differences between individual items written as attitudinal domain were significant or chance-related, for each of the sexes. In order to determine this a one-way analysis of variance was calculated for the significance of difference between item means for all of the questions which separately comprised each of the six attitudinal domains for men and for women. Tables 15 and 16 summarize these analyses for men and women, respectively.

Table 15

Significance of Difference Between Individual Item Means within Each of the Six Attitudinal Domains in Kenyon's ATPA
Men

| Source of Variation | d.f. | Sum of Squares | Mean Squares |
|---|---|---|---|
| Between Groups | 5 | 5.664 | 1.132 |
| Within Groups | 53 | 10.214 | .193 |
| Total | 58 | 15.878 | ----- |

$$\underline{F}=\frac{1.132}{.193}=5.87^{*}, \qquad d.f.=5/53$$

*To be significant at .01 and/or .05, for 5/53 degrees of freedom, $\underline{F}$ must be 2.37 and 3.34, respectively.

Table 16

Significance of Difference Between Individual Item Means within Each of the Six Attitudinal Domains in Kenyon's ATPA
Women

| Source of Variation | d.f. | Sum of Squares | Mean Squares |
|---|---|---|---|
| Between Groups | 5 | 5.208 | 1.0405 |
| Within Groups | 48 | 13.135 | .2736 |
| Total | 53 | 18.343 | ------ |

$$F=\frac{1.041}{.27}=3.799^{*}, \qquad d.f.=5/48$$

*To be significant at .01 and/or .05, for 5/48 d.f., $F$ must be 2.40 and 3.40, respectively.

As Tables 15 and 16 indicate, the $F$ ratio in the case of both men and women, 5.87 and 3.80, were significant beyond the response items within domains and sexes were significant rather than chance-related. The answer as to which were not was sought by applying the Scheffe procedure as a test of all comparisons between means. Roscoe (238-242) presents a comprehensive argument supporting the choice of the Scheffe technique for multiple comparisons between means.

The Scheffe procedure is rather simply calculated and is referred to the same region of rejection (.05 here) as that specified for the overall test of equal means (the original $F$ ratio).

The formula for the Scheffe calculation is as follows:

$$F=\frac{(M_1 - M_2)^2}{MSw\left(\frac{1}{n_1}, \frac{1}{n_2}\right)(k-1)} \qquad \text{with d.f.}=k-1,\ N-k$$

where: M and M are the two means.

MSw = mean square within groups from the original analysis of variance.

$n_1$ & $n_2$ = the sample sizes.

k = number of groups compared.

For all calculations within each sex, mean square within (MSw) from the original analysis of variance remains the same--it is therefore a term with a constant value. In like manner so is k, the number of domains, the same number for both sexes. Within each domain for each of the sexes, $n_1$ and $n_2$ are constant values. Thus, the only variable portion of the Scheffe formula is the numerator, $(M_1 - M_2)$. Since every difference between means will be divided by the same relationship among three constants it is easy to calculate the minimum value which would acceptably meet significance at the .05 level.

For males, where n=10, the minimum significant difference between $M_1$ and $M_2$ was .68, for significance at the .05 level. Where n=9, minimum significant difference was .71. For women, where n=8, minimum significant difference was .90; where n=11, the minimum significant difference was .77 and for n=9 the minimum was .85.

The number of items per domain for men and women were 8, 9, 10, and 11 through all domains. If all possible differences were to have been found for each of the above numbers of items, these possible differences would conform to the formula $\frac{n(n-1)}{2}$. Thus, for 8 items all possible differences would equal 28. For 9 items this becomes 36; for 10 it is 45 and for 11, 55.

For each domain and each sex, the means of the individual test items were rank-ordered high to low and differences calculated. The Scheffe test was calculated for the greatest difference, then the next greatest difference, etc., until differences were too small to produce significance. In the tables which follow, the means are shown by rank-order, the differences between mean pairs, the F ratio and significance level.

