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An Analysis of State and Trait Anxiety Experienced in Sports Competition by Women at Different Age Levels.

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Louisiana State University and Agricultural & Mechanical College

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AN ANALYSIS OF STATE AND TRAIT ANXIETY EXPERIENCED
IN SPORTS COMPETITION BY WOMEN
AT DIFFERENT AGE LEVELS

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Education

in

The Department of Health, Physical,
and Recreation Education

by
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ABSTRACT

It was the purpose of this study to analyze state and trait anxiety experienced in competitive sports by women at three different age levels. Subjects were twelve and thirteen, sixteen and seventeen and nineteen years and older. The anxiety scores were also analyzed according to sports.

Eight sports were selected for study. These included four individual sports: gymnastics, swimming, tennis and track and field; and four team sports: basketball, field hockey, softball and volleyball.

The subjects were six hundred eighty-two women who engaged competitively in these eight sports. One hundred forty-six were twelve and thirteen years old, two hundred sixty-four were sixteen and seventeen years old, two hundred seventy-two were nineteen years old and older.

The competitive events were selected on the basis of anticipated stressful situations. This was determined by size of the tournament, ranking of the contest in terms of championships involved and the win-loss records.

Events selected represented a variety of tournaments such as National Junior Olympics, state amateur tournaments, city tournaments, college invitational and regional tournaments and high school state and district tournaments. Data

were collected between June 1970 and May 1971 at tournaments in Georgia, North Carolina, South Carolina, Tennessee, and Virginia.

The Spielberger State-Trait Anxiety Inventory was administered to each subject. The State Anxiety Scale was administered within one hour before competition. The Trait Anxiety Scale was administered later when no stressful situation was evident.

Scores on state and trait anxiety were analyzed by age groups, by sports groups and by age groups in sports. Analysis of Variance was used to determine significance of differences among means. Graphic comparisons were made between state and trait scores.

The findings of the study were:

1. Significant differences of mean state anxiety scores did exist among age groups. The most state anxious subjects were the twelve and thirteen year olds and the least state anxious were those nineteen years old and older. The level of state anxiety decreased as age increased.

2. Significant differences in state anxiety scores did exist among sports groups. Gymnastics participants were the most anxious state sports group followed by track and field, swimming, tennis, softball, volleyball, basketball and field hockey.

3. Each of the four individual sports had higher mean state anxiety scores than did each of the four team sports.

4. The interaction of state anxiety scores of the three age groups and eight sports groups was significant.

5. Significant differences among trait anxiety scores did exist among age groups. The most trait anxious subjects were sixteen and seventeen year olds and the nineteen years old and older had the lowest trait anxiety mean.

6. There were significant differences among means of trait anxiety scores grouped by sports. Gymnastics had the highest trait anxiety mean followed by swimming, volleyball, track and field, softball, tennis, field hockey and basketball.

7. Significant differences in trait anxiety scores did exist among age groups by sports showing significant interaction.

Based on the findings and within the limitations of this study, the following conclusions seem justified:

1. State anxiety levels of women engaged in competitive sports decrease with age.

2. State anxiety levels of women engaged in competitive sports differ among sports.

3. The effects of age upon state anxiety are not consistent in all sports nor the effects of sports upon

state anxiety consistent for varying age levels.

4. Trait anxiety levels of women engaged in competitive sports are significantly different at three age levels.

5. Trait anxiety levels of women engaged in competitive sports differ among sports.

6. The effects of age upon trait anxiety are not consistent in all sports nor the effects of sports upon trait anxiety consistent for varying age levels.

Chapter 1

INTRODUCTION

During the last fifty years the pendulum of interscholastic and intercollegiate competition for women has gone from one extreme position to another. In the 1960's vast strides were made in recognition of serious sports competition for girls and women. This was evidenced most recently by the approval of sanctioned national intercollegiate tournaments for college women. Thus, it is no longer a question of whether or not there is to be competition but how to best administer it.

For a number of years it was believed that women physical educators opposed interscholastic competition; opposition was directed to those events where exploitation was evident and benefits to the participant were minimized.¹ The role of competitive sports for women has gained importance in our culture, and while society once defended women against the "evils" of overemphasized competition, it now

¹Howard Slusher and Aileene Lockhart, Anthology of Contemporary Readings (Dubuque: W. C. Brown, 1966), p. 246.

recognizes the new opportunities for women in sports.^{2,3} Women representing the United States have competed in the Olympic Games since the 1920's and international competition for women has expanded beyond the Olympics. Advances in communication and travel have combined to make the boundaries of our country appear much smaller and there is growing interest in providing more competitive opportunities for all levels of skills and for all ages.

It would be difficult to estimate the number of women who compete interscholastically and intercollegiately, but high schools with women's teams in four or five sports are not rare. In the southern district of the American Association for Health, Physical Education and Recreation in 1966, at least 32 percent of colleges and universities with women attending had intercollegiate teams and this was at the beginning of the reawakening of intercollegiates.⁴

In 1965 the first Institute on Girls Sports was sponsored by the Women's Board of the United States Olympic Development Committee and the Division of Girls and Women's Sports for the American Association of Health, Physical

²Marian Sanborn and Betty Hartman, Issue in Physical Education (Philadelphia: Lea and Febiger, 1964), p. 231.

³Elizabeth Ann Stitt, "The Curtain Goes Up on What's New In Women's Sports," Southern Association for Physical Education of College Women Proceedings, 1969, 13.

⁴Constance Mynatt, "Intercollegiate Sports for Women," Southern Association for Physical Education of College Women Proceedings, 1967, 68.

Education and Recreation. This represented an initial step by women physical educators toward recognition of the resurgence of interest in highly competitive sports for women. The Institute had as its purposes to improve communication and interpretation of competition in women's sports, to effect a greater recognition and acceptance by women of the need for properly organized and administered sports for women and to encourage and provide information for more leadership to organize and administer competition for girls and women.⁵

In 1965 the Chairman of the Board of the Division for Girls and Women's Sports appointed a Commission on Intercollegiate Athletics for Women to formulate guidelines for competition between college teams and also appointed a study committee on competition for girls and women. Guidelines for intercollegiate programs for women in colleges and for interscholastic athletic programs for girls in junior high schools and senior high schools were published in 1969.⁶

⁵ Hope Smith, "The First Institute on Girls Sports," Journal of Health, Physical Education and Recreation, XXXV (April, 1964), 31-32.

⁶ Division for Girls and Women's Sports, Philosophy and Standards for Girls and Women's Sports (Washington: National Education Association, 1969).

Recently, a number of articles^{7,8,9,10} have been published that reflect this particular interest. There have also been a number of books^{11,12,13,14} dealing with this topic and some attitude studies^{15,16} regarding women in athletics.

More and more physical educators and coaches are becoming aware of the psychological aspects of sports and

⁷Mildred Barnes, "Officiating and Amateur Status in Girls and Women's Sports," Journal of Health, Physical Education and Recreation, XXXIX (October, 1968), 24.

⁸Alyce Cheska, "Current Developments in Competitive Sports for Girls and Women," Journal of Health, Physical Education and Recreation, XXXXI (March, 1970), 86.

⁹Katherine Ley, "The Roots and the Tree," Journal of Health, Physical Education and Recreation, XXXIII (September, 1962), 34.

¹⁰Creighton Hale, "Athletics for Pre High School Age Children," Journal of Health, Physical Education and Recreation, XXX (December: 1959), 19.

¹¹Patsy Neal, Basketball Techniques for Women (Ronald Press: New York, 1966).

¹²Patsy Neal, Coaching Methods for Women (Reading: Addison-Wesley, 1969).

¹³Katherine Ley, Administration of High School Athletics (Washington: National Education Association, 1963).

¹⁴Betty Jane Trotter, Volleyball for Girls and Women (New York: Ronald Press, 1965).

¹⁵Rosemary McGee, "Comparison of Attitudes Toward Intensive Competition in High School Girls," Research Quarterly, XXVII (March, 1956), 60-73.

¹⁶Betty McCue, "Constructing an Instrument for Evaluation of Attitudes Toward Intensive Competition in Team Games," Research Quarterly, XXIV (May, 1953), 205-209.

competition. It is only natural that the resurgence of interest in competition for women should bring about research in the psychology of participation and studies concerning the personalities of the performers in athletics.^{17,18}

Cratty stated that the existence of competition and the degree of competition are dependent upon the personality of the performer as well as socio-economic levels and aspiration levels among other variables.¹⁹ Attention must be given to the factors of motivation, the superior performer, the reward-punishment syndrome and the level of anxiety and stress.

"Competition is a situation to which a participant must continually adjust."²⁰ Intercollegiate and interscholastic athletics represent a continual adjustment in the anxiety level of an athlete. Cratty warns that as sports become more and more emphasized and more pressure is placed on winning, there is the possibility that sports may tend to heighten anxiety rather than providing a release

¹⁷Theresa Malumphy, "Personality of Women Athletes in Intercollegiate Competition," Research Quarterly, XXXIX (October, 1968), 611.

¹⁸Sheri Peterson, Jerome Weber, and William Trousdale, "Personality Traits of Women in Team Sports Vs. Women in Individual Sports," Research Quarterly, XXXVIII (December, 1967), 686.

¹⁹Bryant Cratty, Movement Behavior and Motor Learning (Philadelphia: Lea and Febiger, 1967), p. 187.

²⁰McGee, op. cit., p. 60.

from anxiety as it formerly did.²¹

Slusher pointed out that, "Sport, through its very preoccupation with competition and combat encourages man to live with anxieties."²² How a person perceives anxiety is an individual adjustment. It would be of great value to the coach to know the characteristics of a participant going into an activity. This preoccupation with psychology of sports has many implications for competition, and sports and athletics in particular.

In recent years anxiety has been considered as one of the factors contributing to the drive of an individual. Studies of high and low anxious persons performing in motor tasks yield conflicting results. There is little doubt that competition in sports does generate anxiety within the participant but there is a question as to the effect of this anxiety. Some individuals seem to perform better while others are deterred by it.^{23,24} Those studies cited which deal with personality traits and variables generally include at least one anxiety measure.

²¹Miroslav Vanek and Bryant Cratty, Psychology and the Superior Athlete (New York: The Macmillan Co., 1970), p. 187.

²²Howard Slusher, Man, Sport and Existence (Philadelphia: Lea and Febiger, 1967), p. 192.

²³Cratty, op. cit., p. 165.

²⁴Robert Singer, Motor Learning and Human Performance (New York: The Macmillan Co., 1968), p. 95.

Very little research has been done concerning women in athletic competition. This no doubt is due to the comparative recency of the intercollegiate, interscholastic movements. How does the anxiety level of a participant vary from one sport to another, from one individual to another, from one age to another, from a team sport participant to an individual sport participant? What part does anxiety play in the selection of a sport; in the performance of the participant? When does a participant experience her greatest level of anxiety? Which players need anxiety levels raised by pep talks and which need to be calmed? If these questions could be answered satisfactorily, the information would be most beneficial to the participant and to the coach.

In a study to distinguish personality traits of women who engage in team sports as opposed to those who engage in individual sports, differences were found in a number of traits.²⁵ There has been speculation as to whether certain individuals engage in a sport because of specific personality traits they possess or whether a particular sport develops certain traits.²⁶

Trumball reported a study by Kane of the various aspects of competition during the Olympic Games at Tokyo in

²⁵Malumphy, op. cit., p. 619.

²⁶Bryant Cratty, Psychology and Physical Activity (Englewood Cliffs: Prentice-Hall, 1968), p. 21.

1964. He found that there were differences not only in the anxiety levels of certain sports but also among the women who participated in the same sports.²⁷ This would indicate that much research is needed concerning women in athletics, as perhaps the psychological studies done with men may not be applicable.

STATEMENT OF THE PROBLEM

Some sports are more demanding physically than others. Perhaps some are more demanding psychologically than others. Sport is considered a stressor. To further the understanding of the psychology of sport and women competitors, it seemed appropriate to conduct a study into the state and trait anxiety of those women at different age levels who engage in team and individual sports in a competitive situation.

PURPOSE OF THE STUDY

It was the purpose of this study to analyze state and trait anxiety scores of women competitors to determine whether differences existed among participants in three age groups and in eight sports.

²⁷ Robert Trumbull, "Survey Explains Superiority of Men Over Women in Sports," The New York Times, October 6, 1964, p. 47.

NEED FOR THE STUDY

As cited in the Introduction, acceptance of interscholastic and intercollegiate competition for women has been relatively recent. Few studies have been done to investigate the psychological status of competitive sports on girls and women. No research could be located concerning the levels of anxiety that may be present in women participants at different age levels or in women participants in team or individual sports. There appeared to be a need for a study of this type dealing with anxiety levels and competition.

LIMITATIONS OF THE STUDY

It was recognized that many variables could influence the degree of anxiety built up before an athletic contest. The won-loss record of a particular team or participant may have had an effect. The coaching procedures and/or techniques employed would affect a performer. The schedule of contests might have been a limitation. The levels of competition of the opposition could be expected to exert an influence.

While it was recognized that these were limitations no effort was made to control them as they represented the variables that enter into any sports competition and control, even if it were possible, would have tended perhaps to distort the findings.

DELIMITATIONS OF THE STUDY

The tournaments and contests were selected from sports contests in Georgia, North Carolina, South Carolina, Tennessee, and Virginia with participants from these states and others in the southeastern geographic region. The data were gathered at events during the time June, 1970 to May, 1971. The subjects used were six hundred eighty-two girls and women in three age groups: twelve and thirteen years old, sixteen and seventeen years old, and nineteen years old and older. The four individual sports in which events were selected were gymnastics, swimming, tennis, track and field and the four team sports selected were basketball, field hockey, softball and volleyball. The subjects used were those individuals who played regularly on a team in regards to a team sport, and those individuals who regularly participated as their school's or organization's representatives in regards to an individual sport.

DEFINITION OF TERMS

The following terms were used in this study and the concepts used are incorporated in the definitions.

Stress

Stress is an internal reaction, an intervening variable between situation and performance, evidenced by a

marshalling of resources to meet a threat.²⁸

Tension

Tension is overt muscular contraction caused by an emotional state or by increased effort.²⁹

Anxiety

Anxiety appears to be a general fear or foreboding, a personality trait marked by a lower threshold to stressful events.³⁰

State Anxiety. "State anxiety is a transitory emotional state or condition of the human organism that is characterized by subjective, consciously perceived feelings of tension and apprehension, and heightened autonomic nervous system activity."³¹

Trait Anxiety. "Trait anxiety refers to relatively stable individual differences in anxiety proneness, that is, to differences between people in the tendency to respond to situations perceived as threatening with elevations in anxiety-state intensity."³²

Interscholastic Sports Competition

This is a competitive program carried on with a regular schedule of practice sessions and an established calendar of contests with other secondary schools.

