KAATZ, DORIS MARIE. Psychological Anxiety of Members of Selected Intercollegiate Athletic Teams. (1973) Directed by Dr. Pearl Berlin. Pp. 211.

The purpose of this study was to assess the psychological anxiety levels of college students who participated in intercollegiate athletics in the spring of 1972. The problem was concerned with anxiousness as measured by the State Trait Anxiety Inventory (STAI). Variables considered were sex, age, geographic location of the athlete's homes, family size, sibling order, major field of study, academic class, grade point average, geographic location of school, sport, athletes compared to non-athletes, sport experience, school size, and team's record. The survey also determined reasons for participating and sport preference. One hundred and seventy women tennis players from eighteen squads, 258 women lacrosse players from twelve squads, 23 men tennis players from four squads, and 48 men lacrosse players from two squads participated in the study. The coaches of these squads administered the inventory and questionnaire to the players during the week of the last game of their respective seasons. A combination of one way analyses of variance, t-tests, and Newman-Keuls tests were used. The following results were revealed: (1) Trait anxiety scores of men lacrosse players and combined scores of men lacrosse players and men tennis players were significantly higher than women lacrosse players or a combination of women lacrosse and tennis players. (2) Trait anxiety scores of women athletes who were first or second born were significantly higher than women athletes who were born fourth or later. (3) Significant differences were also found in the trait anxiety scores of men with different academic majors. Men who were studying physical or natural science showed higher anxiety levels than

men studying for a professional occupation, or physical education. (4) In a comparison between athletes and non-athletes, men lacrosse players and all men athletes showed trait anxiety scores significantly higher than male undergraduate college norms. (5) Women athletes showed significantly higher state anxiety scores than female undergraduate college norms. (6) Significant differences in trait anxiety were also found between women tennis players who participated on a losing team and women tennis players who were affiliated with a team with an even season. The latter group demonstrated higher levels of trait anxiety. However, neither group of athletes was different than players on teams with winning seasons. In lacrosse, on the other hand, winning team lacrosse players had significantly lower state anxiety scores than players affiliated with a losing team.

PSYCHOLOGICAL ANXIETY OF MEMBERS OF SELECTED INTERCOLLEGIATE ATHLETIC TEAMS

by

Doris M. Kaatz

A Thesis Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Master of Science
in Physical Education

Greensboro
1973

Approved by

Pearl Berlin

Thesis Adviser

APPROVAL PAGE

This thesis has been approved by the following committee of the Faculty of the Graduate School at the University of North Carolina at Greensboro.

Thesis Adviser Pearl Berlin

Oral Examination Committee Members E. Davis McKinney

Roxanna McGee

Frank Blanchard

9 February 1973
Date of Examination

ACKNOWLEDGMENTS

The writer wishes to extend her sincere appreciation to Dr. Pearl Berlin. Her untiring assistance, patience and energy, invaluable professional knowledge, keen interest and enthusiasm, and continuous encouragement during the preparation, planning and completion of this thesis could not be equalled.

The writer is deeply indebted to Katie B. Humphries and Gladys F. Smith without whose cooperation and valuable assistance this thesis could not have been completed.

Acknowledgment is also extended to the many coaches and players whose cooperation was essential to the completion of this study.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF TABLES (Continued)

LIST OF TABLES (Continued)

LIST OF TABLES (Continued)

LIST OF TABLES (Continued)

LIST OF TABLES (Continued)

LIST OF TABLES (Continued)

CHAPTER I

INTRODUCTION

> Any of us who have ever watched the trembling knees of a girl who is about to try her first dive, or held the hand of a child who walks across a high balance beam or who has felt the intensity of a little boy clutching his neck as he moves into deep water, knows that fear affects human performance. . . . But just as all of us know the agony of the frightened, we also empathize with the exhilaration of those who overcome fear--and that is what makes all the research and all the work worthwhile. (111:60, 66)

The anxiety phenomenon is a pervasive force in modern life (62) and threatens to become a dominant cliche. Anxiety has been of increased concern within our society. Literature in the arts, science, and religion, as well as many other facets of our culture has reflected this concern. We cannot escape its prevalence. It is with us in almost any everyday act; be it shopping, playing tennis, or even watching television with our families. (13)

This age of anxiety has been reflected not only in the life styles of laymen but in the concerns of behavioral scientists as well. The earliest research was done by Freud, who felt that anxiety was the central problem of neurosis. Since that time there has been a vast amount of study about anxiety. (31) It is not surprising that a substantial portion of this research has dealt with motor behavior. (62) Unfortunately, still very little is known about the general phenomenon of anxiety, and even less is known about anxiety in relation to motor behavior and sport. Cattell and Scheier sum up the situation by saying, "If

anything has increased in proportion to research effort, it is the number of competing tests, concepts, and theories of anxiety." (31:351)

In what other human endeavors does anxiety have more pronounced effects than in sport? Why are some tennis players, for example, unbeatable in practice, but unable to win in a tournament? Why do certain people excel in team sports and show no ability in individual sports? Does sport excellence relate, at all, to the phenomenon of anxiousness?

The writer is interested in the psychological levels of athletes, particularly men and women tennis and lacrosse players. Are there differences in anxiety levels among these individuals, and if so, why? Do differences in anxiety levels that may be associated with sex or scholastic achievement affect sport performance? These are among the many questions that this study of psychological anxiety may answer. It seems appropriate for physical education research to be addressed to such questions.

STATEMENT OF THE PROBLEM

The purpose of this study to assess the psychological anxiety levels of college students who participate in intercollegiate athletics. The problem is concerned with anxiousness as measured by the State Trait Anxiety Inventory (STAI). More specifically, it seeks to answer the following questions.

1. Are there differences among the psychological anxiety levels of athletes that may be associated with personal factors?
    a. Are there differences between the psychological anxiety levels of athletes that may be associated with their sex?

b. Are there differences among the psychological anxiety levels of athletes that may be associated with their age?

2. Are there differences among the psychological anxiety levels of athletes that may be associated with family and home related factors?
   a. Are there differences among the psychological anxiety levels of athletes that may be associated with the geographic location of their homes?
   b. Are there differences among the psychological anxiety levels of athletes that may be associated with the size of their families?
   c. Are there differences among the psychological anxiety levels of athletes that may be associated with their sibling order?
3. Are there differences among the psychological anxiety levels of athletes that may be associated with educational related factors?
   a. Are there differences among the psychological anxiety levels of athletes that may be associated with their major field of study?
   b. Are there differences among the psychological anxiety levels of athletes that may be associated with their class?
   c. Are there differences among the psychological anxiety levels of athletes that may be associated with their grade point average (GPA)?
   d. Are there differences among the psychological anxiety levels of athletes that may be associated with the geographic location of the school they attend?