Table 17

Multiple Comparisons Between Individual Item Means within Attitudinal Domains for Men

Social Domain

| Item Mean | Comparisons | Differences | F | P |
|---|---|---|---|---|
| 5.11 | 1 vs 10 | 1.07 | 5.94 | .01 |
| 4.96 | 2 vs 10 | .92 | 4.39 | .01 |
| 4.89 | 3 vs 10 | .85 | 3.75 | .01 |
| 4.74 | 4 vs 10 | .70 | 2.54 | .05 |
| 4.63 | | | | |
| 4.56(3) | 4 significant differences out of | | | |
| 4.52 | a possible 45 | | | |
| 4.04 | | | | |

Health and Fitness Domain

| Item Mean | Comparison | Differences | F | P |
|---|---|---|---|---|
| 4.60 | 1 vs 10 | .97 | 4.88 | .01 |
| 4.59(2) | 2-3 vs 10 | .96 | 4.78 | .01 |
| 4.58 | 4 vs 10 | .95 | 4.68 | .01 |
| 4.44 | 5 vs 10 | .82 | 3.40 | .01 |
| 3.70(2) | 1 vs 8-9 | .93 | 4.48 | .01 |
| 3.67(2) | 1 vs 6-7 | .90 | 4.20 | .01 |
| 3.63 | 2-3 vs 10 | 1.26 | 8.24 | .01 |
| | 2-3 vs 8-9 | .92 | 4.39 | .01 |
| | 2-3 vs 6-7 | .80 | 3.32 | .05 |
| | 4 vs 10 | .95 | 4.68 | .01 |

Table 17 (continued)

Health and Fitness Domain

| Item Mean | Comparison | Differences | F | P |
|---|---|---|---|---|
| | 4 vs 8-9 | .91 | 4.29 | .01 |
| | 4 vs 6-7 | .88 | 4.01 | .01 |
| | 5 vs 10 | .81 | 3.40 | .01 |
| | 5 vs 8-9 | .77 | 3.07 | .05 |
| | 5 vs 6-7 | .74 | 2.84 | .05 |
| | 15 significant differences out of a possible 45 | | | |

Vertigo Domain

| Item Means | Comparisons | Differences | F | P |
|---|---|---|---|---|
| 4.93 | 1 vs 10 | 1.00 | 5.18 | .01 |
| 4.74 | 1 vs 9 | .89 | 4.11 | .01 |
| 4.59 | 1 vs 8 | .82 | 3.48 | .01 |
| 4.56 | 2 vs 10 | .81 | 3.40 | .01 |
| 4.44 | 2 vs 9 | .72 | 2.54 | .05 |
| 4.33 | | | | |
| 4.30 | | | | |
| 4.11 | 5 significant differences out of a possible 45 | | | |
| 4.04 | | | | |
| 3.93 | | | | |

Table 17 (continued)

Aesthetic Domain

| Item Mean | Comparison | Differences | F | P |
|---|---|---|---|---|
| 4.30 | 1 vs 10 | .97 | 4.88 | .01 |
| 4.15 | 2 vs 10 | .82 | 3.48 | .01 |
| 4.04 | 3 vs 10 | .71 | 2.61 | .05 |
| 3.86 | | | | |
| 3.85 | | | | |
| 3.82 | | | | |
| 3.78 | 3 significant differences out of | | | |
| 3.67 | a possible 45 | | | |
| 3.63 | | | | |
| 3.33 | | | | |

Catharsis Domain

| Item Mean | Comparison | Differences | F | P |
|---|---|---|---|---|
| 4.89(2) | 1-2 vs 9 | 1.48 | 11.36 | .01 |
| 4.67 | 3 vs 9 | 1.26 | 8.23 | .01 |
| 4.63(2) | 4-5 vs 9 | 1.22 | 7.72 | .01 |
| 4.44 | 6 vs 9 | 1.03 | 5.50 | .01 |
| 4.37 | 7 vs 9 | .96 | 4.78 | .01 |
| 4.22 | 8 vs 9 | .81 | 3.40 | .01 |
| 3.41 | 6 significant differences out of | | | |
| | a possible 36 | | | |