²⁸Cratty, Movement Behavior and Motor Learning, *ibid.*, p. 161.

²⁹*Ibid.*

³⁰*Ibid.*

³¹Charles Spielberger, Richard Gorsuch, and Robert Luschene, The State-Trait Anxiety Inventory Test Manual for Form X (Palo Alto: Consulting Psychologists Press, 1968), 2.

³²*Ibid.*

Intercollegiate Sports Competition

This is a competitive program carried on with a regular schedule of practice sessions and an established calendar of contests with other colleges and universities.

BASIC ASSUMPTIONS

It was assumed that state and trait anxiety could be measured. It was also assumed that the subjects would give true responses to the questions in the scales.

HYPOTHESES

It was hypothesized the twelve and thirteen year old subjects would experience greater state anxiety during competition than the older groups.

It was further hypothesized that individuals participating individual or dual sports would experience higher levels of state anxiety than women engaged in team sports.

Chapter 2

REVIEW OF THE RELATED LITERATURE

The purpose of this study was to analyze state and trait anxiety scores of women engaged in sports competition at three age levels and to investigate anxiety scores of these same women in selected sports competition. Although little has been written concerning anxiety levels and women participants, the review of literature yielded some interesting observations.

The review of literature was divided into four sections. These sections included: (1) Studies Dealing with Anxiety, (2) Studies Relating to Competitive Sports and Anxiety, (3) Studies Relating to Anxiety of Women Participants in Competitive Sports, (4) Studies Relating to Anxiety as Measured by the Spielberger State-Trait Anxiety Inventory.

STUDIES DEALING WITH ANXIETY

Anxiety states are common among all individuals. Anxiety may be thought of as a psychic stress and represents continued unexplained fear.¹ Anxiety is often used

¹Robert Singer, Motor Learning and Human Performance (New York: The Macmillan Co., 1968), p. 95.

interchangeably with fear in psychological research. Cattell pointed out that anxiety and stress, however, are not the same.²

Ulrich pointed out that many believe that emotional stress is a product of anxiety and that anxiety is a time element and can be expected to rise at any time the individual feels threatened.³

It was also asserted that anxiety was a total reaction as a specific or general attempt to maintain a steady state of the body. In this light we are all exposed to anxiety in all aspects of life. Most of the research in anxiety has been concerned with comparing those individuals identified as high or low anxious. Various instruments that measure anxiety have been devised for identifying the subjects.^{4,5,6}

²Raymond Cattell, "The Nature and Measurement of Anxiety," Scientific American, CCVIII (1963), p. 97.

³Celeste Ulrich, "Stress and Sport," Science and Medicine of Exercise and Sports, ed. Warren Johnson (New York: Harper-Row, 1960), p. 262.

⁴Janet Taylor, "A Personality Scale of Manifest Anxiety," Journal of Abnormal and Social Psychology, XXXXVIII (April, 1953), 285-290.

⁵Charles Spielberger, Richard Gorsuch, and Robert Luschene, The State-Trait Anxiety Inventory Test Manual for Form X (Palo Alto: Consulting Psychologists Press, 1968).

⁶Martha Westrope, "Relations Among Rorschach Indices, Manifest Anxiety and Performance," Journal of Abnormal and Social Psychology, XXXXVIII (October, 1953), 515.

In studies concerning the effects of learning on complex motor tasks, Martens and London found that low anxiety subjects performed significantly better than high anxiety subjects initially on complex motor tasks. To identify the high and low anxious groups the Taylor Manifest Anxiety Scale was used.⁷ This has been supported by other studies.^{8,9,10} Cratty pointed out that high level anxious people appeared unable to adapt readily to novel situations.¹¹

Anxiety level has been considered as analogous to drive by many. Wenar and others reported that an increase in anxiety level produced a significant increase in

⁷Rainer Martens and Daniel London, "Effect of Anxiety, Competition and Failure on Performance of Complex Motor Task," Journal of Motor Behavior, I, 1 (1969), 1-10.

⁸David Ausubel, Herbert Schiff, and Morton Goldman, "Quality Learning Characteristics in the Normal Learning Process Associated with Anxiety," Journal of Abnormal and Social Psychology, XXXXVIII (October, 1953), 537-47.

⁹Robert Singer, "Reactions to Sport and Personality," National College Physical Education Association for Men Proceedings, 1969, 76.

¹⁰Dean Ryan, "Effect of Stress on Motor Performance and Learning," Research Quarterly, XXXIII (March, 1962), 111-19.

¹¹Bryant Cratty, Movement Behavior and Motor Learning (Philadelphia: Lea and Febiger, 1967), p. 164.

drive.^{12,13,14} Ryan explained it as an inverted U relationship: as anxiety increased performance would improve up to a point and beyond that an increase impaired performance.¹⁵ Spielberger and Smith, using the Taylor Manifest Anxiety Scale, found that differences in performance between high anxiety and low anxiety subjects reflected only drive level differences when varying levels of stress were introduced.¹⁶ Ogilvie reported that low anxious subjects had an unusual capacity to handle emotions under stress.¹⁷

In a study by Lazarus, Deese and Osler anxiety was identified as being generated by failure and by the task itself. They identified fear of failure as one of the motivators and stated that while most performers were anxious to

¹²Charles Wenar, "Reaction Time as a Function of Manifest Anxiety and Intensity," Journal of Abnormal and Social Psychology, XXXIX (July, 1954), 335-40.

¹³Robert Silverton, "Anxiety and the Mode of Response," Journal of Abnormal and Social Psychology, XXXIX (October, 1954), 538.

¹⁴Janet Taylor, "Drive Theory and Manifest Anxiety," Psychology Bulletin, LIII, 4 (1956), 303-20.

¹⁵Dean Ryan, "What Does Psychology Have to Offer Coaches and Trainers?" National College Physical Education Association for Men Proceedings, 1965, 38.

¹⁶Charles Spielberger and Lou Smith, "Anxiety, Stress and Serial Position Effects in Serial-Verbal Learning," Journal of Experimental Psychology, LXXII (October, 1966), 589.

¹⁷Bruce Ogilvie, "The Unconscious Fear of Success," Quest, X (May, 1968), 35.

succeed, all were not equally anxious. This tended to support the findings that less skilled individuals may show a superior performance while being motivated while a non-motivated superior skilled performer may show only mediocre performances.¹⁸ Ogilvie interjected a different aspect in motivation as he discussed fear of success.¹⁹

Knowledge of results has an effect on the anxiety level of many subjects. Sarason and Mandler found that success and failure reports during a performance evoked a superior performance from low anxiety groups but depressed the performance of the high anxiety subjects. To identify the two groups they used a self styled questionnaire.²⁰

Cratty postulated that fear of failure and level of aspiration influenced levels of anxiety within competitors.²¹

STUDIES RELATING TO COMPETITIVE SPORTS AND ANXIETY

Athletic competition was regarded by Ulrich as a major source of psychic stress and she cited an example of

¹⁸Richard Lazarus, James Deese, and Sonia Osler, "Effects of Psychological Stress Upon Performance," Psychology Bulletin, LIV, 4 (1952), 293-317.

¹⁹Ogilvie, loc. cit.

²⁰Seymour Sarason and George Mandler, "A Study of Anxiety and Learning," Journal of Abnormal and Social Psychology, XXXVII (April, 1952), 166.

²¹Cratty, op. cit., p. 196.

a coxswain exhibiting the same physiologic manifestations of anxiety as the oarsmen.²² Anxiety may be assumed to arise whenever the individual feels threatened.

Tutko and Richards warned that during adolescence peer pressure reaches its peak and a player is very likely affected by his teammates, his school, his buddies and his parents.²³

Husman, in an address to National College Physical Education Association for Men on sports and personality dynamics, pointed out that emotions seemed to be specific to each individual, each individual had an optimum level of emotion to perform best and that it was possible that emotions of champion athletes did not vary from contest to contest. He also stated that performers' personalities may vary with sports and may also vary at different competitive levels of the same sport.²⁴

Slusher warned that anxiety should not be mistaken as a defense reaction of the performer but rather that anxiety should be used to bring about satisfaction inherent in sport. He stated that, "Anxiety develops from a need for

²² Ulrich, op. cit., p. 262.

²³ Thomas Tutko and Jack Richards, Psychology of Coaching (Boston: Allyn and Bacon, 1971), p. 63.

²⁴ Burris Husman, "Sport and Personality Dynamics," National College Physical Education Association for Men Proceedings, 1969, 56-70.

ego fulfillment and self realization."²⁵

There have been few studies showing the levels of anxiety generated by various sports. Much of the research deals indirectly with this through studies of personality qualities found in individuals who select certain sports. Kane, in a study of 1964 Olympic competitors, found that track and field competitors were significantly lower and swimmers higher than the normal population on anxiety traits.²⁶ Using the Thurstone Temperament Schedule, Newman found no significant differences between faster and slower swimming competitors.²⁷

Kroll and Kroll and Carlson studied personality variables of wrestlers and karate participants and found no profile or pattern to distinguish these participants from the non-competitors.^{28,29} However, when Kroll studied

²⁵Howard Slusher, Man, Sport and Existence (Philadelphia: Lea and Febiger, 1967), pp. 193-5.

²⁶J. E. Kane quoted in article. Robert Trumbull, "Survey Explains Superiority of Men over Women in Sports," The New York Times, October 6, 1964, p. 47.

²⁷Earl Newman, "Personality Traits of Faster and Slower Competitive Swimmers," Research Quarterly, XXXIX (December, 1968), 1049.

²⁸Walter Kroll, "Sixteen Personality Factor Profiles of Collegiate Wrestlers," Research Quarterly, XXXVIII (March, 1967), 49.

²⁹Walter Kroll and Robert Carlson, "Discriminant Function and Hierarchical Grouping Analysis of Karate Participants' Personality Profiles," Research Quarterly, XXXVIII (October, 1967), 405.

football players he found they were not anxious as compared with the normal sample. To identify the personality characteristics Kroll and Peterson used the Minnesota Multiphasic Personality Inventory.³⁰

Singer, using Edwards Personal Preference Schedule in an investigation of personality differences between baseball and tennis players, found no significant differences in the profiles of the two groups of athletes.³¹

Booth, employed the Minnesota Multiphasic Personality Inventory in a study with sixty-three freshmen and seventy-eight varsity athletes. He found that on anxiety variables varsity athletes scores lower than the freshmen or either group of non-athletes.³² Flanagan studied personality traits in six different activities, fencing, basketball, boxing, swimming, volleyball and badminton, and pertinent to anxiety found that fencers were more stable and volleyball players significantly less stable than the other groups tested.³³

³⁰Walter Kroll and Kay Peterson, "A Study of Values, Test, and Collegiate Football Teams," Research Quarterly, XXXVI (December, 1965), 441.

³¹Robert Singer, "Personality Differences Between and Within Baseball and Tennis Players," Research Quarterly, XXXX (October, 1969), 582.

³²E. G. Booth, "Personality Traits of Athletes as Measured by the MMPI," Research Quarterly, XXIX (March, 1958), 127.

³³Lance Flanagan, "A Study of Some Personality Traits of Different Physical Activity Groups," Research Quarterly, XXII (October, 1951), 312-23.

In a study of anxiety and performance in competitive swimmers, Lampman found that an upward turn in anxiety one hour before competition facilitated performance and that swimmers performed better if pre-meet anxiety level was approximately equal to pre-season level.³⁴

At University of California at Los Angeles, Baker conducted an investigation of the effects of anxiety and stress on gross motor performance. Using the Pittsburg Revision of Manifest Anxiety, he classified sixty-one males into high anxious and low anxious groups. Each group was then given the task of duplicating a specific pattern on a treadmill for one and one-half minutes. The experimental groups were given electric shocks throughout the performance. Results showed that stress inhibited the function of the high anxious group but facilitated performance of the low anxious group.³⁵

Johnson, Hutton, and Johnson working with projection tests and college wrestlers found heightened anxiety before matches. They used the Rorschach Indices and House, Tree,

³⁴James Lampman, "Anxiety and Its Effect on the Performance of Competitive Swimmers," Completed Research, X (1968), 34.

³⁵Robert Baker, "The Effects of Anxiety and Stress on Gross Motor Performance," Completed Research, IV (1962), 29.

Person Projective Tests of Personality to test anxiety.³⁶

In another study Johnson compared a team sport, football, with an individual sport, wrestling, and found more game anxiety buildup in wrestlers and little in football players. In this study Johnson used a self styled evaluation check sheet to determine anxiety.³⁷

Cogan, in discussing reaction to stress and anxiety, emphasized that it may be caused by different stressors. He postulated that in sports self involvement was great and tension and stresses which might discourage a less involved individual were merely minor discomforts for others in achieving the goal of winning or participating in athletics.³⁸ It is well to keep in mind the importance of individual differences and individual levels of anxiety when generalizing the results of research into psychological aspects. Ryan warns that the effects of stress and anxiety upon performance will be influenced by the difficulty of the task and the proficiency of the performer.³⁹

³⁶Warren Johnson, Daniel Hutton, and Granville Johnson, "Personality Traits of Some Champion Athletes as Measured by Two Projection Tests," Research Quarterly, XXV (December, 1954), 484.

³⁷Warren Johnson, "A Study of Emotions Revealed in Two Types of Athletic Sports Contests," Research Quarterly, XX (March, 1949), 72-9.

³⁸Max Cogan, "The Stress Concept in Physical Education," National College Physical Education Association for Men Proceedings, 1964, 120-5.

³⁹Dean Ryan, op. cit., p. 40.

Vanek and Cratty in a recent book devoted a chapter to the typology of athletic activities. Here they outlined five broad categories and gave certain observations of each. In the sport activities predominately involving hand-eye coordination they pointed out that those activities were extremely sensitive to stress from outside sources and that general tension and anxiety grew toward the completion of the competition. In sports activities requiring total body coordination where aesthetic purity was the main emphasis, there was a great deal of pre-task tension due to a possibility of failure and the inability to depend on another individual in time of stress. In sports activities requiring total body mobilization of energy, much psychological tension was dispelled by the performer so a greater amount of pre-task tension was tolerable. Those sports activities in which injury or death is immediate required a great deal of self-discipline by the performer. The fifth category involved activities where anticipation of the movements of others were concerned. Here Vanek and Cratty stated that often a superior athletic performer in an individual sport was not good in a team sport. They recognized that a number of sports cut across several categories.⁴⁰

⁴⁰Miroslav Vanek and Bryant Cratty, Psychology and the Superior Athlete (New York: The Macmillan Co., 1970), pp. 39-43.