4. Are there differences among the psychological anxiety of athletes that may be associated with experiences pertaining to sport?
   a. Are there differences between the psychological anxiety levels of athletes and undergraduate norms?
   b. Are there differences between the psychological anxiety levels of tennis and lacrosse players?
   c. Are there differences among the psychological anxiety levels of athletes that may be associated with their previous experience in interscholastic sports?
   d. Are there differences among the psychological anxiety levels of athletes that may be associated with their previous experience in intercollegiate sports?
   e. Are there differences among the psychological anxiety levels of athletes that may be associated with their previous experience in their concerned sport?
   f. Are there differences among the psychological anxiety levels of women athletes that may be associated with the size of the school which they attend?
   g. Are there differences among the psychological anxiety levels of women athletes that may be associated with their team's record for the season?
   h. Are there differences among the psychological anxiety levels of women athletes that may be associated with their team's record

this year compared to their team's record of the previous year?

The secondary purpose of this study is to answer the additional questions:

1. Why do men and women tennis and lacrosse players participate on their respective intercollegiate teams?
2. What are the leisure time sport preferences of these players?

SIGNIFICANCE OF THE STUDY

This research is felt by the writer to be significant for several reasons. Anxiety has been shown to influence performance in many laboratory situations and may have direct implications for the competitive sport performance. There is continuing interest in and desire to be able to predict future sport performance. Understanding of anxiety and its related phenomenon may contribute to such a goal. Little is known about the precise effects of anxiety in skill performance. This study seeks to add to the existing knowledge.

DEFINITIONS

For the purpose of interpretation in this study the following meanings are ascribed:

1. Anxiety--"Apprehension, tension or uneasiness which stems from the anticipation of danger, the source of which is largely unknown or unrecognized. Primarily of intrapsychic origin, in distinction to fear, which is the emotional response to a consciously recognized and usually external threat or danger. Anxiety and fear are accompanied

by similar physiologic changes. May be regarded as pathologic when present to such an extent as to interfere with effectiveness in living, achievement of desired goals or satisfactions, or reasonable emotional comfort." (7:13)

2. State Anxiety--"A-State is conceptualized as 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. A-States may vary in intensity and fluctuate over time." (14:3)
3. Trait Anxiety--"A-Trait 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 A-State intensity." (14:3)
4. STAI--A forty item paper and pencil test developed by Spielberger, Gorsuch and Lushene to measure state and trait anxiety levels.
5. Previous Experience in Interscholastic Competition--The total number of seasons the subject has been a member of an interscholastic team in any sport.
6. Previous Experience in Intercollegiate Competition--The total number of seasons the subject has been a member of an intercollegiate team in any sport.
7. Previous Experience in the Concerned Sport--The total number of seasons the tennis players have played interscholastic and

intercollegiate tennis, or the total number of seasons the lacrosse players have played interscholastic and intercollegiate lacrosse.

8. Athletes--Men and women collegiate tennis and lacrosse players who were squad members during the spring of 1972. As used in this report, the term is intended to mean a combination of both.

BASIC ASSUMPTIONS OF THE STUDY

Two assumptions underlie this research. Obviously the investigation is based on the premise that anxiousness is a factor that is measurable by the STAI. Secondly, it is assumed that the STAI is valid when administered by any adult leader though he/she is not necessarily trained in psychometrics. The nature of the test conditions, that is when or where administered, does not affect the STAI's ability to yield valid responses.

DELIMINATIONS OF THE STUDY

The scope of this research is delimited by the exact data sources, namely, responses to the STAI by men and women from selected tennis and lacrosse teams. Also, the fact that subjects comprising the sample are drawn from selected colleges and universities on the east coast is another limiting factor of this research.

CHAPTER II

REVIEW OF RELATED LITERATURE

There has been an extensive amount of research conducted on the phenomenon of anxiety; however this research has not been conclusive. In an attempt to examine anxiety thoroughly this review has been organized into three major categories: (1) the nature of psychological anxiety, (2) the measurement of psychological anxiety, and (3) studies of physiological anxiety and its correlates.

THE NATURE OF PSYCHOLOGICAL ANXIETY

Despite the fact that anxiety has been the subject of considerable study, it remains one of the least understood psychological characteristics. In any attempt to describe, analyze, or measure anxiety, it is necessary to first develop a working definition of the phenomenon and an understanding of selected theories.

The Definition of Anxiety

Anxiety, like other words used to describe human personality, is usually referred to as a construct. According to Levitt, "A construct is a broad abstraction, a hypothetical entity which has no actual physical existence, but which has proven useful in explaining observable phenomena." (10:5) It does not describe things which have definite physical properties like a hat or a building. Neither does it describe an observable act such as "She talked with her neighbor."

The property called anxiety cannot be identified. (10) Because anxiety is so abstract it has been defined somewhat differently by nearly every researcher who has studied it.

Spielberger, citing Freud, wrote, "Freud viewed anxiety as '. . . an affective state . . . of most obviously unpleasurable character' and '. . . as a signal indicating the presence of a danger-situation.'" (13:362)

Sarason and Mandler (90) refer to anxiety as a learned drive with the characteristics of a strong stimulus. They feel that it is a learned response which varies with different situations. When people are in an anxious state they either have self-centered feelings of inadequacy or they have task-relevant responses which lead to the completion of the task and thus reduce the anxiety.

Mowrer's definition is similar to that of Sarason and Mandler:

> . . . Anxiety is a learned response, occurring to "signals" (conditioned stimuli) that are premonitory of (i.e., have in the past been followed by) situations of injury or pain (unconditioned stimuli). Anxiety is thus basically anticipatory in nature and has great biological utility in that it adaptively motivates living organisms to deal with (prepare for or flee from) traumatic events in advance of their actual occurrence, thereby diminishing their harmful effects. (70:563)

Levitt cites a more concise definition which was adopted by the American Psychiatric Association. Anxiety is "a danger signal felt and perceived by the conscious portion of the personality. It is produced by a threat from within the personality . . . with or without stimulation from . . . external situations . . . ." (10:5) This, like all the others, is not the ultimate definition.

Classifications of Anxiety

Suinn states, "Within recent years, anxiety has been re-examined, with the conclusion that there are several types of anxiety." (102:317) Anxiety can be classified into two categories: objective and neurotic. Objective anxiety is equated with fear. That is, there is an external danger which causes an internal reaction. Thus:

external danger —— * perception of danger —— objective anxiety. (13:10)

In the case of neurotic anxiety the perceived danger is internal.

internal impulses —— external danger (punishment) —— objective anxiety —— repression —— partial breakdown of repression derivatives of internal impulses —— neurotic anxiety. (13:10)

Anxiety can also be categorized according to the motivation to avoid failure and the motivation to achieve success. Atkinson (1) refers to the former as debilitating anxiety, and to the latter as facilitating anxiety. His research showed only a .09 correlation between the two kinds of anxiety.

One of the newest classifications of types of anxiety has been developed by Spielberger.