Table 17 (continued)

| Ascetic Domain | | | | |
|---|---|---|---|---|
| Item Mean | Comparison | Differences | F | P |
| 4.74 | 1 vs 10 | 1.79 | 16.62 | .01 |
| 4.67 | 1 vs 9 | 1.67 | 14.47 | .01 |
| 4.48 | 1 vs 8 | 1.52 | 11.98 | .01 |
| 4.41 | 1 vs 6-7 | 1.22 | 7.72 | .01 |
| 3.89 | 1 vs 5 | .85 | 3.74 | .01 |
| 3.52(2) | 2 vs 10 | 1.72 | 15.35 | .01 |
| 3.22 | 2 vs 9 | 1.60 | 13.28 | .01 |
| 3.07 | 2 vs 8 | 1.45 | 10.91 | .01 |
| 2.95 | 2 vs 6-7 | 1.15 | 6.86 | .01 |
| | 2 vs 5 | .78 | 3.75 | .01 |
| | 3 vs 10 | 1.53 | 12.14 | .01 |
| | 3 vs 9 | 1.41 | 10.31 | .01 |
| | 3 vs 8 | 1.26 | 8.23 | .01 |
| | 3 vs 6-7 | .96 | 4.78 | .01 |
| | 14 significant differences out of a possible 45 | | | |

Table 18

Multiple Comparisons Between Individual Item Means within Attitudinal Domains for Women

Social Domain

| Item Mean | Comparisons | Differences | F | P |
|---|---|---|---|---|
| 5.11 | 1 vs 8 | 1.35 | 5.82 | .01 |
| 4.97 | 1 vs 7 | .90 | 2.58 | .05 |
| 4.93 | 2 vs 8 | 1.21 | 4.68 | .01 |
| 4.80 | 3 vs 8 | 1.17 | 4.37 | .01 |
| 4.72 | 4 vs 8 | 1.04 | 3.45 | .01 |
| 4.35 | 5 vs 8 | .96 | 2.94 | .05 |
| 4.21 | 6 significant differences out of | | | |
| 3.76 | a possible 28 | | | |

Health and Fitness Domain

| Item Mean | Comparisons | Differences | F | P |
|---|---|---|---|---|
| 5.52 | 1 vs 11 | 2.00 | 16.24 | .01 |
| 5.03 | 1 vs 10 | 1.66 | 11.19 | .01 |
| 4.93 | 1 vs 9 | 1.38 | 7.73 | .01 |
| 4.83 | 1 vs 8 | 1.28 | 6.65 | .01 |
| 4.62 | 1 vs 6-7 | 1.18 | 5.65 | .01 |
| 4.34(2) | 1 vs 5 | .90 | 3.29 | .05 |
| 4.24 | 2 vs 11 | 1.51 | 9.26 | .01 |
| 4.14 | 2 vs 10 | 1.17 | 5.56 | .01 |
| 3.86 | 2 vs 9 | .89 | 3.21 | .05 |
| 3.52 | 2 vs 8 | .79 | 2.53 | .05 |

Table 18 (continued)

Health and Fitness Domain

| Item Mean | Comparisons | Differences | F | P |
|---|---|---|---|---|
| | 3 vs 11 | 1.41 | 8.07 | .01 |
| | 3 vs 10 | 1.09 | 4.65 | .01 |
| | 3 vs 9 | .79 | 2.53 | .05 |
| | 4 vs 11 | 1.31 | 6.97 | .01 |
| | 4 vs 10 | .97 | 3.82 | .01 |
| | 5 vs 11 | .82 | 2.73 | .05 |
| | 17 significant differences out of a possible 55 | | | |

Vertigo Domain

| Item Mean | Comparisons | Differences | F | P |
|---|---|---|---|---|
| 5.69 | 1 vs 9 | 1.48 | 7.27 | .01 |
| 5.14 | 1 vs 8 | 1.33 | 5.87 | .01 |
| 4.93 | 1 vs 7 | 1.17 | 4.54 | .01 |
| 4.79 | 1 vs 6 | 1.14 | 4.32 | .01 |
| 4.76 | 1 vs 5 | .93 | 2.87 | .05 |
| 4.55 | 1 vs 4 | .90 | 2.69 | .05 |
| 4.52 | 2 vs 9 | .93 | 2.87 | .05 |
| | 7 significant differences out of a possible 36 | | | |

Table 18 (continued)

Aesthetic Domain

| Item Mean | Comparisons | Differences | F | P |
|---|---|---|---|---|
| 4.52 | 1 vs 9 | .90 | 2.63 | .01 |
| 4.41(2) | | | | |
| 4.24 | | | | |
| 4.17 | | | | |
| 3.94 | | | | |
| 3.79 | | | | |
| 3.70 | 1 significant difference out of | | | |
| 3.62 | a possible 36 | | | |