Slevin used the Spielberger Trait-State Anxiety Inventory to select high and low anxious male performers and had them perform a novel task under various conditions of audience, support, and competition. He found the high anxious performers did more poorly than the low anxious on the novel gross motor task and that competition resulted in a better performance than no competition for both groups.⁴¹

STUDIES RELATING TO ANXIETY OF WOMEN PARTICIPANTS IN COMPETITIVE SPORTS

There are relatively few studies dealing with the effects of anxiety and women competitors in sports. Ulrich's study was one of the first. She used a physiologic measure of stress, that of the eosinophil count of the blood. In this study the beginner or inexperienced individual had consistently higher emotional stress scores than the more experienced individuals. Ulrich concluded that stress in an individual varied from situation to situation and was related to psychologic components more so than to physical activity.⁴²

⁴¹Robert Slevin, "The Influence of Trait and State Anxiety Upon Performance of a Novel Gross Motor Task Under Conditions of Competition and Audience" (unpublished Doctoral dissertation, Louisiana State University, 1970), p. 89.

⁴²Celeste Ulrich, "Measurement of Stress Evidenced by College Women in Situations Involving Competition," Research Quarterly, XXVIII (May, 1957), 160-72.

In another study of psychic stress, Hennis and Ulrich used the Taylor Manifest Anxiety Scale and concluded that a change in performance may be of great importance but it would be difficult to predict improvement or hindrance. This was based on the results of the scores of the twenty-eight subjects who were given tests of steadiness, depth perception, hand-eye coordination tests. The scores were determined first, and prior to a second testing all subjects were told that their physical education instructors and graduate students were very interested in their scores. This psychic stress elicited a significantly different response in all subjects.⁴³

Kane, in a study using question and answer tests with British and other Olympic champions found that women contestants in all sports were significantly higher than males on an anxiety scale and low on ego strength. He found they suffered a low frustration tolerance.⁴⁴

In a rather comprehensive study of women athletes in intercollegiate competition Mulumphy found that individuals engaged in individual sports were less anxious than participants who engaged in team sports or than a non participant group. As a testing instrument she used the Cattell Sixteen

⁴³Gail Hennis and Celeste Ulrich, "A Study of Psychic Stress in Freshmen College Women," Research Quarterly, XXIX (May, 1958), 172.

⁴⁴Kane, loc, cit.

Personality Factor Test which contains an anxiety measure.⁴⁵

Price made a study concerning anxiety and failure factors in the performance of motor skills and concluded that the variables of manifest anxiety and failure experience did tend to affect learning.⁴⁶ Hutson, using four forms of the Illinois Personality and Attitude Testing Anxiety Battery and riding skill, found that in learning horseback riding, anxiety tended to decrease as skill increased.⁴⁷

Harrington used eighty-two women in investigating the effects of manifest anxiety on performance of a gross motor skill. The high, medium and low anxiety groups were first designated by use of scores on Taylor Manifest Anxiety Scale. Harrington alternated the tasks, easy and difficult, with the high, medium and low anxiety groups. All groups performed significantly better having the easy task last but the low anxiety group did not differ from either of the other groups in relation to when the difficult task was performed.⁴⁸

⁴⁵Theresa Malumphy, "Personality of Women Athletes in Intercollegiate Competition," Research Quarterly, XXXIX (October, 1968), 611.

⁴⁶Helen Price, "Anxiety and Failure as Factors in the Performance of Motor Tasks," Microcard Thesis (University of Iowa, 1951).

⁴⁷Margaret Hutson, "The Relationship of Anxiety Level to Learning Skills in Beginning Horseback Riding," Completed Research, VIII (1966), 69.

⁴⁸Eleanor Harrington, "Effect of Manifest Anxiety in the Performance of a Gross Motor Skill," Completed Research, VIII (1966), 41.

Peterson, Weber and Trousdale recently investigated the personality traits of women in team sports versus women in individual sports. They used one hundred fifty-six champion Amateur Athletic Union and Olympic team members in the study and tested them with the Cattell Sixteen Personality Factor Inventory. The results showed that women engaged in individual sports were high in such traits as dominance and self-sufficiency and they tended to be more self absorbed than the team sport participants. The team sports athletes too were more self sufficient than the average but also were more emotionally disciplined and responsible.⁴⁹ These traits could have implications for the building or suppressing of anxiety in the two types of sports champions.

STUDIES RELATING TO ANXIETY AS MEASURED
BY THE SPIELBERGER ANXIETY INVENTORY

Cattell reported there are at least two hundred ways to measure anxiety. He pointed out that in doing factor relationships there appeared to be a single major anxiety factor common to most. He added that later research had shown a unitary state as well as a unitary trait that could

⁴⁹Sheri Peterson, Jerome Weber, and William Trousdale, "Personality Traits of Women in Team Sports Vs. Women in Individual Sports," Research Quarterly, XXXVIII (December, 1967), 686.

be isolated and that this pattern was not dependent on any one culture.⁵⁰

Spielberger, Gorsuch and Lushene have developed a State-Trait Anxiety Inventory (STAI) composed of separate self report scales for measuring state anxiety and trait anxiety. These scales each consist of twenty statements to which the respondee marks his feelings. State anxiety refers to the emotional state of an individual subject to the threatening conditions of the moment. Trait anxiety refers to a relatively stable condition of the individual in his tendency to respond to a threatening situation. This Inventory correlates quite highly with the Taylor Manifest Anxiety Scale and with the Illinois Personality and Attitude Testing Anxiety Scale. This measuring instrument was devised in 1967, and research using the instrument has been reported primarily in the manual.⁵¹ An earlier reference was made to a study by Slevin using this testing instrument in sports activities.

The reports of studies from the manual indicate it has been used with high school groups, junior high school

⁵⁰ Raymond Cattell, "Some Psychological Correlates of Physical Fitness and Physique," Exercise and Fitness (University of Illinois, 1960), p. 138.

⁵¹ Charles Spielberger, Richard Gorsuch and Robert Lushene, The State-Trait Anxiety Inventory Test Manual for Form X (Palo Alto: Consulting Psychologists Press, 1968).

groups and college groups. The studies reported have made use of verbal tasks, computer learning methods and ego threat situations but contains no reports of studies using gross motor tasks.

Hodges used the Spielberger scales and found an increase in state anxiety scores when the stress of failure threat and shock threat were used. Incorrect knowledge of results was used to achieve failure threat and electric shock was used as the shock threat.⁵²

In a study to determine the stress effects of anxiety scores, Sachs and Diesenhaus used Spielberger's Inventory. They found a significant increase in state anxiety scores immediately preceding the final examination in a course.⁵³

Lamb investigated the effects of stress on measures of state and trait anxiety of students enrolled in a public speaking class. The students were exposed to two stress situations: two minute talks in front of an audience and blowing a balloon until it burst. The two minute talk constituted an ego threat and using the Spielberger State Anxiety Inventory, Lamb found scores varied markedly from the pre-speech scores. The second task, blowing the balloon,

⁵²Hodge, cited by Spielberger, op. cit., p. 37.

⁵³Sachs and Diesenhaus, cited by Spielberger, op. cit., p. 37.

represented physical threat. The state anxiety scores were even higher on this task than on the speech anxiety levels. The trait anxiety scores remained stable throughout the experiment.⁵⁴

Other similar studies are reported in the manual. It would appear that state anxiety and trait anxiety can be measured discriminately by the Spielberger State-Trait Anxiety Inventory.

SUMMARY OF LITERATURE REVIEWED

The review of literature yielded no studies similar to this one. However, it was apparent that anxiety states are common among all individuals and different instruments have been devised for measuring levels of anxiety. The Spielberger State-Trait Anxiety Inventory appeared to be a valid and appropriate measure for discriminating anxiety levels at all ages.

Studies dealing with anxiety and performance showed that performance was helped or hindered by the degree of anxiety present; by individual differences--some were better able to handle it; and by the task to be performed--the more complex tasks were more affected.

⁵⁴ Lamb, cited by Spielberger, *op. cit.*, p. 39.

Anxiety and its effects on women competitors have just begun to be measured. Personality trait measures include some tests of anxiety and these studies show conflicting results as to the personality factors of team sports participants and individual sports participants.

Chapter 3

PROCEDURE

OVERVIEW

The Spielberger State-Trait Anxiety Inventory was administered to six hundred eighty-two women in three age groups under sports competition conditions. The sports selected were gymnastics, swimming, tennis, track and field, basketball, field hockey, softball and volleyball. The scores on state and trait anxiety were then analyzed to determine whether differences existed among the three age groups and among the eight sports.

SELECTION OF SUBJECTS

The subjects used in this study were women who participated in selected competitive sports contests during the summer of 1970 through the spring of 1971. Six hundred eighty-two subjects were used in three age groups: one hundred forty-six subjects who were twelve and thirteen years old; two hundred sixty-four subjects who were sixteen and seventeen years old; and two hundred seventy-two subjects who were nineteen years old and older. Assignment to an age group was based on the subject's age at the time of the contest. A three months' allowance at each extreme

of age groups was made.

Girls and women who participated in the study were from junior and senior high schools, colleges and universities, and city teams and clubs in five southeastern states. The selection of subjects was limited to those individuals who regularly played on the team in the case of team sports or to an individual who regularly served as the school's or organization's representative in the individual sports. All members of teams were tested but only participants within the selected age groups were used as subjects.

All subjects used in this study completed both scales of the Spielberger State-Trait Anxiety Inventory. Any person tested who played both team and individual sports for her school was not included in the study.

The information regarding birth date, playing position, address and records held was obtained by the use of an information sheet attached to the first administered scale.

SELECTION OF SPORTS

In this study eight different sports were selected for use in obtaining scores of women participants. Four of these were team sports and four were classified as individual sports. This selection represented the sports most often engaged in by intercollegiate and interscholastic participants in the geographic area of the study. More

competition was available to women in these sports.

The individual sports selected were gymnastics, swimming, tennis and track and field. The team sports selected were basketball, field hockey, softball and volleyball. The numbers of subjects in each sport ranged from forty-one in tennis to one hundred fifty-four in volleyball. The numbers by sports and ages appear in Table 1.

SELECTION OF COMPETITIVE EVENTS

The contests selected for use in the study were those in which a particularly stressful situation was anticipated. This was determined on the basis of the size of the tournament or meet, the timing in regards to win-loss records, and the ranking of the contests in terms of championships involved.

The events selected represented a variety of tournaments such as National Junior Olympics, high school state and district tournaments, state amateur tournaments at all ages, city-wide tournaments, college invitational and regional tournaments, and selected contests between two rival schools. All contests were held in Georgia, North Carolina, Tennessee or Virginia but included participants from other states where regional or national championships were involved.

In some contests specific circumstances tended to add to the anticipated stress of the tournament. In the

Table 1
 Numbers of Women Participants in Three Age
 Groups and Eight Competitive
 Sports Events

Sports	Age Groups			Totals
	12 and 13	16 and 17	19 and up	
Gymnastics	18	18	20	56
Swimming	19	17	25	61
Tennis	-	15	26	41
Track and Field	20	19	18	57
Basketball	23	27	52	102
Field Hockey	16	66	44	125
Softball	28	32	26	86
Volleyball	<u>23</u>	<u>70</u>	<u>61</u>	<u>154</u>
Totals	146	264	272	682

tennis match between two high schools, each had an undefeated season at the time of the contest and regional rankings were to be considered in seedings for the South Carolina State Tennis Tournament to be held subsequently.

The Carolina Invitational Tennis Meet was held for the twelfth spring and was considered one of the most prestigious among women's colleges in the Carolinas.

In the Winthrop College Basketball Tournament, sanctioned by the Division of Girls and Women's Sports, representatives for the national tournament selection committee were present and teams knew invitations to the National Basketball Tournament were to be issued in the week following the Winthrop College Tournament.

At the Deep South Field Hockey Tournament and the Tidewater Field Hockey Tournament members of the selection committees were present to choose participants for the regional and national tournaments. These circumstances were considered in determining the possible stress factors of particular tournaments. Table 2 shows the selection of competitive events for each sport and age group.

SELECTION OF TESTS

After a review of testing instruments for measuring anxiety levels the Spielberger State-Trait Anxiety Inventory was selected. The Inventory consists of two scales for measuring anxiety. The Anxiety State Scale consists of

Table 2

Competitive Sports Events from Which Subjects Were
Selected for Analysis of Anxiety Levels of
Women at Three Age Groups

Sports	Events, Sites, Dates		
	Ages 12 and 13	16 and 17	19 and up
Gymnastics	Fifth Annual Girls/Womens Gymnastics Meet. Greenville, South Carolina. March, 1971.	Fifth Annual Girls/Womens Gymnastics Meet. Greenville, South Caro- lina March, 1971.	Open Invi- tational Gymnastics Champion- ships for Girls and Women. Green- ville, South Carolina. March, 1971.
	National AAU Junior Olympic Championships. Knoxville, Tennessee. August, 1970.		
Swimming	20th Annual Palmetto Open Swimming and Diving Champion- ships. Columbia, South Carolina, July, 1970.	South Caro- lina Tricentennial Indoor Swim- ming and Diving Cham- pionships. Columbia, South Caro- lina, January, 1971.	Virginia Women's Intercol- legiate Swimming Meet. Williams- burg, Virginia. December, 1971.
		20th Annual Palmetto Open Swimming and Diving Cham- pionships. Columbia, South Caro- lina. July, 1970.	

Table 2 (continued)

Sports	Events, Sites, Dates		
	Ages		
	12 and 13	16 and 17	19 and up
Tennis		High School Individual Sports Tournament. Rock Hill, South Carolina. April, 1971.	Carolinas Annual Invitational Women's Tennis Meet. Spartanburg, South Carolina. April, 1971.
		Rock Hill High School Versus York High School. Rock Hill, South Carolina. April, 1971.	
Track and Field	National AAU Junior Olympic Championships. Knoxville, Tennessee. August, 1970.	National AAU Junior Olympic Championships. Knoxville, Tennessee. August, 1970.	Winthrop College Inter-classes Track Meet. South Carolina. April, 1971.
	Columbia City Schools Junior High Schools Track Meet. Columbia, South Carolina. April, 1971.		