> State anxiety (A-State) is conceptualized as 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. A-States may vary in intensity and fluctuate over time. (14:3)

A-State is the subject's response to events in his external or internal

---

*—— = leads to

environment. Research indicates that individuals will respond differently to identical stimuli. One person will appear to be very anxious due to a particular stimulus, and another will not be affected at all. (28)

On the other hand, according to Spielberger:

> Trait anxiety (A-Trait) 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 A-State intensity. (14:3)

Trait anxiety is a more permanent quality. (28) It reflects how a person generally feels without regard to a particular stimulus. Research indicates that people who are high in A-Trait generally exhibit A-State elevations more often than low A-Trait people. (14)

The anxiety classification of Gordon and Sarason (42) is similar to that of Spielberger. They label two classifications of anxiety: test anxiety and general anxiety. Test anxiety and state anxiety have similar properties, as do general anxiety and trait anxiety. They also found that there was a relationship between the two types of anxiety. Suinn determined the relationship between general and test anxiety and the results "confirmed the prediction that high scores on one type of anxiety scale are related to high scores on other types of scales." (102:319)

A great deal of confusion exists in the literature about anxiety due to the careless misuse of the terms stress, tension, phobia, and fear. Although all of these concepts are closely related to anxiety it must be noted that none of them is synonymous with anxiety. Levitt cites Lazaraus as saying:

> It seems wise to use "stress" as a generic term for the whole area of problems that includes the stimuli producing stress reactions, the reactions themselves and the various intervening processes. . . . Stress is . . . a collective term for an area of study. . . . As used here, it will be nothing more than a general label like motivation or cognition. It defines a large, complex, amorphous interdisciplinary area of interest and study. (10:12)

Tension, on the other hand, is a state of the organism which is caused by stress. It is also occasionally referred to as a muscular condition which is present in an individual who is in an anxious state. Here again, it must be pointed out that tension merely accompanies anxiety. (10)

Fear is differentiated from anxiety in that it comes from a source about which the individual is aware. In most cases, anxiety comes from a source which is unknown to the individual. A phobia is simply an exaggerated fear. It is usually related to an event or object which the individual feels will harm him. (10)

Theories of Anxiety

Just as there is little agreement among researchers as to the definition of anxiety, there is little agreement about the relationship existing between elements comprising anxiety and the theoretical structure of anxiety. Enough research has not been completed relative to any of the theories to warrant the selection of one as the absolute truth. The most common hypothetical explanations, offered as theories, are described briefly in order to provide a basis for further discussion.

The Orthodox Freudian Approach. Freud presents at least six different,

but interrelated points of view, which served as a basis for his approach: economic, dynamic, structural, genetic, phylogenetic, and adaptive. He conceives man as a total being and an object of nature which is no different than other animals. Man could be studied scientifically, just as other objects had been studied, since his totality was governed by laws. (8)

Freud's initial interest in the analysis of anxiety stemmed from his concern in treating patients who were suffereing from symptoms of neurosis. Freud described anxiety as realistic and non-realistic. Realistic anxiety was that of every-day life, and could be considered to be synonymous with fear. For Freud, non-realistic anxiety was a consequence of the inhibition of natural instincts; it was felt and was generally unpleasurable. The cause of anxiety according to Freud's intention was unknown to the individual; however physiological factors, especially related to the heart and respiratory organs, clearly play a part in the phenomenon of anxiety. (8)

Freud also classifies anxiety as primary and subsequent. Primary anxiety, the model for all subsequent anxiety, is caused by internal and external stimuli experienced as a feeling of pain, and endured. (9)

> . . . The ego is "the actual seat of anxiety" and because it is the function of this system to maintain accurate relations with the organization of world meanings . . . , anxiety, a breakdown in ego functioning, would always mean a disruption in the individual's realistic relations with the world. (8 17)

Neo-Freudian Approaches. As a result of travel by researchers and easier communication among people of different countries, a concept of the relation between man and society slowly emerged. Freud had based his theories on

one society and these were inapplicable to other cultures. The task of the neo-Freudian theorists was to alter the conceptions which were developed by Freud. Sullivan is one of the neo-Freudian theorists. Sullivan's whole theory is basically a theory of anxiety: people are made vulnerable to anxiety by simply living together. Unlike Freud, Sullivan feels that sublimation is no longer a process which leads to anxiety. The individual is unconsciously aware of settling for partial satisfaction. The ability to selectively attend enabled him to avoid anxiety-provoking situations. Sullivan called this whole process substitution. (8) Fischer summarizes: "Anxiety is the intermittent, occasionally chronic sense of being a failure as a human being." (7:34)

The Ego-Psychological Approach. Jacobson is one of the forerunners of the ego-Psychological approach. She sees anxiety as a signal and as an adaptive phenomenon through which the id seeks equilibrium. (8) Describing her approach Fischer states:

> It can function as a signal in that the ego uses it to mobilize defenses against instinctual promptings for which it is unprepared. It can function as an adaptive, equilibrium-seeking phenomenon in that its ocourrence facilitates the development of new discharge pathways and new means of ego control. (8:43)

Anxiety tells the ego that danger exists. The three basic types of dangers occur when the ego is saturated with quantities of excitation that it cannot discharge; the ego lacks excitation and therefore losing contact with reality, and the ego does not discharge tension naturally. Jacobson, therefore explains anxiety as being a continually developing adaptive phenomenon which provides an opportunity for new behaviors to be developed. (8)

The Physiological Approach. The fact that anxiety is accompanied by many physiological correlates is common knowledge. Researchers who ascribe to this theory assume a division between the mind and the body. The mind is thought to be a container of ideas and the body is conceptualized as a group of mechanisms. Another assumption is that different emotional experiences can be equated with particular bodily changes. Specific systems of the brain are responsible for anxiety. The limbic system and the reticular activating system seem to be the two most important. (8)

> In this regard, it has been found that anxiety, reports of anxiety, or anxious behaviors involve the activity of particular areas of the central nervous system, the secretion of hormonal substance and the arousal of probably the entire organism (conceived as a mechanistic thing). (8:57)

The Learning Theory Approach. The learning theory approach to anxiety is based primarily on stimulus-response learning postulates developed by Hull. Several of Hull's students, Miller, Spence, Dollard, and Mowrer, have refined the learning theory and from it developed theories of anxiety. Dollard and Miller, for example, base their theory on the idea that, "All behaviors (responses) are understood as being drive-impelled and that all learning (habit acquisition) is held to be a function of reinforcement." (8:65) The combination of drive and reinforcement results in stimulus generalization. Individuals are not aware of the process of generalization but once the responses due to this generalization are learned, maladaptive behavior can be motivated. Anxiety can, therefore, be considered the prime cause of neurosis. Anxiety is thought to be

fear that cannot be explained. (8)

The Existential Approach. The existentialist sees man as different than animals in two basic ways. That is, man is "caught between freedom and the necessity to make of his life what he will, while on the other hand he is potentially capable of being self-consciously aware of his possibilities for freedom." (8:85) There is a gap between comprehending the possibility and the choice itself, and it is here that anxiety is found. The whole idea of anxiety is based on the dreading of choice. (8)

THE MEASUREMENT OF PSYCHOLOGICAL ANXIETY

The evaluation of psychological anxiety is important both in describing behavior and in understanding the psychodynamics involved in behavior. Despite the fact that anxiety is one of the central constructs in modern psychology it has been an extremely difficult phenomenon to interpret and understand. (106) This difficulty stems from the near impossibility of validly quantifying it, and from ambiguity with regard to its conceptual status as a scientific construct. (99)

There are numerous heterogeneous tests and procedures available for measuring anxiety but most of them are still in the experimental stage of development and refinement. (11) Wyrick states that:

> Attempts at measurement have included physiological assessment of autonomic parameters, behavioral signs, effects on task performance, and the use of assessment scales developed specifically to test anxiety state or trait. (111:62)

Since 1950 over two thousand studies concerning anxiety have been

reported in psychological literature. (62) In medical and psychological psychiatric journals an equal or larger number of studies on this topic have been published. (99) It is noteworthy that a substantial portion of the literature has dealt with motor behavior. Existing scales must be modified or a competition anxiety scale must be developed in order for an in-depth study of anxiety in the competitive situation and its influence on motor behavior to be initiated. (62)

The majority of the measurement of anxiety has been done through psychological techniques. Most of these techniques have been developed within the last twenty years and they all can be classified into one of the following techniques; projective, self-report, verbal analysis, or observer rating.