Catharsis Domain

| Item Mean | Comparisons | Differences | F | P |
|---|---|---|---|---|
| 5.07 | 1 vs 9 | 1.07 | 3.80 | .01 |
| 5.00 | 1 vs 8 | 1.04 | 3.59 | .01 |
| 4.86 | 1 vs 7 | .93 | 2.87 | .05 |
| 4.66 | 2 vs 9 | 1.00 | 3.32 | .05 |
| 4.25 | 2 vs 8 | .97 | 3.12 | .05 |
| 4.21 | 2 vs 7 | .86 | 2.45 | .05 |
| 4.14 | 3 vs 9 | .86 | 2.45 | .05 |
| 4.03 | 7 significant differences out of | | | |
| 4.00 | a possible 36 | | | |

Table 18 (continued)

Ascetic Domain

| Item Mean | Comparisons | Differences | F | P |
|---|---|---|---|---|
| 5.00 | 1 vs 8 | 2.27 | 17.12 | .01 |
| 4.65 | 1 vs 7 | 1.83 | 11.12 | .01 |
| 4.21 | 1 vs 6 | 1.72 | 9.83 | .01 |
| 4.17 | 1 vs 5 | 1.60 | 8.50 | .01 |
| 3.40 | 2 vs 8 | 1.92 | 12.25 | .01 |
| 3.28 | 2 vs 7 | 1.48 | 7.27 | .01 |
| 3.17 | 2 vs 6 | 1.37 | 6.23 | .01 |
| 2.73 | 2 vs 5 | 1.25 | 5.19 | .01 |
| | 3 vs 8 | 1.48 | 7.27 | .01 |
| | 3 vs 7 | 1.04 | 3.59 | .01 |
| | 3 vs 6 | .93 | 2.87 | .05 |
| | 4 vs 8 | 1.44 | 6.89 | .01 |
| | 4 vs 7 | 1.00 | 3.32 | .05 |
| | 4 vs 6 | .89 | 2.03 | .05 |
| | 14 significant differences out of a possible 28 | | | |

As Tables 17 and 18 show, many differences between item means were significant for both men and women. The number of items for men and women were 8, 9, 10, and 11 through all the domains. If all possible differences were to have been found for each of the possible numbers of items, each possibility would conform to the formula $\frac{n(n-1)}{2}$.

In the Aesthetic domain more of the response items were similar with respect to response strength than for any other domain, for both men and women. For men, only three comparisons out of 45 were significantly different. At the other extreme one-third of the Health and Fitness items were significantly different (15 of 45) while for women half the possible comparisons (14 of 28) were responded to in a significantly different manner.

There appeared to be a wide variety in the response strength within both sexes for virtually each item of each attitudinal domain. In addition, the variability among items comprising each domain was considerable suggesting that even though each item was ostensibly representative of a given attitudinal domain, responses to the individual items within the same domain provoked widely varying responses among both males and females. Despite the above, males and females tended to respond similarly in all but one attitudinal domain.

# CHAPTER FIVE

## Summary, Conclusions, Recommendations

### Summary

The first purpose of this study was to determine the relative positive or negative position along a seven-point scale for each item of Kenyon's Attitude Toward Physical Activity instrument. The instrument composed of six attitudinal domains, totaling 59 items for men and 54 items for women. The University's physical education service course curriculum was the subject of this student attitude survey. A second purpose was to test the hypothesis that no significant differences would occur between the sexes in the six domains of the two forms (M) and (W) of this attitude survey instrument. A third purpose was to test the significance of difference between individual items means within each attitudinal domain for both men and women respondents.

These three purposes were designed to answer the following questions about the use of Kenyon's Attitude Toward Physical Activity instrument. First, what are the attitudes of men and women students toward physical activity? Second, are the sex differences in attitude a function of chance or are they genuine differences? Third, do individual items within an attitudinal domain differ from each other significantly or by chance?

Analysis of the data was performed on the results of the inventory ratings of 27 males students and 29 female students who completed forms (M) and (W) of the ATPA. The subjects selected for this research were all full-time students of Central Washington University at the time of the study.

The responses by the students were examined to determine the extent to which the students' attitudes were found to be positive or negative.

The first analysis of the data was a calculation of the means and standard deviations for each item and each domain, for men and women separately. These data are presented and discussed in Tables 1 through 12 and the accompanying narrative. The comparable statistics are quite similar for each of the domains within each sex as well as between sexes despite the large variability in response, domain by domain.