Table 2 (continued)

Sports	Events, Sites, Dates		
	Ages		
	12 and 13	16 and 17	19 and up
Basketball	Greenville Junior High School Girls' Basketball League. Greenville, South Carolina. December, 1970.	Senior High School Girls' Extramural Basketball Tournament. Charlotte, North Carolina. March, 1971.	Winthrop Inter-collegiate Basketball Tournament. Rock Hill, South Carolina. February, 1971.
Field Hockey	Deep South Field Hockey Association Tournament. Spartanburg, South Carolina. November, 1970.	Deep South Field Hockey Association Tournament. Spartanburg, South Carolina. November, 1970.	Deep South Field Hockey Association Tournament. Spartanburg, South Carolina. November, 1970.
	Spartanburg Country Day School Versus Charlotte Country School. Charlotte, North Carolina. October, 1970.	Tidewater Field Hockey Tournament. Richmond, Virginia. November, 1970.	Field Hockey Clinic and Sports Day. Rock Hill, South Carolina. October, 1970.
Softball	South Carolina Recreation Midget Softball Tournament. Florence, South Carolina. August, 1970.	Charlotte Parks and Recreation Women's Softball League Tournament. Charlotte, North Carolina. August, 1970.	Charlotte Parks and Recreation Women's Softball League Tournament. Charlotte, North Carolina. August, 1970.

Table 2 (continued)

Sports	Events, Sites, Dates		
	Ages		
	12 and 13	16 and 17	19 and up
Volleyball	Columbia Junior High School Girls' Volleyball Playoffs. Columbia, South Carolina. April, 1971	South Carolina High School Volleyball Tournament. Rock Hill, South Carolina. October, 1970.	Appalachian State University Volleyball Tournament. Boone, North Carolina. October, 1970.

twenty statements concerning the feelings of the subject at that particular moment, thus measuring the state of his anxiety. The subject responds with one of four choices indicating his feelings then.

The Anxiety Trait Scale also consists of twenty statements concerning the feelings of the subject but are more general in nature and reflect his usual anxiety level. Again the subject responds with one of four choices to state his feelings.

A copy of each of the scales appears in Appendix A.

This Inventory was selected over the others reviewed as it provided a discriminatory scoring scale. It has been used successfully with junior high school ages, high school ages, college ages and has norms available for these groups for both males and females.

It is very easy to administer to large groups or to individuals and can be done in approximately five to eight minutes.

It appeared to fit the purpose and design of the study quite well.

ADMINISTRATION OF TESTS

The Spielberger State Anxiety Scale was administered to all subjects an hour or less before competition. The coaches were contacted ahead of time and permission secured to administer the scale. The scale was administered as

close to the time of competition as feasible but within the time limit stated above. The author administered all State Anxiety scales. A quiet place was obtained and subjects were seated.

The administration was made to groups of two or more in the event of individual competition and to one team at a time in the event of team competition. A prepared statement was read to the subjects. This statement revealed the purpose of the study but avoided use of the word "anxiety" or its synonyms. It urged cooperation and a true response to the statements. A copy of the statement read appears in Appendix B.

The pencils, scales and information sheets were distributed and after filling in the information sheet, the subjects were asked to follow the printed directions on the sheet as the author read them aloud. The subjects were then asked to respond to the scale. With the twelve and thirteen year olds on a few occasions it was necessary to assure them that some statements were indeed of a similar nature. As the subject completed the scale and returned it, she was told that at some later day a follow up scale would be administered.

The Anxiety Trait Scale was administered after the competition and when no apparent anxiety or stress could be perceived by the examiner. Spielberger states that Trait Anxiety scales are relatively unaffected by the conditions

under which they are administered.¹ The Trait Anxiety scale was administered in most cases by the author but where time and distance did not make this possible, the coach administered the scale. In those cases, the coach was instructed on administration of the scale. Again the directions were read aloud and the respondee was urged to give a true response to the statements concerning her general feelings.

The Anxiety Trait scale was then attached to the subject's Anxiety State scale for scoring purposes.

ANALYSIS OF DATA

The data were processed in the Computer Research Center at Louisiana State University, Baton Rouge, Louisiana. The data were analyzed to determine the significance of differences among the means of state anxiety scores of women in three different age groups competing in eight different sports.

The trait anxiety scores were analyzed to determine significance of differences among the means of women in three different age groups competing in eight sports.

In order to determine the significance of the differences the least squares method of analysis of variance was used.

¹Charles Spielberger, Richard Gorsuch, and Robert Luschene, The State-Trait Anxiety Inventory Test Manual for Form X (Palo Alto: Consulting Psychologists Press, 1968), p. 4.

For purposes of additional analysis comparisons of findings for state and trait mean scores were made by observation.

Chapter 4

PRESENTATION AND ANALYSIS OF DATA

INTRODUCTION

The Spielberger State-Trait Anxiety Inventory was administered to six hundred eighty-two women in three age groups under competitive sports conditions. The age groups were twelve and thirteen years, sixteen and seventeen years, and nineteen years and older. Competitive events were selected in the following sports: gymnastics, swimming, tennis, track and field, basketball, field hockey, softball and volleyball. Scores on the state and trait anxiety scales were then analyzed to determine whether differences existed among the three age groups and among the eight sports.

SIGNIFICANCE OF DIFFERENCES OF STATE ANXIETY SCALE SCORES

The scores made by the six hundred eighty-two women on state anxiety scales were analyzed first. To determine whether there were significant differences among the age groups, among sports and among age groups by sports, the least squares method of analysis of variance was applied.

The results are presented in Table 3.

Table 3

Analysis of Variance of State Anxiety Scores of
Women of Three Age Groups in
Eight Competitive Sports

SOV	df	Mean Squares	F	P
Age	2	411.994	8.35	.01*
Sport	7	556.082	11.27	.01**
Age X Sport	13	248.030	5.03	.01***
Error	659	49.354		

*F .01=4.65

**F .01=2.69

***F .01=2.24

Differences in State Anxiety
Scores by Age Groups

As shown in Table 3 an F ratio of 8.35, significant at the .01 level of confidence, indicated differences in state anxiety did exist among the age groups. The most anxious group, as shown in Table 4, was composed of subjects who were twelve and thirteen years old and the least anxious group was made up of subjects who were nineteen years old and older. The level of state anxiety went down as age increased. This is shown in Figure 1. This significance tended to support the hypothesis that younger women

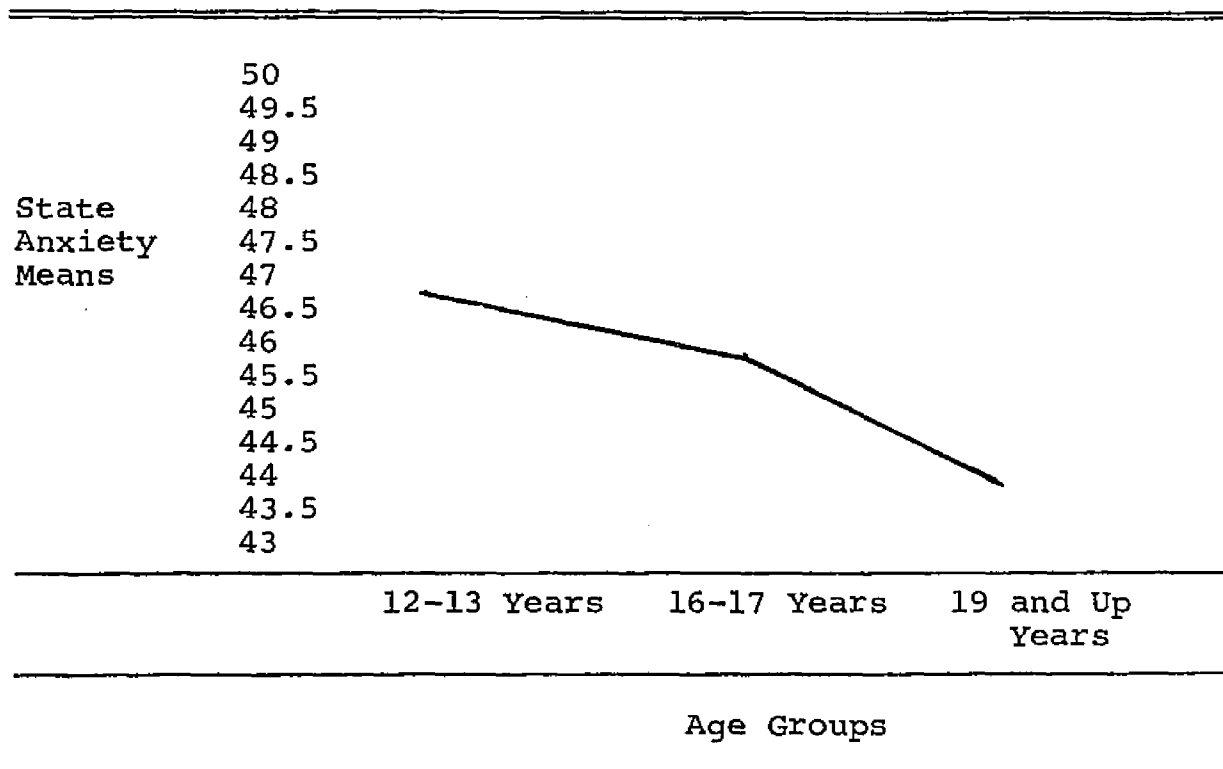


Figure 1

Differences in State Anxiety Means of
Women Participants in Competitive
Sports in Three Age Groups

experience greater state anxiety in selected competitive sports than older women.

Table 4
State Anxiety Mean Scores of Women in Three Age Groups Who Competed in Eight Selected Sports

Age Group	Number of Subjects	Mean Score
12-13 years	146	46.84
16-17 years	264	45.97
19 years and older	272	43.93
Overall	682	45.58

Differences in State Anxiety Scores Among Sports

As shown in Table 3 there were significant differences among the anxiety scores of women in the sports groups. The F ratio of 11.27 was significant at the .01 level of confidence. Table 5 shows the means of these sports.

The mean of scores of gymnastics participants was the highest and the mean of the scores of field hockey participants was the lowest. The means of all four of the individual and dual sports--gymnastics, swimming, tennis and track and field--were higher than the overall mean. The means of all four of the team sports--basketball, field hockey, softball and volleyball--were lower than the overall mean and lower than the mean of any individual and dual sport. This tended to support the hypothesis that women participants in individual or dual sports experience higher

levels of state anxiety than do women engaged in team sports competition. Figure 2 shows the ranking of state anxiety score means by sports.

Table 5

State Anxiety Mean Scores of Women Who
Competed in Eight Competitive Sports

Sport	Number of Subjects	Mean Score
Gymnastics	56	50.859
Swimming	61	46.605
Tennis	41	45.754
Track and Field	57	47.806
Basketball	102	43.174
Field Hockey	125	41.705
Softball	86	44.596
Volleyball	154	44.185

Differences in State Anxiety
Scores Among Sports by
Age Groups

In Table 3 the interaction F ratio of 5.03 was significant at the .01 level of confidence. This showed that the effects of age or sport were not consistent over the other variable on state anxiety scores. An inspection of the change of direction column in Table 6 shows that changes of mean state anxiety scores were not always in the same direction. The means of state anxiety scores for tennis, track and field, softball and volleyball participants went

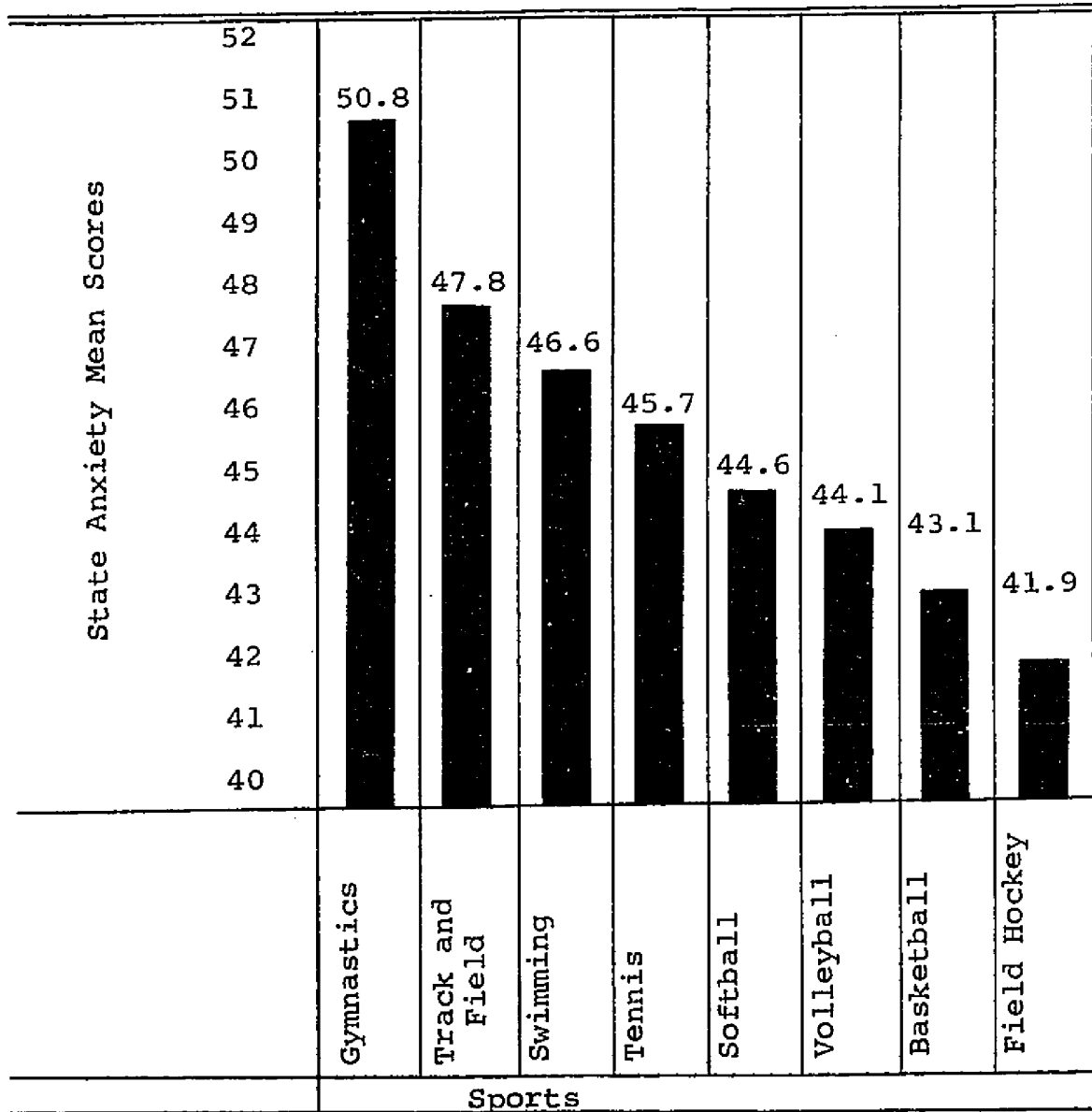


Figure 2

State Anxiety Mean Scores of Women
in Eight Competitive Sports

Table 6

State Anxiety Scores of Women in
Three Age Groups and Eight
Competitive Sports

Sport	12-13 Years Age Group	16-17 Years Age Group	19 Years and Up Age Group	Direction of Change
Gymnastics	49.11	52.17	51.30	
Swimming	45.74	48.00	46.08	
Tennis	None	47.40	42.85	
Track and Field	51.65	48.18	43.61	
Basketball	43.22	43.56	42.75	
Field Hockey	38.53	42.24	44.34	
Softball	50.71	42.84	40.23	
Volleyball	48.78	43.41	40.28	
				12 16 19 13 17 up

down as age increased. The means of basketball players were approximately the same for all age groups but did drop a little for each consecutive age group. Mean scores of field hockey participants had a different pattern. The lowest mean was in the twelve and thirteen year old age group and the anxiety level increased as age increased. The differences among the means in the age groups in swimming participants were lowest for the twelve and thirteen year olds, increased for sixteen and seventeen year olds but decreased at nineteen; however, they did not drop as low as the twelve and thirteen year old subjects' mean. This same pattern was evidenced in gymnastics participants although the decrease in mean state anxiety scores from the sixteen and seventeen year old subjects to the nineteen year olds and older was not as sharp as among swimming participants.