Projective Techniques

These techniques are among the most important instruments used by psychologists in clinical evaluation. They present unstructured or partly unstructured stimuli to the subject. Aspects of his personality are then revealed as he responds by adding structure to the stimuli. One strength of this kind of test is that the subject has no idea how his responses will be interpreted. It is also impossible for the subject to deny or otherwise conceal his anxiety. (10)

The difficulties with this type of test are serious. A qualified clinical psychologist or a specially trained examiner are required to administer and interpret a projective test. Responses to projective stimuli are generally idiosyncratic and therefore, their meaning can be revealed only in the context of

a detailed study of the subject's background. The results of this type of test are difficult to quantify therefore making it difficult to use it in a research project which has a large number of subjects. For the results to have any degree of diagnostic value it is necessary for the test to be administered individually. Because of these considerations, projective tests make poor instruments for experimental measuring. (10)

The Rorschach Ink-blot test is the most widely used projective test for the assessment of anxiety. When using this test as a measure of anxiety the responses take two forms. In the first form shading responses and other postulated Rorschach "signs" of anxiety are assessed. The second assessment is in terms of a systematic scale of anxiety which is based on Rorschach content. (11) This test is not often used when the only concern is anxiety but rather when the investigator is making a global interpretation of personality structure. (41)

The Rorschach Content Test (RCT) is the primary Rorschach anxiety scale. This test was developed in 1949 by Elizur. Responses such as, "A frightened animal" or "A man hiding in fear" permit the examiner to infer anxiety. Correlations between this test and other measures of anxiety have been relatively low. (11)

Holtzman used the basic idea of the RCT and developed the Holtzman Ink-blot Test (HIT). There is, however, no significant relationship between HIT anxiety scores and other measures of anxiety. (11)

Figure-drawing tests have also been frequently used in the assessment

of anxiety. The two most common tests of this kind are the Draw-a-Person (DAP) and the House-Tree-Person (HTP) tests. Anxiety is measured through these tests by the use of specific signs or impressionistic cues. To date, however, the relationship between these tests and other measures of anxiety, although positive, has not been high. (11)

It has been suggested that signs of anxiety could be detected by using the Thematic Apperception Test (TAT), but research has shown that the TAT scores fail to correlate highly with other indices of anxiety. A projective anxiety test for children has also been developed. This test requires the child to put a happy or a sad face on pictures of children which are doing various things. Like the other projective techniques, its status as a measure of anxiety is in doubt. (11)

Self-Report Techniques

Clinicians have often felt that one of the best ways to find out how anxious a person feels is to ask him. Because of this belief the self-report approach has been widely used. The two basic types of self-report techniques are inventories and check lists.

Since 1950 few areas of study in psychology have matched the output of research on anxiety inventories. (86) The inventory is by far the most popular device for the measurement of anxiety. Sometimes referred to as a "scale" or "questionnaire," the inventory consists of a series of descriptive statements or words. These statements usually deal with the way the subject feels about himself or his environment. The subject responds to each item by either agreeing or

disagreeing, or by assigning a degree of truth or falseness. All items are tallied and the result is one total score which is considered to be a direct, quantitative account of the individual's anxiety level. (10)

The inventory is widely used in larger research projects for several reasons. It is easy to score and can be administered to large groups at one time. It has been shown to be more reliable than other measures of anxiety. Additionally, the scores, in most cases, are less likely to be affected by the experimental situation and other extraneous factors. (10)

The inventory is not without its problems. One problem with true-false inventories is that people have a tendency to only choose one response category. By inverting some of the statements this problem can usually be avoided. Subjects also have a tendency to answer in a socially desirable manner. This, as well as the response set problem can be eliminated by the use of forced-choice items. In this approach two statements, one a measure of anxiety, and the other not, are paired. The subject must choose which one of the two statements best describes him. (10)

The literature reveals that the development of anxiety inventories has caused a sharp increase in the number of studies being done concerning this construct. The Test Anxiety Questionnaire (TAQ), developed by Sarason and Gordon, was the first formal measure of overall anxiety which used the problem-oriented approach. The scale is a measure of how anxious a person feels in a testing situation. (17) (65) (103) This twenty-nine item test has also been described as the General Anxiety Questionnaire. (11) In 1952 the college form

of the TAQ was devised by Mandler and Sarason. (60) This form contains thirty-nine items, and the high school form which was later developed by Cowen contains fifty-two items. The purpose of these questionnaires is to obtain self-ratings on items that were descriptive of anxiety reactions in test situations. (59) Scoring norms for the TAQ are provided in a later study by Sarason and Gordon. (89)

Sarason devised the Lack of Protection Scale. It consists of forty-two items and is based on anxiety as a situation of helplessness which is the Freudian interpretation. Interestingly, it is one of the few tests that is derived from a major theory of anxiety. (11)

Several attempts have been made to derive an objective anxiety score from the Minnesota Multiphasic Personality Inventory (MMPI). Modlin combined the Hs, D, and Hy scores and called it an anxiety score (A score). (106) (109) He justified this by suggesting that the central factor in most cases of maladjustment and neurosis, which are measured by the Hs, D, and Hy scores, is anxiety. (109) This scale has not been shown to correlate significantly with psychiatric criteria of anxiety. (54)

Taylor developed an anxiety scale which was originally constructed to use in a study of eyelid conditioning. The scale originally consisted of two hundred items but after several modifications it now consists of only fifty items. All of the items were originally taken from the MMPI. (47) (68) (103) Taylor states that the use of the scale is based on two assumptions: first, the variation in drive level is related to the level of internal anxiety or emotionality, and

second, the intensity of this anxiety can be determined by a test which consists of items describing manifest or overt symptoms of this state. (44) (51) (103) The literature reveals that the scale is most widely used in studies which deal with learning phenomena. (50)

Research has shown that the Taylor scale demonstrates adequate reliability. The scale was not originally validated against any criterion of manifest anxiety external to itself. (50) An investigation by Kendall, however, indicated that the scale is only valid as an extremely coarse measure of manifest anxiety. (38) The Taylor scale was also validated against the Manifest Anxiety Rating Scale (MARS). The absence of significant correlations challenge the validity of the scale. Siegman (91) feels that one reason for this is that the scale does not take into account the present state of the individual. According to Sampson and Bindra:

> The validity of the Taylor Scale of Manifest Anxiety was examined with a view to reconciling the contradictory results of the studies of the relation between anxiety and the rate of conditioning. . . . The results indicated that different degrees of manifest anxiety, though the scores within a limited range (19 to 33) are more likely to be associated with a clinical diagnosis of "anxious" than the scores above and below this range. This interpretation helps to reconcile the contradictory earlier findings concerning the relation between conditioning and anxiety. It is suggested that the rate of conditioning may be more closely related to differences in manifest anxiety than are scores on the Taylor scale. (83:258)

It is also felt that the crucial assumption of this scale deals with the willingness of the subject to tell the truth to himself and to the investigator. (50)

Saltz (80) suggests that the data obtained by this scale has generally been misunderstood. He feels that it merely represents an index to the types of

situations that constitute stress for different people. Despite the weaknesses in the test and in the interpretation of the data, it must be noted that to date the Taylor scale is the most widely used measure of anxiety.