The second purpose of this study was to determine the significance of difference between means of response for each of the attitudinal domains, for men versus women. The *t*-ratio used applied to independent groups, with alpha levels set at .05. Table 14 presents these data. Only in the Vertigo domain was there a significant difference between men vs women. All other differences were chance-related.

The third purpose of the study was to determine the extent to which differences between individual items appearing within each attitudinal domain were significant or

chance-related, for each of the sexes. In order to determine this a one-way analysis of variance was calculated for the significance of difference between item means for all of the questions which separately comprised each of the six attitudinal domains for men and for women. Tables 15 and 16 summarize these analyses for men and women, respectively. Every attitudinal domain for both sexes contained some instances where differences in response strength were significant.

## Conclusion

Analysis of means and standard deviation of the students' responses shows that all the means move toward the center of the seven-point scale, but at the same time the standard deviation indicates wide variability around the means, for both sexes. Coefficients of variation, indicating relative variability and equating this relative variability between the sexes and domains, are quite high indicating wide variation within each sex for each domain, but both sexes appear to score similarly in relative variability.

The results of the *t*-test for two independent groups shows no significant difference between the sexes in five of six of the individual domains at the .05 level. Only in the Vertigo domain does a significant difference between the groups appear which shows the female groups scored significantly higher, that is, more toward the positive side

of the scale. The reason for the differences between the sexes has not been determined by this study. The results in general suggest that similar attitudes exist among the male and female groups tested.

Many differences between item means were significant for both men and women. If all possible differences were to have been found for each of the possible numbers of items, each possibility would conform to the formula $n\frac{(n-1)}{2}$. Thus, for 8 items, all possible differences equal 28, for 9 responses this becomes 36, for 10 it is 45 and for 11 items it is 55.

In the Aesthetic domain more of the response items were similar with respect to response strength than for any other domain, both for men and women. For men, only three comparisons out of 45 were significantly different. At the other extreme one-third of the Health and Fitness items were significantly different (15 of 45) while for women half the possible comparisons (14 of 28) were responded to in a significant different manner.

## Recommendations

It is recommended that:

1. This study should be repeated using a campus-wide sampling much larger than the one provided in this work with a control group made up of non-students in an effort to see if the results reflect the attitude of the community or the society.

2. That similar studies should be conducted by the Physical Education Department to see that the activity needs of the students are being fulfilled by the service curriculum offered.

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# APPENDIX A

## ATPA Form (DW) Women

Instructions for ATTITUDE TOWARD PHYSICAL ACTIVITY Questionnaire.

Please fill out the following IDENTIFICATION at the LEFT SIDE of the ANSWER SHEET:

1. Your NAME -- one letter each box at top -- list and Circle.
2. Your SEX -- fill in the proper circle -- top, center.
3. Your EDUCATIONAL LEVEL -- fill in the circle of your present school grade.
4. Your AGE -- under birthdate list your age and fill in the appropriate circles under "YR."
5. Your SOCIAL SECURITY NUMBER -- list and fill in circle under Identification Number -- leave space "J" blank.
6. The IBM Sequence Number of this class -- list and fill in circles under Special Codes beginning with "K."

**********

The following questionnaire is designed to determine your opinion about physical activity. We are asking you to express what you think or feel about each statement. The best answer is your own opinion.

1. Express your agreement or disagreement by completely filling in the appropriate circle for each question. Use the following key:

   1 = Very Strongly Agree
   2 = Strongly Agree
   3 = Agree
   4 = Undecided
   5 = Strongly Disagree
   6 = Very Strongly Disagree

   For example, if you strongly disagree with a statement, fill in circle number 6.
2. You should rarely need to use "Undecided" (4).
3. Please work independently of others.
4. Don't spend too much time on any one statement; try to respond and go on to the next.
5. Respond to EVERY statement.
6. Do not begin until told to do so.
7. Please respond to statements IN THE ORDER GIVEN. Finish each question and each page before going to the next.