In the twelve and thirteen year old subjects the mean of the state anxiety scores of the track and field group was the highest of the eight sports and field hockey mean score was the lowest. In the sixteen and seventeen year old subjects the mean scores of state anxiety were highest in gymnastics and lowest in field hockey. For subjects who were nineteen years and older the gymnastics participants experienced the highest mean score on the state anxiety scale and the softball players exhibited the lowest state anxiety scores.

In the twelve and thirteen year old subjects the greatest differences among the mean state anxiety scores

were found among the least anxiety producing sports: field hockey, basketball, swimming and softball. In the sixteen and seventeen year old group the greatest difference in mean scores was found between the two sports with the highest ranking anxiety scores, gymnastics and track and field. The nineteen and older age group revealed the greatest difference between sports with highest anxiety means, gymnastics and swimming.

SIGNIFICANCE OF DIFFERENCES OF TRAIT ANXIETY SCALE SCORES

The trait anxiety factor is considered a stable trait and should not fluctuate due to competition but should reveal the anxiety level the individual usually feels. To determine whether there were significant differences among age groups, among sports, and among age groups by sports the least squares method of analysis of variance was applied. The results are presented in Table 7. The differences among the age groups were significant at the .01 level of confidence. The differences among the means of trait anxiety scores among the sports were significant at the .05 level of confidence and the interaction between sports and ages was significant at the .05 level of confidence.

Differences in Trait Anxiety Scores by Age Groups

From Table 7 an F ratio, significant at the .01 level of confidence, indicated that significant differences

on trait anxiety did exist among the three age groups. The age group exhibiting the highest mean value was the sixteen and seventeen year old group as shown in Table 8.

Table 7

Analysis of Variance of Trait Anxiety Scores of Women of Three Age Groups in Eight Competitive Sports

SOV	df	Mean Squares	F	P
Age	2	228.953	5.32	.01*
Sport	7	96.297	2.24	.05**
Age X Sport	13	85.551	1.99	.05***
Error	659	43.062		

*F .01=4.65	**F .01=2.69	***F .01=2.24
F .05=3.00	F .05=2.03	F .05=1.74

Table 8

Trait Anxiety Mean Scores of Women of Three Age Groups Who Competed in Eight Selected Sports

Age Group	Number of Subjects	Mean Score
12-13 Years	146	38.94
16-17 Years	264	39.25
19 & up Years	272	37.28
Overall	682	38.49

The lowest trait anxiety mean was in the nineteen years and older group. The twelve and thirteen year old

group showed a trait anxiety score which was between these and nearer the overall mean of the six hundred eighty-two women subjects.

Differences in Trait Anxiety
Scores Among Sports

Table 7 indicated there were significant differences in trait anxiety mean scores among the eight sports. These differences were significant at the .05 level of confidence. The sports ranked in the following order from high trait anxiety means to low trait anxiety means: gymnastics, swimming, volleyball, track and field, softball, tennis, field hockey and basketball. The results appear in Table 9.

Table 9

Trait Anxiety Mean Scores of Women
in Eight Competitive Sports

Sport	Number of Subjects	Mean Score
Gymnastics	56	40.26
Swimming	61	39.71
Tennis	41	37.87
Track and Field	57	38.57
Basketball	102	36.63
Field Hockey	125	37.86
Softball	86	38.01
Volleyball	154	39.03

The participants in gymnastics exhibited the greatest mean trait anxiety value and those in basketball

exhibited the lowest trait anxiety mean. In the trait anxiety analysis volleyball participants ranked third high in trait anxiety mean scores and this was the only one of the team sport means to be higher than the overall trait anxiety mean of 38.49. Tennis was the only individual or dual sport with a lower anxiety mean score than the overall trait anxiety average.


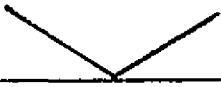
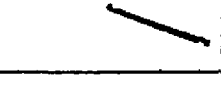

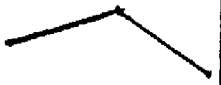


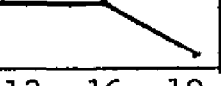
Differences in Trait Anxiety
Scores Among Sports by
Age Groups

Table 7 showed that significant differences on trait anxiety scores existed in the interaction of age and sport. The F ratio of 1.99 was significant at the .05 level of confidence. This was interpreted to mean that the effects of age or sport are not consistent over the other variable on trait anxiety scores, but differences exist among these. Table 10 indicated the directions of changes for each age group within the particular sport.

In trait anxiety the mean scores made by the participants in tennis, track and field, softball and volleyball tended to decrease as age increased. The trait anxiety mean scores of field hockey players tended to increase as age increased. The trait anxiety scores of gymnastics and basketball participants increased to the sixteen and seventeen year old age group and then decreased to the nineteen and up year old group to a point below the twelve and thirteen year olds' means. The swimming trait anxiety mean

Table 10

Trait Anxiety Scores of Women of
Three Age Groups and Eight
Competitive Sports

Sport	12-13 Years Age Group	16-17 Years Age Group	19 Years and Up Age Group	Direction of Change
Gymnastics	38.72	42.44	39.60	
Swimming	40.58	38.12	40.44	
Tennis	None	38.13	37.15	
Track and Field	40.30	40.37	35.06	
Basketball	36.52	38.52	34.85	
Field Hockey	36.73	37.70	39.16	
Softball	40.43	38.78	34.81	
Volleyball	39.95	39.93	37.19	
				12 16 19 13 17 up

scores decreased from age twelve and thirteen to ages sixteen and seventeen and then rose again with the nineteen and up year olds.

COMPARISON OF TRAIT AND STATE ANXIETY SCORES

Trait anxiety is a relatively stable quality which an individual possesses while state anxiety reflects the anxiety of a situation. Persons who are higher in trait anxiety often exhibit higher levels of state anxiety.

Comparison of Trait and State Anxiety Scores by Age Groups

A comparison of trait and state anxiety scores by age groups was made by graphical representation. Figure 3 shows the state anxiety mean scores by age groups and the trait anxiety mean scores by age groups. Figure 3 shows that the direction of change by age groups was not the same in state and trait anxiety. In trait anxiety the level increased from the subjects twelve and thirteen years old to the subjects sixteen and seventeen years old and then decreased in subjects nineteen and older. In state anxiety there was a decrease with age increase at each age group. The difference in state and trait anxiety means was greater at the twelve and thirteen year old age group while the other two age groups showed approximately the same rate of difference in state and trait anxiety mean scores.

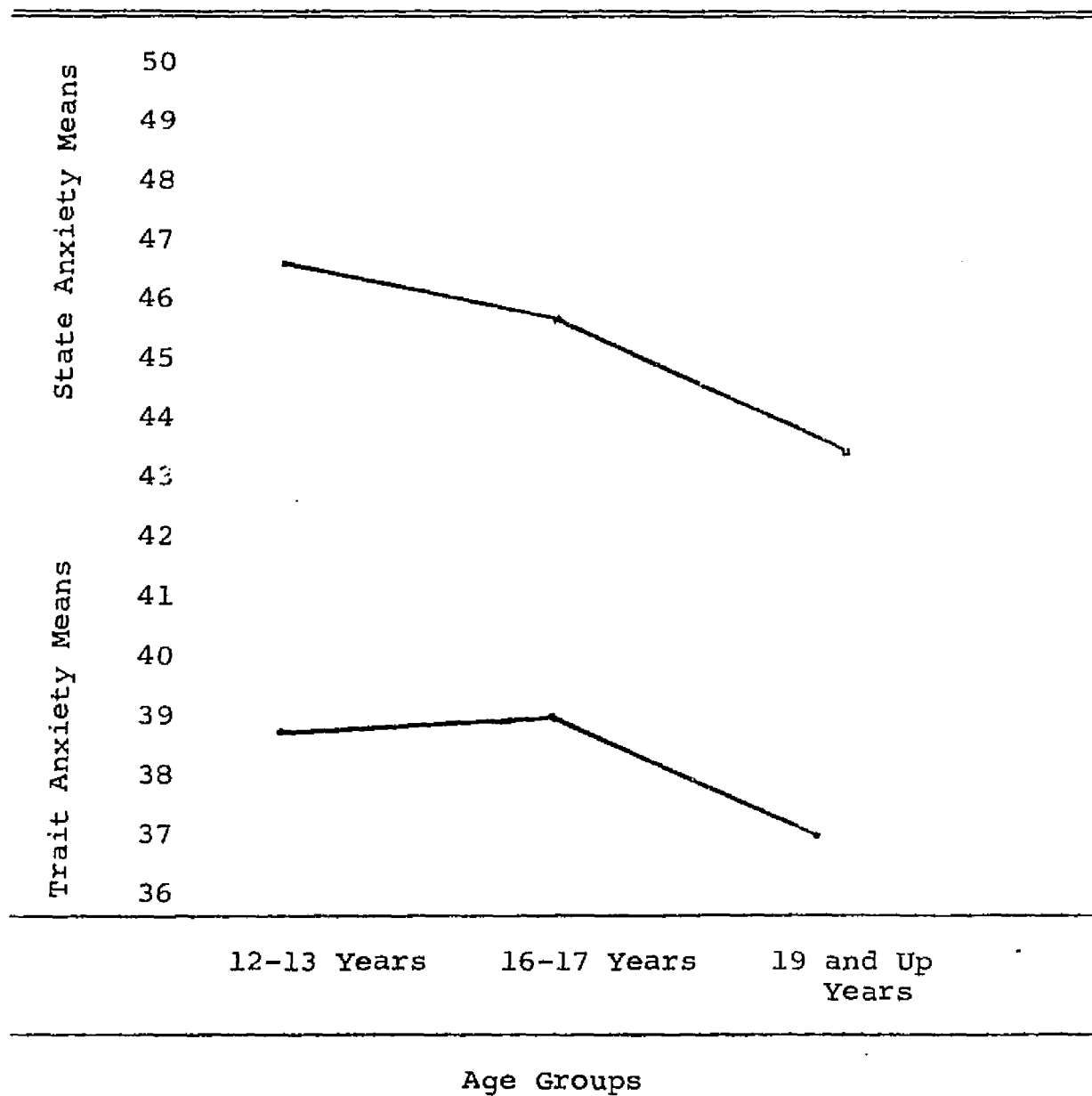


Figure 3

Comparisons of State and Trait Anxiety Mean Scores
of Women in Three Age Groups Engaged
in Competitive Sports

Comparison of Trait and State Anxiety Scores by Sports

A comparison of trait and state anxiety scores by sports was made. Figure 4 shows the comparisons of the trait and state anxiety mean scores for the eight sports. Gymnastics had the highest mean value in both trait and state anxiety. Basketball players exhibited the lowest trait anxiety scores but field hockey players exhibited the lowest state anxiety means. Tennis players had low trait anxiety means but high state anxiety means while volleyball players exhibited high trait anxiety means and low state anxiety means.

Comparison of Trait and State Anxiety Scores Among Sports by Age Groups

The patterns were not the same in trait anxiety scores as in state anxiety scores when analyzed among age groups by sports. The direction of changes by age groups among sports is presented in Figure 5. The direction of change was the same in a number of sports although the angle of the change was sharper in some sports than others.

Gymnastics, tennis, track and field, field hockey, softball and volleyball changes were in the same direction in both state and trait anxiety mean scores although the degree of increase or decrease varied in the sports.