Heineman (45) felt that the Taylor scale would be more consistent if the extraneous variables could be eliminated. In order to do this he constructed a forced-choice scale using two sets of anxiety items. (32) The scale consisted of fifty paired statements. One statement of each pair was an anxiety indicator and the other statement of each pair was not. The subject is required to pick one statement in each pair that best describes him. A study of this scale showed that the extraneous variables could not be eliminated but that they could be drastically reduced. (45)

Because several studies have indicated that many of the items on Taylor's scale are not valid predictors of anxiety, Bendig (19) developed a short form of this scale. The twenty item Pittsburg revision of Taylor's scale has shown to be about as reliable as the fifty item scale. Bendig also claims that it is more parismonious of testing time and is probably more valid than the long version of the scale.

Winne also used the MMPI as a basis for his scale. He selected thirty items which he felt differentiated between neurotic and normal people. Although his scale was called a neuroticism inventory it was found to correlate highly with Taylor's scale. Therefore, it has been used in several studies as a test of anxiety. (36)

Another scale based on the MMPI was developed by Welsh. (3) He

proposed an anxiety index formula which yielded anxiety scores that were in agreement with clinical expectations. (109)

Freeman developed an anxiety inventory in which the subject is tested on his ability to judge other people. Although this test is an inventory, it is based on projective techniques. It is assumed that through projective mechanisms the subject's own level of anxiety will be reflected. (40) Some studies have not found support for the validity of this test, but the test has been demonstrated to be valid by other researchers. (11)

The Wechsler-Bellevue Intelligence Scale has been used for diagnosis in many areas of psychopathology. It has been shown that in the testing situation certain qualitative aspects of the subject's behavior can be used to identify features of anxiety. Rashkis and Welsh (77) attempted to determine clinical signs which had been interpreted by psychologists as showing the presence of anxiety in their subjects and objectifying them. The signs which were used were apprehension, compensatory psychomotor activity, distractability, somatic complaints, physical signs and temporary inefficiency on digit span information, block design, arithmetic, object assembly, picture completion, and picture arrangement. If the subject showed five or six of the signs he was probably in an anxious state. If he showed two to four of the signs anxiety was probably only contributory to his problem. If he showed only one or none of the signs he was probably non-anxious. The Wechsler-Bellevue Scale was shown to have little relationship to Taylor's Manifest Anxiety Scale (67) or to psychiatrist's ratings. (54)

Cattell and Scheier developed the IPAT anxiety scale at the Institute for

Personality and Ability Testing (IPAT). (11) Their purpose was to construct a test that would get at clinical anxiety information quickly and in an objective and standard manner. The questionnaire has been shown to be clinically valid for people from the age fourteen to adult. The forty items in this symptom-oriented questionnaire are concerned with five basic factors: defective integration (lack of self sentiment), ego weakness (lack of ego strength), suspicious or paranoid insecurity, guilt proneness, and frustrative tension or id pressure. (5)

The construct validity of the IPAT has been shown by Cattell and other researchers to be between .85 and .90. External validity values are not as high, .30 to .40, but Cattell feels that correlations between clinicians themselves seldom reach higher than .40. (5)

Reliability on this questionnaire has been calculated separately for the covert and overt subscales. The covert items are the less obvious items (21) and their reliability is reported to be .85. (5) The overt items are the more obvious items (21) and their reliability is reported to be .82. (5) Cattell's division of items in the IPAT into covert and overt subscales is similar to the division of the MMPI items into subtle and obvious. (20) A desirable characteristic of this test is its administrative feasibility. Large numbers of people can take it within ten minutes. A standard scoring key is also provided which makes the scoring quick and simple. (5)

One of the newest, and the most different of the anxiety inventories is the State Trait Anxiety Inventory (STAI) which was developed by Spielberger, Gorsuch, and Lushene. The inventory was developed to measure state and trait

anxiety in an expedient and reliable manner. Each of the two scales contain twenty statements. The subject responds to the A-State statements according to how he feels at the time of the test, and to the A-Trait statements according to how he generally feels. (14) (99) Martens emphasizes the value of this tool by stating:

> Among these scales Spielberger's STAI possesses the most impressive credentials and is the only one constructed which assesses state and trait anxiety with separate scales. The STAI has been carefully developed from both theoretical and methodological standpoints. . . . Only through additional research using the STAI will its real merits be unveiled. (62:172)

The test-retest reliability of the A-State scale is relatively low, .16 to .54, but the test-retest reliability of the A-Trait scale is reasonably high, .73 to .86. It is expected that the reliability of the A-State scale should be low because it is supposed to reflect the influence of situational factors which are present at the time of the test. (14) Allen (16) points out that the scale is fakable and that the environmental conditions at the time of the test could possibly affect the results. He also suggests that the test needed to be studied with groups other than those made up entirely of college students. However, since Allen's study was conducted the STAI has been used with different kinds of groups.

The Saslow Screening test was developed to be used as a measure of anxiety proneness. A list of twenty-four symptoms are given to the subject. When pretending that he is in an anxiety-provoking situation he checks all the symptoms that apply to him. The test has a .62 correlation with the psychiatric and psychological ratings. The test is practical in that large numbers of people can take it within ten minutes. (41)

It must be pointed out that all the inventories described are primarily for people who have at least finished elementary school. The measurement of anxiety in children is more likely to be done through techniques other than self-rating forms. The Children's Test Anxiety Scale was developed by Sarason and others. (88) It has forty-three items to which each subject responds yes or no. The reliability of this test is not as desirable as it could be, but it improves as the age of the child increases. The validity of the Children's Test Anxiety Scale is questionable.

Another commonly used form of the self-rating technique of anxiety assessment is the check list. The most comprehensive instrument of this kind deals with stimulus-oriented measures of anxiety. The Mooney Problem Check List contains 330 items which suggest numerous problem areas, one of which may be anxiety. Although the technique emphasizes overall scores, evidence indicates that the scores can be meaningfully interpreted as indices of anxiety. (11)

An Affect Adjective Check List (AACL) was developed by Zuckermann (112) (113) which could not only be given quickly, and scored objectively, but adapted for varying time sets. In other words, this tool measures anxiety states as well as general anxiety proneness. The list consists of twenty-one anxiety-plus words, and seventeen anxiety-minus words. The subject is required to check those words which best describe how he feels at that time and then check those words which best describe how he generally feels. Zuckermann refers to these two conditions as "general" and "today." The general scale showed an internal consistency of .72 and a test reliability of .68. The "today scale" has

an internal consistency of .85 and a test-retest reliability of .31. The low test-retest of the "today scale" is expected. This Check List is only assumed to be valid and, therefore, should be used cautiously.