-----The best answer is YOUR OWN OPINION-----

ITEM AND SCALE DESIGNATION (W)

Form DW (Women)

VSA very strongly agree

SA strongly agree

A strongly agree

U undecided

D disagree

SD strongly disagree

VSD very strongly disagree

1. I would prefer quiet activities like swimming or golf, rather than such activities as water skiing or sail boat racing. (3)

2. I would gladly put up with the necessary hard training for the chance to try out for the U.S. Women's Olympic Team. (6)

3. The most important value of physical activity is the beauty found in skilled movement. (4)

4. Physical education programs should stress vigorous exercise since it contributes most to physical fitness. (2)

5. The years of strenuous daily training necessary to prepare for today's international competition is asking a lot of today's young women. (6)

6. The need for much higher levels of physical fitness has been established beyond all doubt. (2)

7. Among the best physical activities are those which represent a personal challenge, such as skiing, mountain climbing, or heavy weather sailing. (3)

(W)

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SD strongly disagree

VSD very strongly disagree

8. Among the most desirable forms of physical activity are those which present the beauty of human movement such as modern dance and water ballet. (4)

9. I would get by far the most satisfaction from games requiring long and careful preparation and involving stiff competition against a strong opposition. (6)

10. Of all physical activities, those whose purpose is primarily to develop physical fitness, would <u>not</u> be my first choice. (2)

11. The best way to become more socially desirable is to participate in group physical activities. (1)

12. Almost the only satisfactory way to relieve severe emotional strain is through some form of physical activity. (5)

13. Frequent participation in dangerous sports and physical activities are all right for other people but ordinarily they are not for me. (3)

14. Physical education programs should place <u>much</u> more emphasis upon the beauty found in human motion. (4)

(W)

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SD strongly disagree

VSD very strongly disagree

15. If given a choice, I sometimes would choose strenuous rather than light physical activity. (2)

16. There are better ways of relieving the pressures of today's living than having to engage in or watch physical activity. (5)

17. I like to engage in socially oriented physical activities. (1)

18. A part of our lives must be committed to vigorous exercise. (2)

19. I am not particularly interested in those physical activities whose sole purpose is to depict human motion as something beautiful. (4)

20. Colleges should sponsor many more physical activities of a social nature. (1)

21. For a healthy mind in a healthy body the only place to begin is through participation in sports and physical activities every day. (5)

22. The <u>least</u> desirable physical activities are those providing a sense of danger and risk of injury such as skiing on steep slopes, mountain climbing, or parachute jumping. (3)

(W)

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SD strongly disagree

VSD very strongly disagree

23. Being physically fit is not the most important goal in my life. (2)

24. A sport is sometimes spoiled if allowed to become too highly organized and keenly competitive. (6)

25. I enjoy sports mostly because they give me a chance to meet new people. (1)

26. Practically the only way to relieve frustrations and pent-up emotions is through some form of physical activity. (5)

27. The time spent doing daily calisthenics could probably be used more profitably in other ways. (2)

28. Given a choice, I would prefer motor boat racing or running rapids in a canoe rather than one of the quieter forms of boating. (3)

29. Of all the kinds of physical activities, I don't particularly care for those requiring a lot of socializing. (1)

30. One of the things I like most in sports is the great variety of ways human movement can be shown to be beautiful. (4)

(W)

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SD strongly disagree

VSD very strongly disagree

31. Most intellectual activities are often just as refreshing as physical activities. (5)

32. Strength and physical stamina are the most important prerequisites to a full life. (2)

33. Physical activities that are purely for social purposes, like college dances, are sometimes a waste of time. (1)

34. The self-denial and sacrifice needed for success in today's international competition may soon become too much to ask of a thirteen or fourteen year-old girl. (6)

35. I am given unlimited pleasure when I see the form and beauty of human motion. (4)

36. I believe calisthenics are among the less desirable forms of physical activity. (2)

37. Watching athletes becoming completely absorbed in their sport nearly always provides me with a welcome escape from the many demands of present-day life. (5)

38. If I had to choose between "still-water" canoeing and "rapids" canoeing, "still-water" canoeing would usually be my choice. (3)

(W)

VSA very strongly agree

SA strongly agree

A Agree

U undecided

D Disagree

SD strongly disagree

VSD very strongly disagree

39. There are better ways of getting to know people than through games and sports. (1)

40. People should spend twenty to thirty minutes a day doing vigorous exercise. (2)

41. There is sometimes an over-emphasis upon those physical activities that attempt to portray human movement as an art form. (4)

42. Physical activities having an element of daring or requiring one to take chances are desirable. (3)

43. Since competition is a fundamental characteristic of American society, highly competitive athletics and games should be encouraged for all. (6)