Basketball scores increased in the sixteen and seventeen year old age group in trait anxiety but no appreciable

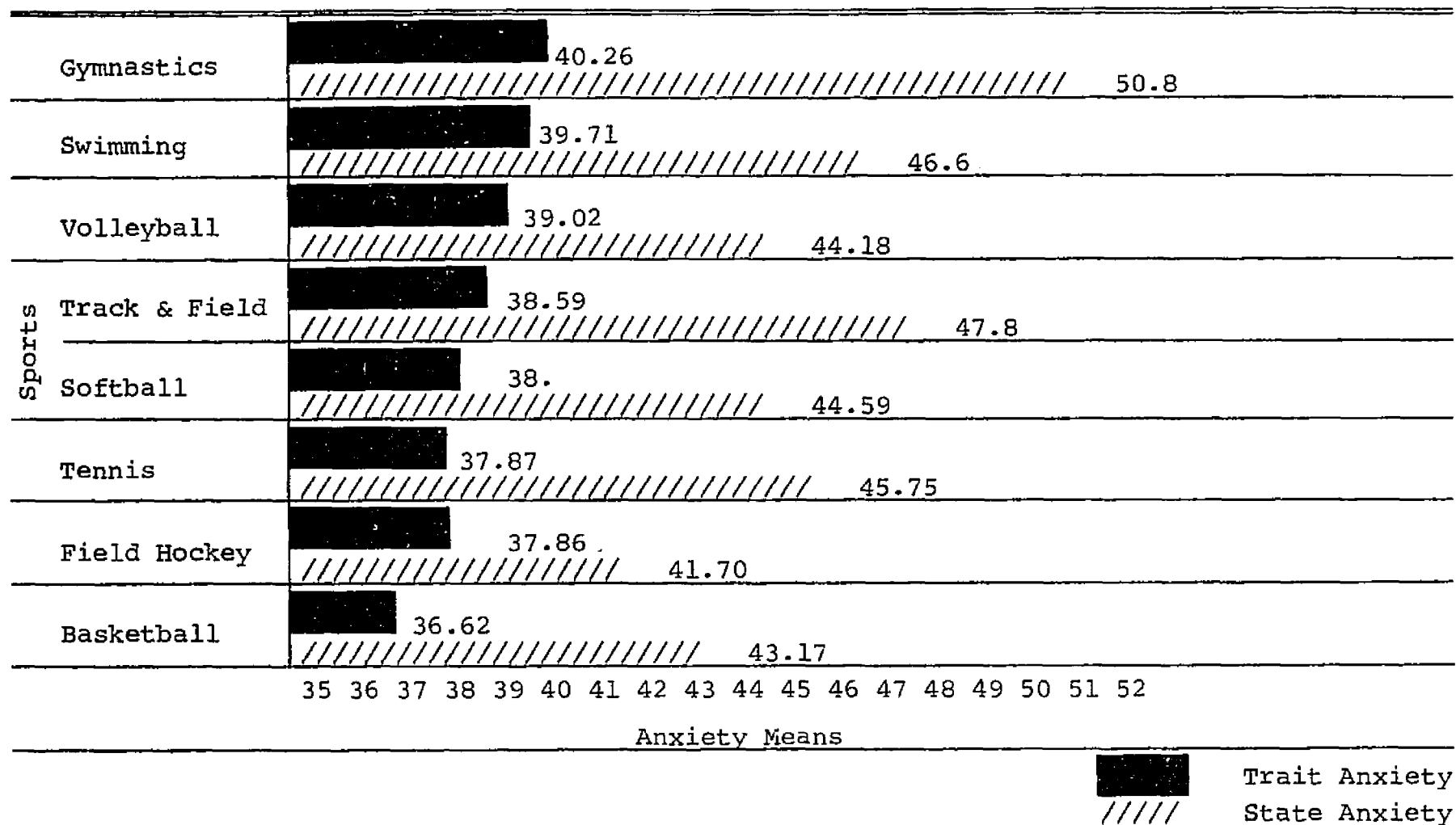


Figure 4

A Comparison of Trait and State Anxiety Mean Scores Experienced by Women in Eight Competitive Sports

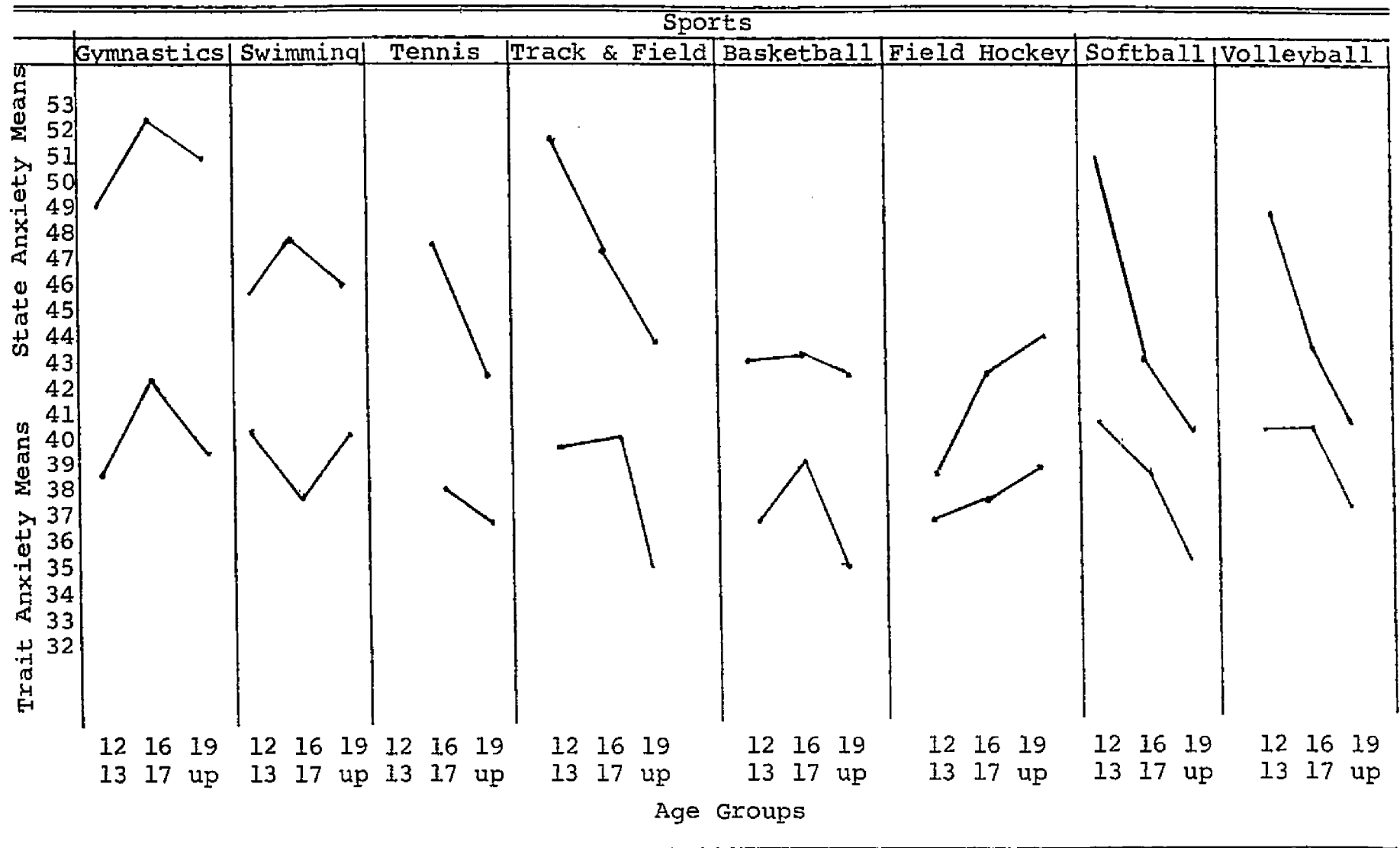


Figure 5. Comparisons of Directional Changes in State and Trait Anxiety Mean Scores of Women at Three Age Groups in Eight Competitive Sports

change was noted in state anxiety with this age group. The trait anxiety scores of swimming participants decreased in the sixteen and seventeen year old age group but the state anxiety means of these same participants increased in that age group.

Chapter 5

SUMMARY, FINDINGS, DISCUSSION OF FINDINGS AND CONCLUSIONS

SUMMARY

It was the purpose of this study to analyze state and trait anxiety experienced in competitive sports by women at three different age levels. The levels included twelve and thirteen year olds, sixteen and seventeen year olds and subjects nineteen years old and older. The anxiety scores were also analyzed according to sports.

Eight sports were selected for the study. These included four team sports--basketball, field hockey, softball and volleyball--and four individual or dual sports--gymnastics, swimming, tennis and track and field.

The subjects used were six hundred eighty-two women who engaged competitively in these eight sports. One hundred forty-six were twelve and thirteen years old, two hundred sixty-four were sixteen and seventeen years old and two hundred seventy-two were nineteen years old or older. These groups made up the sample.

The competitive events were selected on the basis of anticipated stressful situations. This was determined by the size of the tournament, the ranking of the contest in

terms of championships involved and the win-loss records as regarded timing of the event. The events selected represented a variety of tournaments such as the Amateur Athletic Union National Junior Olympics, state amateur tournaments, city tournaments, college invitational and regional tournaments, and high school state and district tournaments. All data were collected during the year, June 1970 - May 1971, at tournaments held in Georgia, North Carolina, South Carolina, Tennessee and Virginia.

The Spielberger State-Trait Anxiety Inventory Scales were administered to each subject. The State Anxiety Scale was administered within one hour before competition. The Trait Anxiety Scale was administered later when no stressful situation was evident.

The scores on state anxiety were analyzed by age groups, by sports groups and by age groups in sports. Analysis of Variance was used to determine significance of differences between means.

The same statistical procedure was followed for the scores on trait anxiety. Graphic comparisons between state and trait anxiety scores were made.

FINDINGS

The findings of the study were as follows:

1. Significant differences of mean state anxiety scores did exist among the age groups. The most state

anxious group in the study was composed of subjects who were twelve and thirteen years old and the least state anxious subjects were those who were nineteen years and older. The level of state anxiety decreased as age increased.

2. Significant differences in state anxiety scores did exist among the eight sports groups tested. Gymnastics participants were the most state anxious group followed in order by participants in track and field, swimming, tennis, softball, volleyball, basketball and field hockey.

3. Each of the four individual sports groups had higher mean state anxiety scores than did each of the four team sports groups.

4. The interaction of state anxiety scores of the three different age groups and eight sports groups was statistically significant indicating that the effects of age or sport were not consistent over the other variable on state anxiety scores.

5. Significant differences among trait anxiety scores did exist among the three age groups. The most trait anxious group in this study was made up of subjects sixteen and seventeen years old. Those subjects who were nineteen years or older had the lowest trait anxiety mean. Trait anxiety increased with age to sixteen and seventeen and then decreased in the nineteen years and older group.

6. There were significant differences between means of trait anxiety scores grouped by sports. The gymnastics

group had the highest trait anxiety mean followed in order by swimming, volleyball, track and field, softball, tennis, field hockey and basketball.

7. There was no grouping pattern of individual sports versus team sports although tennis was the only individual sport to have a lower trait anxiety than the overall mean and volleyball was the only team sport to have a trait anxiety mean higher than the overall mean.

8. Significant differences in trait anxiety scores did exist among age groups by sports. This significant interaction showed that the effects of age or sport were not consistent over the other variable on the trait anxiety scores.

DISCUSSION OF FINDINGS

State Anxiety Scores

It was hypothesized that as age increased the state anxiety of women involved in competitive sports events would decrease. The analysis of data supported this hypothesis. This may be due to experience in competitive sports situations. The intensive competition itself may not diminish but an individual's ability to handle it may improve with repeated experiences and exposures, thus it could be less anxiety producing. The least anxious group in the study, the nineteen and up year olds, had had more opportunities for experience in competitive events and it is likely that

the repeated exposures influenced their feelings of anxiety immediately preceding the competition.

There were differences in anxiety scores among the sports groups. State anxiety scores of subjects in individual or dual sports--gymnastics, swimming, tennis, track and field--were higher than scores of subjects in team sports--basketball, field hockey, softball, volleyball. This tended to support the hypothesis that individual or dual sports were more state anxiety producing.

Gymnastics participants had the highest state anxiety mean score. This could be explained in part by the theories of Vanek and Cratty that in those activities requiring total body coordination, where aesthetic purity was the main emphasis, a great deal of pre-task tension would be evident.¹ Track and field participants, followed by swimmers, had the next highest state anxiety scores. In these two sports the individual competes against a clock and/or himself as opposed to play dependent upon the moves of others. Attention to form is a factor in these sports as well as in gymnastics; the time factor is an additional stressor.

It was interesting to note that the fourth ranking sport, and lowest ranking individual sport was tennis. Here the play of an individual is dependent to some extent on the play of her opponent.

¹Miroslav Vanek and Bryant Cratty, Psychology and the Superior Athlete (New York: The Macmillan Co., 1970), pp. 39-43.

On state anxiety scores all four of the team sports had means below the overall mean. In order of highest ranking team sport in state anxiety they were softball, volleyball, basketball and field hockey. In team sports performances are dependent on the play and anticipation of the play by others during the games. A poorer than usual performance may be masked by skill, cooperation and team play of teammates. The element of fear of failure would generally not be as great in team sports competition as in individual sports performances.

Softball players had the highest state anxiety of all team sports participants. In this sport the individual's performance is dependent upon the performance of teammates and opponents; yet when the player becomes a batter or pitcher, the sport takes on some of the same characteristics of an individual sport. This could account in part for its high state anxiety ranking among the team sports groups.

Trait Anxiety Scores

Significant differences among trait anxiety mean scores did exist among the three age groups. The trait anxiety scores did not follow a pattern of decrease with increasing age. The lowest trait anxiety mean score was in the group nineteen years old and older, and the highest trait anxiety scores were experienced by the sixteen and seventeen year olds.

Trait anxiety is viewed as a more or less stable element in the feelings of an individual and it may be that the continued adjustment to "life role" of the sixteen and seventeen year olds may be the precipitating factor in the higher trait anxiety scores experienced by this group. Peer pressure reaches its peak during this age group and the need for approval may influence the trait anxiety level more in this age group.² The twelve and thirteen year olds had a higher trait anxiety mean score than did the subjects nineteen years and older. This younger group, moving into preadolescence and adolescence, also may be influenced more by peer pressure.

The differences in trait anxiety scores also were significant among the sports groups. There was no definite grouping pattern of individual versus team sports on the trait anxiety scores. However, tennis players were the only individual sports participants to have lower trait anxiety mean score than the overall mean.

Gymnastics had the highest trait anxiety mean followed by swimming then volleyball. Volleyball was the only team sport with a ranking on trait anxiety higher than the overall mean. Volleyball maintained its relatively high trait anxiety ranking in all three age groups.

²Thomas Tutko and Jack Richards, Psychology of Coaching (Boston: Allyn and Bacon, 1971), p. 63.

Comparisons of Trait and
State Anxiety Scores

In order to develop a clearer understanding of trait and state anxiety scores, comparisons through further analysis by observation were made.

Spielberger found that individuals who are higher in trait anxiety usually exhibit higher state anxiety because they tend to perceive more situations as threatening. He further found that whether or not people who differ in trait anxiety showed the same differences in state anxiety depended upon how the specific situation was perceived and this perception was greatly influenced by an individual's past experiences.³

In both trait and state anxiety mean scores the pattern of change was not the same for the age groups. The highest trait anxious group, the sixteen and seventeen year olds, was not the highest state anxious group. The sixteen and seventeen year old subjects may not have perceived the competitive sports themselves as threatening as did the twelve and thirteen year old subjects. The nineteen years old and older subjects had the lowest scores on both trait and state anxiety.

³Charles Spielberger, Richard Gorsuch, and Robert Luschene, The State-Trait Anxiety Inventory, Test Manual for Form X (Palo Alto: Consulting Psychologists Press, 1968), p. 3.

The pattern of change in both state and trait anxiety mean scores was not the same in the sports groups. One or two changes in the ranking patterns were noted for the majority of the sports groups. The patterns of change in mean state and trait anxiety scores by age groups in the sports were different. No overall directional patterns for the relationship between trait and state anxiety could be discerned.

CONCLUSIONS

Based on the findings and within the limitations of this study, the following conclusions seem justified:

1. State anxiety levels of women engaged in competitive sports decrease with age.
2. State anxiety levels of women engaged in competitive sports differ among sports.
3. The effects of age upon state anxiety are not consistent in all sports nor the effects of sports upon state anxiety consistent for varying age levels.
4. Trait anxiety levels of women engaged in competitive sports are significantly different at three age levels.
5. Trait anxiety levels of women engaged in competitive sports differ among sports.