Verbal Analysis Techniques

The Discomfort-Relief Quotient (DRQ), developed by Dollard and Mowrer is the first attempt to measure tension verbally. It was felt that since anxiety and tension were so similar that this scale would also be a good measure of anxiety. This quotient is a ratio of the number of discomfort words over the number of discomfort plus relief words that are found in a person's speech. The validity of this measure has been questioned by several researchers. (11)

Gleser, Gottschalk, and Springer have developed a more elaborate and very promising scale which is based on the coding of verbal output. This test requires each subject to speak for five minutes on some personal experience. This is repeated six times with the subject being given a different area, such as death or separation, to talk on each time. This test has shown extremely good reliability coefficients, and better than average validity coefficients. (11)

Other verbal techniques have dealt with speech disturbances, unpublished sentences, blocking, and stuttering, but no conclusive data have been gathered about any of these techniques. (11) Perhaps within the next decade more research will be done which will lead to improved verbal techniques of anxiety assessment.

Observer-Rating Techniques

The most widely used technique in anxiety assessment, except for the self-rating technique, is the observer-rating scale. Elizur developed a nine-point rating scale that had an inter-rater reliability of .70. Using categories of anxious behavior, Buss and others developed a scale with an inter-judge reliability of .83. In another study, Buss analyzed patients and reported one factor which was indicative of somatic signs and another which was indicative of motor and ideational cues. An Anxiety Behavior Checklist was developed by McReynolds. This checklist consisted of twenty-five behaviors. An inter-reliability was reported to be .84. (11)

Peer ratings of anxiety have been used by Dildy and Liberty. The most widely used rating scale is a seven-point anxiety scale developed by Overall and Gorham. (11)

Most of these observer-rating techniques take place in an interview. (24) Therefore this technique is very time consuming and requires specially trained personnel. Although these observer techniques are widely used, evidence does not indicate that they are more accurate than good self-report or psychometric procedures. (11)

Physiological Techniques

Many researchers have assumed that anxiety has many physiological correlates. Work in this area has not yet provided valid and reliable techniques for the assessment of anxiety, but research has been initiated with hopes of establishing relationships between anxiety and a variety of physiological measures.

To date these physiological measures do not correlate highly with psychological measures such as Taylor's Manifest Anxiety Scale. This fact has not been discouraging since the validity of the Taylor scale and others like it is still in question. (86)

One of the most widely used measures of anxiety is the Galvanic Skin Response (GSR). The two most popular measures of this type are skin resistance to an externally applied current and the amplitude of skin resistance changes to specific stimulation. Recently, the frequency of measurable fluctuations in skin resistance which occur with specific stimulation has provided important information. (49) The GSR is sometimes used in combination with other physiological and psychological measures. (56) (75)

Additional physiological measures which have been used in anxiety assessment include: systolic blood pressure, diastolic blood pressure, heart rate, cardiac output, peripheral resistance, hand temperature, palmar skin conductance, respiratory rate, frontalis muscle tension, number of muscle potential peaks, finger tremor, blood sugar, salivary output, pH level of salivary output, pupil dilation, reticilar activation, and increases in epinepherine, nor-epinepherine, and hydrocortisone secretion. (46) (64) (111) Unfortunately research does not indicate that these variables have high intercorrelations. In fact, the vast majority of these correlations were insignificant. (64)

Perhaps the greatest problem with using physiological measures to predict anxiety is that autonomic responses are different for different people and

different situations. (111) According to Wyrick, "Patterns of responses, measured across varied fear evoking stimuli and analyzed with multivariate techniques may be more productive in the understanding of physiological measures of anxiety state." (111:62) It must also be noted that it is nearly impossible to measure so-called trait anxiety using physiological techniques. Some measures that have been used, but which the reader considers questionable are: number of chins or dips that can be executed, slow tempo in leg circling, poor performance on the Cureton motor coordination test, recovery pulse rate after cold pressor "stress," slow reaction time, smaller girth and length of bones, and increased pulse rate to shocks. (4)

The preceding pages are intended to offer testimony that the quantity of tools available for the assessment of anxiety is numerous. Unfortunately, it has also become obvious that the quality of the majority of these tools has not been as impressive as their quantity. Cattell and Scheier sum it up by stating:

> "Modern" man remains unwilling to apply to self-understanding the very scientific attitudes and principles which have won him awesome material and technical ascendency. This is the twentieth-century paradox--that man is more and more the master of things, but dangerously obsolete in his techniques for understanding and mastering himself. (4:1)

STUDIES OF PSYCHOLOGICAL ANXIETY AND ITS CORRELATES

An understanding of the concept of anxiety is derived from studying its relationships with other concepts. (47) Evidence is herewith presented which distinguishes between anxiety and the following phenomena: general behaviors, that is, learning and performance and motor behavior; individual traits, that is,

age, communication effectiveness, concept formation, intelligence and school achievement, motivation, reaction time, and sex; and situation-related factors, that is, competition, failure, task difficulty, test-taking, and examinations. All of these factors must be of concern at some time to athletes on intercollegiate teams.

Anxiety and General Behaviors

Learning and performance. A considerable amount of research has been conducted in the area of learning and performance and how they are affected by anxiety. Marteniuk (61) points out, however, that many of these studies are weak due to the short amount of time the subject is given to practice, and quickness with which he is required to respond.

Farber and Spence (39) conducted a study in which they required forty high anxious and forty low anxious subjects to perform a complex stylus maze task. The subjects were placed in one of the two groups on the basis of their scores on Taylor's Manifest Anxiety Scale. The results of this study showed that the maze performance of the anxious subjects was significantly poorer than that of the nonanxious subjects. It was pointed out that the differences were not due to general learning ability but rather to differences in drive level.

Three studies were done to determine the effects of anxiety on serial rote learning. Taylor and Spence (104) analyzed twenty high anxious subjects. A series of twenty choices between two verbal responses was presented to each subject. The subject was considered to have learned when he could anticipate the

correct response at each choice point for two successive trials.

Spielberger and Smith (101) had high anxious and low anxious subjects learn a series of nonsense syllables. In both the study by Taylor and Spence and the study by Spielberger and Smith the results agreed with the results of the study by Farber and Spence. The low anxious subjects performed significantly better than the high anxious subjects.

The third test involving serial rote learning was conducted by Montague. (69) The results of this study agreed with the previously discussed studies. He also reported that as the task was made easier, the performance of the high anxious subjects improved.

The majority of the research indicates that with an increase in anxiety there is a decrease in learning and performance. Sampson states, "It seems plausible to assume that individuals faced with the preceding conflict situation will perform less well than those in a situation comparable in all respects other than the conflict of needs and behavioral acts." (82:511)

Motor Behavior and Performance. There has been a relatively small amount of research conducted to determine the effects of psychological stress on motor performance. (55) Carron (27) attempted to determine the effects of anxiety on sixty high anxious and sixty low anxious subjects. The performance task involved was a twenty-second balance on a stabilometer. Each subject was given seventy trials over a two day period. When stress was applied early in the learning process, the performance of the low anxious subjects was significantly better than that of the high anxious subjects. (27) This is in keeping with

results that have been reported on verbal learning tasks. However, when stress was applied late in the learning process an equal decrement in the scores of both groups was reported. (27)

Martens and Landers (63) also reported that low anxious subjects performed significantly better in the initial stages of the learning of a coincident timing task. Once the skill had been learned there was no difference between the groups.