44. A happy life does not require regular participation in physical activity. (5)

45. The best form of physical activity is when the body is used as an instrument of expression. (4)

46. Sports are fun to watch and to engage in, only if they are not taken too seriously, nor demand too much time and energy. (6)

47. Calisthenics taken regularly are among the best forms of exercise. (2)

(W)

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SD strongly disagree

VSD very strongly disagree

48. I could spend many hours watching the graceful and well-coordinated movements of the figure skater or modern dancer. (4)

49. The best thing about games and sports is that they give people more confidence in social situations. (1)

50. Among the best forms of physical activity are those providing thrills such as sailing in heavy weather or canoeing on river rapids. (3)

51. Regular physical activity is the major prerequisite to a satisfying life. (5)

52. In this country there is sometimes too much emphasis on striving to be successful in sports. (6)

53. I would enjoy engaging in those games and sports that require a defiance of danger. (3)

54. Most people could live happy lives without depending upon frequent watching or participating in physical games and exercise. (5)

# APPENDIX B

## ATPA Form (DW) Men

Instructions for ATTITUDE TOWARD PHYSICAL ACTIVITY Questionnaire.

Please fill out the following IDENTIFICATION at the LEFT SIDE of the ANSWER SHEET:

1. Your NAME -- one letter each box at top -- list and Circle.
2. Your SEX -- fill in the proper circle -- top, center.
3. Your EDUCATIONAL LEVEL -- fill in the circle of your present school grade.
4. Your AGE -- under birthdate list your age and fill in the appropriate circles under "YR."
5. Your SOCIAL SECURITY NUMBER -- list and fill in circle under Identification Number -- leave space "J" blank.
6. The IBM Sequence Number of this class -- list and fill in circles under Special Codes beginning with "K."

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The following questionnaire is designed to determine your opinion about physical activity. We are asking you to express what you think or feel about each statement. The best answer is your own opinion.

1. Express your agreement or disagreement by completely filling in the appropriate circle for each question. Use the following key:

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1 =        Very Strongly Agree
2 =             Strongly Agree
3 =                    Agree
4 =        Undecided
5 =          Strongly Disagree
6 =     Very Strongly Disagree
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   For example, if you strongly disagree with a statement, fill in circle number 6.
2. You should rarely need to use "Undecided" (4).
3. Please work independently of others.
4. Don't spend too much time on any one statement; try to respond and go on to the next.
5. Respond to EVERY statement.
6. Do not begin until told to do so.
7. Please respond to statements IN THE ORDER GIVEN. Finish each question and each page before going to the next.

-----The best answer is YOUR OWN OPINION-----

ITEM AND SCALE DESIGNATION (M)

Form DM (Men)[a]

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SA strongly disagree

VSD very strongly disagree

1. I would gladly put in the necessary years of daily hard training for the chance to try out for the U.S. Olympic Team. (6)

2. I would prefer quiet activities like swimming or tossing a ball around rather than such activities as automobile or speedboat racing. (3)

3. Among desirable forms of physical activity are those that show the beauty and form of human movement, such as modern dance and water ballet. (4)

4. I prefer those sports which require very hard training and involve intense competition such as interscholastic and intercollegiate athletics. (6)

5. A happy life does not require regular participation in physical activity. (5)

6. The risk of injury would be well worth it when you consider the thrills that come from engaging in such activities as mountain climbing and bobsledding. (3)

7. It is important that everyone belong to at least one group that plays games together. (1)

(M)

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SD strongly disagree

VSD very strongly disagree

8. Of all physical activities, those whose purpose is primarily to develop physical fitness would not be my first choice. (2)

9. Among the best physical activities are those which present a personal challenge, such as skiing, mountain climbing, or heavy weather sailing. (3)

10. I would get by far the most satisfaction from games requiring long and careful preparation and involving stiff competition against a strong opposition.