6. The effects of age upon trait anxiety are not consistent in all sports nor are the effects of sports upon trait anxiety consistent for varying age levels.

SELECTED BIBLIOGRAPHY

A. BOOKS

- Appley, Mortimer, and Richard Trumbull. Psychological Stress. New York: Appleton-Century-Crofts, 1967.
- Basowitz, Harold, Harold Persky, Sheldon Korchin, and Roy Grinker. Anxiety and Stress. New York: Blakiston, 1955.
- Cratty, Bryant J. Movement Behavior and Motor Learning. Philadelphia: Lea and Febiger, 1967.
- _____. Psychology and Physical Activity. Englewood Cliffs: Prentice Hall, 1968.
- Division for Girls and Women's Sports. Philosophy and Standards for Girls and Women's Sports. Washington: National Education Association, 1969.
- _____. DGWS Research Reports: Women in Sports. Washington: National Education Association, 1971.
- Johnson, Warren (ed.). Science and Medicine of Exercise and Sports. New York: Harper-Row Co., 1960.
- Ley, Katherine. Administration of High School Athletics. Washington: National Education Association, 1963.
- Neal, Patsy. Basketball Techniques for Women. New York: Ronald Press, 1966.
- _____. Coaching Methods for Women. Reading: Addison-Wesley, 1969.
- Sanborn, Marian, and Betty Hartman. Issues in Physical Education. Philadelphia: Lea and Febiger, 1964.
- Singer, Robert. Motor Learning and Human Performance. New York: The Macmillan Company, 1968.
- Slusher, Howard. Man, Sport and Existence. Philadelphia: Lea and Febiger, 1967.

- Slusher, Howard, and Aileene Lockhart. Anthology of Contemporary Readings. Dubuque: W. C. Brown, 1966.
- Tecce, Joseph. Effects of Stress on Paired Associate Learning and Recall as a Function of Emotionality, Reinforcement, and Response Competition. Washington: Catholic University Press, 1961.
- Trotter, Betty Jane. Volleyball for Girls and Women. New York: Ronald Press, 1965.
- Tutko, Thomas, and Jack Richards. Psychology of Coaching. Boston: Allyn and Bacon, 1971.
- Vanek, Miroslav, and Bryant Cratty. Psychology and the Superior Athlete. New York: The Macmillan Company, 1970.

B. PERIODICALS

- Ausubel, David, Herbert Schiff, and Morton Goldman.
"Quality Learning Characteristics in the Normal Learning Process Associated with Anxiety," Journal of Abnormal and Social Psychology, XXXVIII (October, 1953), 537-47.
- Baker, Robert. "The Effects of Anxiety and Stress on Gross Motor Performance," Completed Research, IV (1962), 29.
- Barnes, Mildred. "Officiating and Amateur Status in Girls and Women's Sports," Journal of Health, Physical Education and Recreation, XXXIX (October, 1968), 24-27.
- Booth, E. G. "Personality Traits of Athletes as Measured by the MMPI," Research Quarterly, XXIX (March, 1958), 127-38.
- Cattell, Raymond. "Some Psychological Correlates of Physical Fitness and Physique," Exercise and Fitness, University of Illinois, 1960, 138-51.
- _____. "The Nature and Measurement of Anxiety," Scientific American, CCVIII (1963), 97-99.
- Cheska, Alyce. "Current Developments in Competitive Sports for Girls and Women," Journal of Health, Physical Education and recreation, XXXXI (March, 1970), 86-91.

- Cogan, Max. "The Stress Concept in Physical Education," National College Physical Education Association for Men Proceedings, 1964, 120-5.
- Flanagan, Lance. "A Study of Some Personality Traits of Different Physical Activity Groups," Research Quarterly, XXII (October, 1951), 3-23.
- Hale, Creighton. "Athletics for Pre High School Age Children," Journal of Health, Physical Education and Recreation, XXX (December, 1959), 19-21.
- Harrington, Eleanor. "Effect of Manifest Anxiety in the Performance of a Gross Motor Skill," Completed Research, VIII (1966), 41.
- Hennis, Gail, and Celeste Ulrich. "A Study of Psychic Stress in Freshmen College Women," Research Quarterly, XXIX (May, 1958), 172-9.
- Husman, Burris. "Sport and Personality Dynamics," National College Physical Education Association for Men Proceedings, 1969, 56-72.
- Hutson, Margaret. "The Relationship of Anxiety Level to Learning Skills in Beginning Horseback Riding," Completed Research, VIII (1966), 69.
- Johnson, Warren, Daniel Hutton, and Granville Johnson. "Personality Traits of Some Champion Athletes as Measured by Two Projection Tests," Research Quarterly, XXV (December, 1954), 484-5.
- Johnson, Warren. "A Study of Emotions Revealed in Two Types of Athletic Sports Contests," Research Quarterly, XX (March, 1949), 72-9.
- Kroll, Walter. "Sixteen Personality Factor Profiles of Collegiate Wrestlers," Research Quarterly, XXXVIII (March, 1967), 49-57.
- Kroll, Walter, and Robert Carlson. "Discriminant Function and Hierarchical Grouping Analysis of Karate Participants' Personality Profiles," Research Quarterly, XXXVIII (December, 1967), 405-11.
- Kroll, Walter, and Kay Peterson. "A Study of Values, Tests and Collegiate Football Teams," Research Quarterly, XXXVI (December, 1965), 441-7.

- Lakie, William. "Personality Characteristics of Certain Groups of Intercollegiate Athletes," Research Quarterly, XXXIII (December, 1962), 566-73.
- Lampman, James. "Anxiety and Its Effect on the Performance of Competitive Swimmers," Completed Research, X (1968), 34.
- Lazarus, Richard, James Deese, and Sonia Osler. "Effects of Psychological Stress upon Performance," Psychology Bulletin, LIV, 4 (1952), 293.
- Ley, Katherine. "The Roots and the Tree," Journal of Health Physical Education and Recreation, XXXIII (September, 1962), 34-6.
- Malumphy, Theresa. "Personality of Women Athletes in Intercollegiate Competition," Research Quarterly, XXXIX (October, 1968), 611-20.
- Martens, Rainer, and Daniel London. "Effect of Anxiety, Competition and Failure on Performance of Complex Motor Task," Journal of Motor Behavior, I, 1 (1969), 1-10.
- McCue, Betty. "Constructing an Instrument for Evaluation of Attitudes Toward Intensive Competition in Team Games," Research Quarterly, XXIV (May, 1953), 205-9.
- McGee, Rosemary. "Comparison of Attitudes Toward Intensive Competition in High School Girls," Research Quarterly, XXVII (March, 1956), 60-73.
- Newman, Earl. "Personality Traits of Faster and Slower Competitive Swimmers," Research Quarterly, XXXIX (December, 1968), 1049-53.
- Ogilvie, Bruce. "The Unconscious Fear of Success," Quest, X (May, 1968), 35-9.
- Peterson, Sheri, Jerome Weber, and William Trousdale. "Personality Traits of Women in Team Sports Vs. Women in Individual Sports," Research Quarterly, XXXVIII (December, 1967), 686-90.
- Ryan, Dean. "What Does Psychology Have to Offer Coaches and Trainers?" National College Physical Education Association for Men Proceedings, 1965, 34-8.
- _____. "Effect of Stress on Motor Performance and Learning," Research Quarterly, XXXIII (March, 1962), 111-9.

- Saranson, Seymour and George Mandler. "A Study of Anxiety and Learning," Journal of Abnormal and Social Psychology, XXXXVII (April, 1952), 166-73.
- Silverton, Robert. "Anxiety and Mode of Response," Journal of Abnormal and Social Psychology, XXXXIX (October, 1954), 538-42.
- _____. "Reactions to Sport and Personality," National College Physical Education Association for Men Proceedings, 1969, 76-81.
- _____. "Personality Differences Between and Within Baseball and Tennis Players," Research Quarterly, XXXX (October, 1969), 582-8.
- Singer, Robert. "Athletic Participation," Physical Educator, XXIV (December, 1967), 169-71.
- Smith, Hope. "The First Institute on Girls Sports," Journal of Health, Physical Education and Recreation, XXXV (April, 1964), 31-2.
- Spielberger, Charles, and Lou Smith. "Anxiety, Stress and Serial Position Effects in Serial-Verbal Learning," Journal of Experimental Psychology, LXXII (October, 1966), 589-95.
- Taylor, Janet. "A Personality Scale of Manifest Anxiety," Journal of Abnormal and Social Psychology, XXXXVIII (April, 1953), 285-90.
- _____. "Drive Theory and Manifest Anxiety," Psychology Bulletin, LIII, 4 (1956), 303-15.
- Trumbull, Robert. "Survey Explains Superiority of Men Over Women in Sports," The New York Times, October 6, 1964, p. 47.
- Ulrich, Celeste. "Measurement of Stress Evidenced by College Women in Situations Involving Competition," Research Quarterly, XXVIII (May, 1957), 160-72.
- Wenar, Charles. "Reaction Time as a Function of Manifest Anxiety and Intensity," Journal of Abnormal and Social Psychology, XXXXIX (July, 1954), 335-40.
- Westrope, Martha. "Relationships Among Rorschach Indices, Manifest Anxiety and Performance," Journal of Abnormal and Social Psychology, XXXXVIII (October, 1953), 515-27.

C. MICROCARDS

- Breen, James. "Anxiety Factors Related to Some Physical Fitness Variables." Microcarded Doctoral dissertation, University of Illinois, Urbana, 1959.
- Price, Helen. "Anxiety and Failure as Factors in Performance of Motor Tasks." Microcarded Master's thesis, University of Iowa, Iowa City, 1951.
- Reeves, Mary Susan. "Behavior in Groups as a Function of Irrelevant Anxiety." Microcarded Master's Thesis, Louisiana State University, Baton Rouge, 1957.

D. DISSERTATIONS

- Slevin, Robert. "The Influence of Trait and State Anxiety Upon Performance of a Novel Gross Motor Task Under Conditions of Competition and Audience." Doctoral dissertation, Louisiana State University, Baton Rouge, 1970.

E. MONOGRAPHS

- National Association for College Physical Education for College Women and National College Physical Education Association for Men. Quest, XII (January, 1970).

F. MANUAL

- Spielberger, Charles, Richard Gorsuch, and Robert Lushene. "The State-Trait Anxiety Inventory, Test Manual for Form X." Palo Alto: Consulting Psychologists Press, 1968.

G. OTHERS

- Mynatt, Constance. "Intercollegiate Sports for Women." Report delivered to Southern Association for Physical

Education of College Women, Richmond, Virginia, February, 1967. Proceedings available from Southern Association for Physical Education of College Women.

Stitt, Ann. "The Curtain Goes Up on What's New in Women's Sports." Address delivered at Southern Association for Physical Education of College Women at Memphis Tennessee, February, 1969. Proceedings available from Southern Association for Physical Education of College Women.

APPENDICES

APPENDIX A

SELF-EVALUATION QUESTIONNAIRE

STAI FORM X-1

NAME _____ DATE _____ NO. _____ SPORT _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate number to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

NOT AT ALL
SOMEWHAT
MODERATELY SO
VERY MUCH SO

- | | | | | | |
|-----|---|---|---|---|---|
| 1. | I feel calm | 1 | 2 | 3 | 4 |
| 2. | I feel secure | 1 | 2 | 3 | 4 |
| 3. | I am tense | 1 | 2 | 3 | 4 |
| 4. | I am regretful | 1 | 2 | 3 | 4 |
| 5. | I feel at ease | 1 | 2 | 3 | 4 |
| 6. | I feel upset | 1 | 2 | 3 | 4 |
| 7. | I am presently worrying over possible misfortunes | 1 | 2 | 3 | 4 |
| 8. | I feel rested | 1 | 2 | 3 | 4 |
| 9. | I feel anxious | 1 | 2 | 3 | 4 |
| 10. | I feel comfortable | 1 | 2 | 3 | 4 |
| 11. | I feel self-confident | 1 | 2 | 3 | 4 |
| 12. | I feel nervous | 1 | 2 | 3 | 4 |
| 13. | I am jittery | 1 | 2 | 3 | 4 |
| 14. | I feel "high strung" | 1 | 2 | 3 | 4 |
| 15. | I am relaxed | 1 | 2 | 3 | 4 |
| 16. | I feel content | 1 | 2 | 3 | 4 |

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
17. I am worried	1	2	3	4
18. I feel over-excited and rattled	1	2	3	4
19. I feel joyful	1	2	3	4
20. I feel pleasant	1	2	3	4

SELF-EVALUATION QUESTIONNAIRE

STAI FORM X-2

NAME _____ DATE _____ NO. _____ SPORT _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate number to the right of the statement to indicate how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

NOT AT ALL SOMEWHAT MODERATELY SO VERY MUCH SO

- 1. I feel pleasant 1 2 3 4
- 2. I tire quickly 1 2 3 4
- 3. I feel like crying 1 2 3 4
- 4. I wish I could be as happy as others seem to be 1 2 3 4
- 5. I am losing out on things because I can't make up my mind soon enough 1 2 3 4
- 6. I feel rested 1 2 3 4
- 7. I am "calm, cool, and collected" 1 2 3 4
- 8. I feel that difficulties are piling up so that I cannot overcome them 1 2 3 4
- 9. I worry too much over something that really doesn't matter 1 2 3 4
- 10. I am happy 1 2 3 4
- 11. I am inclined to take things hard 1 2 3 4
- 12. I lack self-confidence 1 2 3 4
- 13. I feel secure 1 2 3 4
- 14. I try to avoid facing a crisis or difficulty 1 2 3 4
- 15. I feel blue 1 2 3 4

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
16. I am content	1	2	3	4
17. Some unimportant thought runs through my mind and bothers me	1	2	3	4
18. I take disappointments so keenly that I can't put them out of my mind	1	2	3	4
19. I am a steady person	1	2	3	4
20. I become tense and upset when I think about my present concerns	1	2	3	4

APPENDIX B
INSTRUCTIONS AND COVER STORY FOR ADMINISTERING
STATE SCALE OF STAI

My name is Mary Roland Griffin and I am working with some other women in conducting a survey concerning girls and women in sports. We know a lot about men and boys but not too much about girls and women. You have been selected from a number of participants to represent your particular sport--name the sport being tested....

It is very important that you give your cooperation, and we think you will--that's why we selected you. You have a good record of participation and success.