In another study in which effects of stress and anxiety on stabilometer performance were investigated, Carron and Marford (29) reported no difference between high anxious and low anxious subjects in the amount learned.

Several studies have been published which reported results which are opposed to the Spence-Taylor drive theory of Manifest Anxiety. Wright, Gescheider, and Battig (110), using Greek letter writing found that high anxious subjects performed significantly better than low anxious subjects. There researchers concluded that, "Since the present results appear uninterpretable in terms of a theory of general drive, serious questions are raised as to the applicability of this theory to motor learning tasks in general." (110:368) Wiggins, and others, (108) reported that perceptual-motor steadiness was not affected by the individual's level of anxiousness.

A personality test was conducted on persistent non-swimmers by Whiting and Stembridge. (107) Although the researchers were not directly concerned with anxiety, they did make several conclusions regarding this phenomenon. It was shown that swimmers were more introverted than non-swimmers. Anxiety

states were also significantly higher in introverted individuals than in extroverted individuals. It was, therefore, concluded that the swimmers were more anxious than the non-swimmers.

From the few studies cited, it can clearly be seen that the research relating anxiety and motor behavior is conflicting and inconclusive. According to Spielberger, "The future of research on anxiety and motor behavior would seem to depend upon the development of appropriate motor tasks in which it is possible to assess the relative strength of correct and competiting tendencies." (97:277)

Anxiety and Individual Traits

Age. Bendig (18) administered Taylor's Manifest Anxiety Scale to 497 undergraduates. The results of this test revealed that for men there was a slight curvilinear relationship between anxiety and age. Men between the ages of twenty-three and twenty-five showed the highest level of anxiety. Bendig found no relationship between age and anxiety for women.

Communicative Efficiency. A great deal of within team communication is necessary if the team is going to play well. Anxiety and its effects on communicative efficiency was investigated in a study by Gynther. (43) Using the Welsh Anxiety Scale to assess anxiety level and an interview to determine communicative efficiency, Gynther concluded that anxiety and stress did interfere with a person's ability to communicate effectively.

Concept Formation. Understanding the game is extremely important if a

good performance is desired. Denny (37) conducted a study in which he investigated the relationship between anxiety and concept formation. He reported that for highly intelligent subjects, the high anxiety group performed better on the concept formation task. The opposite was true for the lower intelligence group of subjects.

Intelligence and School Achievement. Kerrick (51) has suggested that there is a relationship between intelligence and anxiety. It is this relationship, she feels, which has caused the results of studies dealing with anxiety and learning to be contradictory. Many researchers have addressed themselves to the problem of investigating the relationship between anxiety and intelligence. In a study by Calvin and others (26), one group of college students of normal intelligence and another group of college students with a lower I.Q. were studied to see if there was any relationship between the Wechsler-Bellevue Intelligence Test Scores and the Taylor Manifest Anxiety Scale Scores. Results of the normal intelligence group and the group as a whole indicated that there was a significant negative correlation between the measures of anxiety and intelligence.

Kerrick (51) also found that high anxious subjects were less intelligent than low anxious subjects. This was true of both measures of intelligence used: mechanical aptitude and word knowledge.

Matarazzo and others, (66), in a study relating intelligence and anxiety, found results that were somewhat contradictory to the results of the previously mentioned studies. Of the three measures of intelligence that were used in their

investigation, only one, the American Council of Education (ACE) Psychological Examination, showed a significant negative correlation between anxiety and intelligence. The other two measures showed no relationship. It must be pointed out that the ACE test was the only one used which had a time limit. The researchers felt that this fact possibly could account for the differences in results.

A study was conducted by Dana (33) using the Wechsler-Bellevue Intelligence test and the MMPI. The results showed no relationship between anxiety and intelligence. Dana explained this by writing, "Although no significant relationship was demonstrated, the present statistical results illustrate that faulty control of revelant variables may have contributed to some of the apparent significance of past research." (33:39)

Scholastic Achievement has also been studied in its relationship to anxiety. Like studies of intelligence and anxiety, studies of grade point average (GPA) and anxiety have produced conflicting evidence. In two studies using high, intermediate and low intelligence groups, Spielberger (98) (100) reported results which indicated that there was no relationship between anxiety and intelligence in high and low anxious groups. In intermediate intelligence groups there was a significant inverse relationship. Spielberger explained these results by saying that high intellectual students would invariably make good grades and low intellectual students would always do poorly due to the difficulty of college work, and therefore, the anxiety level of these two groups would have no effect on their achievement.

Sarason (85) investigated GPA and its relationship between test anxiety

(TA) and general anxiety (GA). GA scores correlated positively with GPA and TA scores correlated negatively with GPA. This negative correlation disappeared as the number of years in college increased. Klugh and Bendig (52), after conducting a study on the relationship between anxiety and GPA, concluded that the relationship between anxiety and GPA had not been investigated enough to warrant the use of one as a predictor of the other.

Motivation. It was revealed in studies by Raphelson (76) and Davids (35) that there is a significant negative correlation between anxiety and motivation. Raphelson studied this relationship using a complex motor task. Davids, on the other hand manipulated the motivational level of the subjects rather than measuring it and using it as a constant. In both cases low anxious subjects were found to be more highly motivated than high anxious subjects.

Sarason (84), in a study using serial learning, obtained results like those of Raphelson and Davids. Low anxious subjects performed better with highly motivational instruction and high anxious subjects performed better with low motivational instructions. In a study of swimming achievement, results showed that the best achievers demonstrated low anxiety and high motivation. (34)

Reaction Time. It would seem logical that since low anxious subjects have generally been shown to perform better than high anxious subjects that they would probably have the faster reaction times. Kamin and Clark (48), in a study requiring subjects to press a key in response to a buzzer, concluded that high anxious subjects have slower reaction times than low anxious subjects. They

found this to be true for simple reaction time (SRT) as well as reaction time motivated by avoidance of shock (ART). High anxious subjects did, however, show a greater increase in speed of reaction from SRT to ART conditions.

Castaneda (30) studied this relationship and found that high anxious subjects had a slower reaction time than low anxious subjects if the stimulus intensity was weak. If the stimulus intensity was strong, the high anxious subjects showed a faster reaction time. Nash and others (71) found no relationship between anxiety and simple reaction time.

Sex. The majority of research investigating the relationship between anxiety and sex indicates that females have significantly higher levels of anxiety than men. Quarter and Laxer (74) administered the Taylor Manifest Anxiety Scale to 3,053 high school males and 2,452 high school females. The mean anxiety scores for males ranged from 14.02 to 18.43, and for females these scores ranged from 18.15 to 21.58. A study by Sinick (84) which used the Taylor Manifest Anxiety Scale and the Sarason and Mandler Test Anxiety Questionnaire produced data which agreed with the results of previously mentioned studies.