11. The degree of beauty and grace of movement found in sports is sometimes less than claimed. (4)

12. Almost the only satisfactory way to relieve severe emotional strain is through some form of physical activity. (5)

13. I would usually choose strenuous physical activity over light physical activity, if given the choice. (2)

14. Physical education programs should place a little more emphasis upon the beauty found in human motion. (4)

(M)

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SA strongly disagree

VSD very strongly disagree

15. There are better ways of relieving the pressures of today's living than having to engage in or watch physical activity. (5)

16. Frequent participation in dangerous sports and physical activities are all right for other people but ordinarily they are not for me. (3)

17. I like to engage in socially oriented physical activities. (1)

18. A large part of our lives must be committed to vigorous exercise. (2)

19. I am not in the least interested in those physical activities whose sole purpose is to depict human motion as something beautiful. (4)

20. Colleges should sponsor many more physical activities of a social nature.

21. Being strong and highly fit is <u>not</u> the most important thing in my life. (2)

22. The least desirable physical activities are those providing a sense of danger and risk of injury such as skiing on steep slopes, mountain climbing, or parachute jumping. (3)

(M)

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SD strongly disagree

VSD very strongly disagree

23. For a healthy mind in a healthy body the only place to begin is through participation in sports and physical activities every day. (5)

24. A sport is sometimes spoiled if allowed to become too highly organized and keenly competitive. (6)

25. The time spent doing daily calisthenics could probably be used more profitably in other ways. (2)

26. I enjoy sports mostly because they give me a chance to meet new people. (1)

27. Practically the only way to relieve frustrations and pent up emotions is through some form of physical activity. (5)

28. Given a choice, I would prefer motor boat racing or running rapids in a canoe rather than one of the quieter forms of boating. (3)

29. Strength and physical stamina are the most important prerequisites to a full life. (2)

30. Of all the kinds of physical activities, I dislike the most those requiring a lot of socializing. (1)

(M)

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SD strongly disagree

VSD very strongly disagree

31. The most enjoyable forms of physical activity are games and sports engaged in on the spur of the moment, rather than those requiring long periods of training. (6)

32. One of the things I like most in sports is the great variety of ways human movement can be shown to be beautiful. (4)

33. Most intellectual activities are often just as refreshing as physical activities. (5)

34. Physical activities that are purely for social purposes, like college dances, are sometimes a waste of time. (1)

35. I am given great pleasure when I see the form and beauty of human motion. (4)

36. I believe calisthenics are among the less desirable forms of physical activity. (2)

37. The self-denial and sacrifice needed for success in today's international competition may soon become too much to ask of a thirteen or fourteen year-old. (6)

38. People should spend twenty to thirty minutes a day doing vigorous calisthenics. (2)

(M)

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SD strongly disagree

VSD very strongly disagree

39. Too much attention is paid to those physical activities that try to portray human movement as an art form. (4)

40. Sports are fund to watch and to engage in, only if they are not taken too seriously, nor demand too much time and energy. (6)

41. Of all physical activities, my first choice would be those whose purpose is primarily to develop and maintain physical fitness. (2)

42. If I had to choose between "still-water" canoeing and "rapids" canoeing, "still-water" canoeing would be the better alternative. (3)

43. Watching athletes becoming completely absorbed in their sport nearly always provides me with a welcome escape from the many demands of present-day life. (5)

44. Participating in games and sports can sometimes spoil good friendships. (1)

45. The idea that every human movement is beautiful is absurd. (4)

46. Physical activities having a strong element of daring or requiring one to take chances are highly desirable. (3)

(M)

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SD strongly disagree

VSD very strongly disagree

47. I could easily spend an hour watching the graceful and well-coordinated movements of a figure skater or modern dancer. (4)

48. There are better ways of getting to know people than through games and sports. (1)

49. The fun is sometimes taken out of sports and games when they become too highly organized, overly competitive, and too demanding of the participant. (6)

50. Among the best forms of physical activity are those which use the body as an instrument of expression. (4)

51. Since competition is fundamental to American society, sports and athletics need to be much more demanding and competitive than at present. (6)

52. The best thing about games and sports is that they give people more confidence in social situations. (1)

53. One of the best forms of physical activity is that which provides a thrilling sense of danger such as sailing in heavy weather or canoeing on river rapids. (3)

(M)

VSA very strongly agree

SA strongly agree

A agree

U undecided

D disagree

SD strongly disagree

VSD very strongly disagree

54. Regular physical activity is the major prerequisite to a satisfying life. (5)

55. Vigorous daily exercises are absolutely necessary to maintain one's general health. (2)

56. One of the most desirable forms of physical activity is social dancing. (1)

57. In this country there is sometimes too much emphasis on striving to be successful in sports. (6)

58. I would enjoy engaging in those games and sports requiring, to a large extent, the defiance of danger. (3)

59. Most people could live happy lives without depending upon frequent watching or participating in physical games and exercise. (5)