We want you to fill in a questionnaire about yourself. It will take about five minutes. We want to find out about girls who are successful in this activity. It is most important that you give honest answers to the questions--they concern how you FEEL. There are no right or wrong answers, just your feelings and of course, these may be different for each one because each person is different.

This study will take about a year and next year I should be able to tell you about girls who compete in this sport, if you will get in touch with me. We appreciate your help and cooperation in helping us find out about girls in ----name the sport.

(I will then pass out the pencils, the questionnaires and read the instructions aloud to them.)

APPENDIX C

RAW SCORES OF SUBJECTS ON STAI SCALES

GYMNASTICS

Age	12 and 13		15 and 16			19 and up		
Subject Number	State	Trait	Subject Number	State	Trait	Subject Number	State	Trait
1	56	52	1	57	33	1	55	46
2	55	28	2	62	35	2	50	35
3	47	41	3	46	47	3	58	37
4	54	49	4	60	49	4	38	44
5	49	45	5	54	49	5	60	45
6	42	33	6	50	36	6	53	42
7	51	39	7	54	53	7	50	39
8	45	26	8	64	52	8	53	34
9	45	26	9	53	42	9	57	41
10	48	45	10	60	48	10	65	39
11	44	46	11	50	40	11	41	34
12	51	42	12	52	48	12	57	35
13	50	42	13	48	42	13	39	35
14	49	35	14	56	49	14	49	40
15	54	50	15	46	41	15	43	39
16	53	37	16	36	31	16	54	44
17	41	32	17	36	30	17	57	38
18	50	29	18	55	39	18	47	38
						19	51	41
						20	50	46

SWIMMING

Age	12 and 13		15 and 16			19 and up		
Subject Number	State	Trait	Subject Number	State	Trait	Subject Number	State	Trait
1	38	39	1	43	37	1	36	35
2	47	40	2	48	38	2	37	29
3	57	59	3	57	46	3	50	50
4	51	50	4	44	37	4	46	30
5	53	40	5	40	37	5	45	31
6	53	39	6	63	39	6	46	43
7	40	38	7	62	47	7	47	42
8	33	24	8	46	36	8	37	40
9	50	65	9	47	30	9	34	36
10	31	36	10	44	45	10	51	52
11	41	37	11	47	43	11	51	47
12	45	42	12	49	31	12	65	40
13	34	28	13	45	34	13	53	46
14	42	28	14	39	32	14	44	45
15	48	52	15	41	34	15	42	30
16	53	38	16	55	42	16	51	50
17	64	52	17	46	40	17	56	38
18	47	30				18	32	40
19	42	34				19	34	37
						20	56	38
						21	30	38
						22	45	26
						23	51	52
						24	57	52
						25	56	44

TENNIS

Age 12 and 13

15 and 16

19 and up

Subject
Number State Trait

Subject
Number State Trait

Subject
Number State Trait

No subjects

1	38	36
2	43	37
3	40	37
4	46	40
5	41	37
6	39	35
7	52	43
8	49	39
9	48	46
10	56	39
11	58	44
12	36	31
13	48	27
14	57	40
15	60	41

1	49	39
2	47	36
3	44	38
4	40	34
5	42	34
6	58	34
7	44	39
8	45	40
9	41	36
10	37	26
11	43	44
12	30	29
13	38	39
14	45	43
15	40	33
16	49	37
17	35	43
18	41	37
19	35	38
20	36	32
21	50	54
22	51	34
23	47	37
24	44	34
25	46	34
26	37	32

TRACK AND FIELD

Age 12 and 13

15 and 16

19 and up

Subject Number	State	Trait
1	48	43
2	54	50
3	57	32
4	49	27
5	59	30
6	45	46
7	50	48
8	53	49
9	56	44
10	48	40
11	39	42
12	47	39
13	59	41
14	57	51
15	56	48
16	53	33
17	51	32
18	49	36
19	47	35
20	56	40

Subject Number	State	Trait
1	53	31
2	45	34
3	42	39
4	33	38
5	40	48
6	49	34
7	54	39
8	62	49
9	42	33
10	47	45
11	59	53
12	48	44
13	46	37
14	50	38
15	48	40
16	51	39
17	32	40
18	65	51
19	49	35

Subject Number	State	Trait
1	40	36
2	39	36
3	48	31
4	45	44
5	36	41
6	38	37
7	39	30
8	48	32
9	32	33
10	50	42
11	40	41
12	43	33
13	53	28
14	49	36
15	50	38
16	49	32
17	39	31
18	47	30

BASKETBALL

Age 12 and 13

15 and 16

19 and up

Subject
Number State Trait

Subject
Number State Trait

Subject
Number State Trait

1	42	33
2	33	35
3	42	37
4	43	44
5	44	35
6	53	42
7	34	32
8	38	26
9	46	36
10	40	39
11	34	31
12	51	30
13	49	51
14	42	30
15	34	38
16	52	42
17	33	28
18	39	32
19	44	43
20	59	44
21	41	38
22	49	41
23	52	33

1	42	39
2	53	34
3	34	41
4	38	34
5	38	36
6	45	36
7	39	34
8	46	48
9	63	47
10	51	38
11	44	32
12	34	41
13	48	40
14	46	42
15	57	36
16	47	42
17	47	42
18	45	41
19	33	41
20	41	42
21	42	38
22	34	36
23	38	34
24	39	37
25	46	36
26	45	41
27	41	32

1	35	29
2	36	35
3	37	35
4	39	30
5	42	37
6	46	46
7	32	28
8	36	35
9	34	43
10	57	46
11	48	31
12	43	33
13	40	34
14	62	34
15	53	33
16	46	37
17	39	34
18	37	42
19	47	34
20	42	40
21	37	37
22	36	27
23	42	41
24	39	32
25	44	43
26	51	29
27	57	35

BASKETBALL (continued)

Age 12 and 13

15 and 16

19 and up

Subject
Number State Trait

Subject
Number State Trait

Subject
Number State Trait

28	46	31
29	42	31
30	45	35
31	49	43
32	40	31
33	35	32
34	44	36
35	37	36
36	44	29
37	40	33
38	46	48
39	53	35
40	49	37
41	39	38
42	43	29
43	38	31
44	50	37
45	43	35
46	43	40
47	47	29
48	42	31
49	37	36
50	39	30
51	36	24
52	39	35

FIELD HOCKEY

Age 12 and 13

15 and 16

19 and up

Subject
Number State Trait

Subject
Number State Trait

Subject
Number State Trait

1	39	34
2	28	31
3	32	29
4	40	35
5	46	46
6	36	37
7	48	46
8	36	40
9	40	40
10	30	32
11	36	35
12	48	46
13	34	31
14	43	38
15	42	31

1	43	31
2	35	29
3	41	39
4	41	42
5	43	39
6	42	42
7	42	35
8	51	35
9	34	43
10	38	38
11	37	27
12	36	31
13	43	28
14	42	36
15	43	37
16	46	40
17	27	27
18	40	38
19	37	34
20	35	40
21	36	30
22	49	45
23	56	47
24	48	48
25	34	24
26	55	52
27	37	34

1	40	39
2	53	45
3	49	42
4	48	37
5	49	38
6	42	41
7	54	43
8	50	48
9	38	47
10	50	52
11	42	38
12	50	42
13	54	51
14	38	30
15	34	30
16	61	37
17	44	31
18	42	42
19	37	32
20	42	34
21	61	43
22	36	34
23	51	50
24	38	38
25	43	48
26	40	40
27	64	50

FIELD HOCKEY (continued)

Age	12 and 13		15 and 16			19 and up		
Subject Number	State	Trait	Subject Number	State	Trait	Subject Number	State	Trait
			28	46	44	28	44	42
			29	40	29	29	37	32
			30	43	49	30	41	32
			31	46	43	31	40	37
			32	46	30	32	39	37
			33	43	41	33	35	37
			34	47	45	34	45	33
			35	47	47	35	47	50
			36	52	33	36	37	31
			37	47	33	37	59	38
			38	48	40	38	34	33
			39	45	29	39	39	31
			40	47	38	40	33	37
			41	46	42	41	40	36
			42	53	38	42	39	30
			43	31	29	43	41	55
			44	44	39	44	51	30
			45	37	37			
			46	41	30			
			47	36	40			
			48	35	42			
			49	33	28			
			50	39	43			
			51	41	39			
			52	35	37			
			53	38	44			
			54	42	44			
			55	45	28			

FIELD HOCKEY (continued)

Age	12 and 13		15 and 16			19 and up		
Subject Number	State	Trait	Subject Number	State	Trait	Subject Number	State	Trait
			56	61	43			
			57	35	35			
			58	48	39			
			59	36	36			
			60	41	40			
			61	40	37			
			62	39	35			
			63	49	46			
			64	43	38			
			65	52	52			
			66	40	35			

SOFTBALL

Age	12 and 13		15 and 16			19 and up		
Subject Number	State	Trait	Subject Number	State	Trait	Subject Number	State	Trait
1	50	43	1	34	31	1	37	32
2	57	44	2	39	33	2	33	30
3	59	36	3	44	36	3	40	33
4	43	42	4	41	37	4	41	33
5	58	37	5	43	40	5	39	32
6	44	50	6	36	33	6	49	34
7	49	44	7	39	36	7	52	34
8	52	50	8	37	41	8	46	31
9	55	46	9	43	38	9	29	28

SOFTBALL (continued)

Age	12 and 13		15 and 16			19 and up		
Subject Number	State	Trait	Subject Number	State	Trait	Subject Number	State	Trait
10	43	30	10	39	43	10	41	38
11	47	44	11	40	39	11	39	34
12	37	32	12	46	36	12	43	35
13	39	33	13	50	44	13	45	40
14	58	40	14	56	42	14	38	35
15	57	39	15	44	38	15	31	41
16	36	36	16	37	40	16	32	30
17	59	46	17	38	39	17	43	29
18	42	32	18	43	40	18	45	38
19	56	32	19	40	33	19	41	39
20	59	48	20	39	44	20	54	30
21	50	32	21	42	32	21	44	36
22	56	53	22	40	46	22	32	28
23	59	50	23	47	50	23	32	35
24	52	33	24	39	37	24	51	44
25	58	51	25	56	50	25	40	52
26	48	38	26	53	40	26	29	34
27	40	33	27	40	35			
28	57	38	28	47	41			
			29	38	29			
			30	43	37			
			31	52	30			
			32	46	51			

VOLLEYBALL

Age 12 and 13

15 and 16

19 and up

Subject
Number State Trait

Subject
Number State Trait

Subject
Number State Trait

1	35	36
2	51	43
3	36	41
4	54	32
5	52	44
6	47	36
7	59	39
8	44	41
9	39	33
10	48	39
11	53	50
12	59	52
13	54	32
14	46	31
15	60	49
16	34	26
17	55	44
18	57	44
19	44	34
20	44	41
21	49	53
22	43	31
23	59	48

1	37	36
2	35	33
3	48	47
4	42	31
5	37	30
6	44	33
7	40	47
8	49	47
9	71	38
10	45	42
11	39	45
12	56	45
13	53	56
14	50	37
15	42	54
16	41	37
17	44	32
18	44	32
19	40	37
20	41	39
21	37	36
22	47	47
23	58	58
24	45	33
25	58	46
26	40	30
27	62	38
28	40	35
29	57	35

1	34	41
2	48	38
3	41	32
4	42	43
5	26	34
6	44	41
7	35	35
8	33	24
9	38	37
10	43	34
11	36	26
12	47	34
13	36	31
14	44	36
15	34	30
16	55	38
17	49	43
18	44	30
19	46	37
20	49	47
21	40	30
22	36	30
23	34	26
24	39	32
25	31	28
26	33	33
27	42	30
28	38	42
29	36	43

VOLLEYBALL (continued)

Age	12 and 13		15 and 16			19 and up		
Subject Number	State	Trait	Subject Number	State	Trait	Subject Number	State	Trait
			30	40	37	30	47	43
			31	61	48	31	42	30
			32	40	34	32	37	40
			33	55	44	33	38	30
			34	41	37	34	32	45
			35	42	60	35	50	45
			36	39	51	36	44	42
			37	44	45	37	46	39
			38	42	32	38	55	45
			39	39	50	39	49	49
			40	38	48	40	42	49
			41	35	44	41	37	37
			42	39	34	42	34	38
			43	43	34	43	40	44
			44	52	44	44	36	29
			45	36	41	45	37	38
			46	40	32	46	44	40
			47	45	42	47	39	43
			48	37	38	48	30	30
			49	35	47	49	41	35
			50	43	42	50	39	35
			51	36	31	51	36	36
			52	40	44	52	36	30
			53	39	35	53	50	40
			54	39	30	54	44	38
			55	39	32	55	44	48

VOLLEYBALL (continued)

Age	12 and 13		15 and 16			19 and up		
Subject Number	State	Trait	Subject Number	State	Trait	Subject Number	State	Trait
			56	47	58	56	46	43
			57	40	30	57	41	54
			58	37	44	58	41	38
			59	56	31	59	37	39
			60	39	39	60	37	50
			61	40	43	61	33	33
			62	35	35			
			63	39	37			
			64	42	35			
			65	34	42			
			66	42	30			
			67	45	39			
			68	51	43			
			69	35	36			
			70	36	41			

VITA

The author, daughter of Mr. and Mrs. R. C. Griffin, is a native of Florence, South Carolina. She graduated from McClenaghan High School in Florence and attended Winthrop College, Rock Hill, South Carolina, obtaining a B.S. degree in physical education in 1950.

She then taught physical education in the public schools in Columbia, South Carolina, and Richmond, Virginia. In 1959 she entered Louisiana State University at Baton Rouge, Louisiana, and while doing graduate work at Louisiana State University she served as a Graduate Teaching Assistant. She was awarded an M.S. degree in 1961 with a major in the Department of Health, Physical and Recreation Education.

The author was assistant professor of physical education at Mary Washington College, Fredericksburg, Virginia, until 1966. She then accepted a position in the Physical Education Department at Winthrop College, Rock Hill, South Carolina. In 1969, taking a temporary leave from Winthrop College, she entered Louisiana State University at Baton Rouge, Louisiana, to begin work toward a Doctor of Education degree with a major in physical education and a minor in psychology.

EXAMINATION AND THESIS REPORT

Candidate: Mary Roland Griffin

Major Field: Physical Education

Title of Thesis: An Analysis of State and Trait Anxiety Experienced in Sports Competition by Women at Different Age Levels

Approved:

Helen E. Fant

Major Professor and Chairman

Max Goodrich

Dean of the Graduate School

EXAMINING COMMITTEE:

Mary Lewis Lyle

Ralph E. Steben

Malcolm L. Patterson

Quinn E. Young

Date of Examination:

July 7, 1971