Russell and Sarason (78), using anagram solutions, reported no difference in anxiety level due to sex, except in the case where the subjects were required to verbalize continually as they attempted to solve the anagram. In this case, high anxious females performed significantly lower than low anxious females and all males. Bendig (18) using a shortened form of Taylor's Manifest Anxiety Scale, found no significant difference in anxiety level between males and females. Neumann (72), using Cattell's four questionnaire items, found males to

have a significantly higher mean score than females.

Anxiety and Situation-Related Factors

Competition. The effects of anxiety on performance in the competitive situation have been widely studied. The majority of this research has dealt with verbal performance tasks or simple motor tasks. Research dealing with competition in relation to sport has been extremely limited. In studies by Spence, Farber and McFann (96) and Spence, Taylor, and Ketchel (97), using verbal paired-associates, it was revealed that non-anxious subjects performed better than anxious subjects in competitive situations. In non-competitive situations high anxious subjects displayed the better performance.

Two studies involving a single motor task also revealed that low-anxious subjects performed better under competitive situations, and high-anxious subjects performed better when no competition was involved. The task in the study by Ryan and Lakie (79) was a ring-peg test, and the task used by Vaught and Newman (106) was a motor-steadiness task which involved inserting a pencil stylus into a multiholed box without touching the sides of the holes.

Research investigating the relationship between anxiety and the competitive sport situation has not produced any conclusive evidence, just as the research on competition on the performance of a simple learning task. In a study of the personality traits of athletes, Booth (22) concluded that athletes scored significantly lower on the anxiety portion of the MMPI than did non-athletes. This is the expected result due to the fact that low anxious subjects

have been shown to perform better in a competitive situation. Hammer (44), on the other hand, compared university football players and wrestlers to non-athletes and found that there was no difference in their levels of anxiety.

Johnson (46) measured the pre-game anxiety levels of football players and found that pre-game emotion of anxiety did not seem to be prevalent. Langer (53) found that, although football players generally had low anxiety levels, it was an aid to performance if their anxiety level increased to a moderate level just before the game. It was also noted by Johnson (46) that in the case of wrestlers there was a strong indication that anxiety level was high just before the match and that this level of anxiety affected performance.

In opposition to the results of Johnson's study, Malumphy (58) found that athletes who participated in individual sports were less anxious than those who participated in team sports.

Failure. Failure at some point in time is almost inevitable in sport. Several studies have been done which investigated the relationship between anxiety and failure. Sarason (84), using a serial learning task, reported that all subjects were affected equally by failure regardless of their anxiety level. Lucas (57) found the same results as Sarason, but only in cases where one failure was reported. As the number of failures reported to the subjects increased, the superiority of the non-anxious subjects over the anxious subjects also increased.

Although there has been a vast amount of research conducted on the phenomenon of anxiety the need for more is obvious. In nearly every area of

anxiety research the data collected has been used to form contradictory conclusions. Literature shows that the interrelationship of anxiety with many other factors has made single variate techniques of research obsolete. Only with increased use of multivariate techniques can researchers hope to determine the true effects of anxiety on performance.

Task Difficulty. Studies by Sarason (86) and Sarason and Palola (87) indicated that it was advantageous to be a low anxious individual when performing a task. As the difficulty of the task increased the advantage of being a low anxious person became greater. The tasks used by Sarason and Palola were the digit symbol test and an arithmetic test.

Tests and Examinations. Three hundred and eighty-nine undergraduates were questioned as to the amount of anxiousness they felt in a test situation, and various non-test situations. Gordon and Sarason reported that, "Significantly more students who report experiencing anxiety in a testing situation also report that they experience anxiety in other situations." (42:323) This is indicative of the relationship between test anxiety and general anxiety.

In relation to the results of Gordon and Sarason's study it was not surprising that a study of Paul and Eriskin (73) showed results concerning test anxiety which were similar to the results of many of the studies concerning general anxiety. No relationship was found between anxiety level and test performance, except for the seventy percent of the subjects who fell into the broad middle range of scholastic ability. In this group high anxious subjects performed better on the

experimental examination than did the low anxious subjects.

Contradictory results were reported in a study by Mandler and Sarason. (60) On the Kohs Block Design the low anxious subjects performed better and more consistently than the high anxious subjects. Silverman and Blitz (92) agreed suggesting that high anxious persons did not respond adaptively to examination threat.

SUMMARY OF THE LITERATURE REVIEW

The data reviewed deriving from research in the recent past has been directed more towards clinical approaches to the study than to the normal individual. There are innumerable theories and tests available for the study of anxiety, but to date confusion among researchers still exists. For example, after twenty years Spence's MAS is still widely used in anxiety research. Spence, herself, deplores this continued use of the tool but admits that, to date, there is nothing better. (95) Background information acquired from the literature review assisted the writer in understanding the problems researchers face in their attempts to define and measure anxiety.

CHAPTER III

PROCEDURES

In seeking answers to the questions posed in the statement of the problem, the investigator reviewed the literature and formulated the hypotheses. Thereafter the following procedures were followed in completing this investigation.

SELECTION OF SAMPLE

Men's and women's lacrosse and tennis teams were selected from numerous colleges and universities on the east coast. The teams selected were those sponsoring competitive programs in lacrosse and tennis and whose coach was either known by the investigator or a colleague of the investigator or listed as an Association for Intercollegiate Athletics for Women (AIAW) member. A complete list of the teams involved in the study is presented in Appendix B.

After a list of men and women tennis and lacrosse coaches had been compiled, a typewritten letter was sent to each coach asking him/her to participate in the study by administering the inquiry forms to the players on his/her team. In the case of the men's lacrosse coaches the letter asked if they would be willing to have someone else administer the test to the players on their team. (See Appendix B)

A response post card was enclosed in each letter. The respondent was asked to either accept or decline participating in the study, indicate the number of

players on his/her squad, and specify the date of the team's last regular season game or match. All coaches who agreed to participate in the study were involved.

The investigation was conducted using eighteen women's tennis squads involving a total of 170 players, twelve women's lacrosse squads with a total of 258 players, four men's tennis squads comprised of 23 players in all, and two men's lacrosse squads with a total of 48 players. In order to establish a similar time for all subjects to respond to the forms, it was arbitrarily decided that responses be collected at the end of the season of competition. This decision was partially influenced by discussion with coaches.

SELECTION OF TEST

It seemed desirable to select a test that would measure the general anxiety levels of athletes as well as their anxiety level during a season of competition. The State-Trait Anxiety Inventory (STAI) developed by Spielberger, Forsuch, and Lushene provided the best credentials of the tests that were developed to measure both types of anxiety.

Correlated with scores on Cattell's IPAT, validity coefficients ranged from .75 to .77; with Taylor's TMAS scores, from .79 to .83; and with Zuckerman's AACL scores, from .52 to .58. The test-retest reliability for the A-Trait scale ranged from .73 to .86. The A-State r's were relatively low, ranging from .16 to .54. During the test-retest interval subjects were successively exposed to a brief period of relaxation, a difficult IQ test, and a film depicting accidents resulting in injury or death. The low r's for the A-State were

anticipated because the scale should be affected by unique situational factors existing at the test administration. The increased popularity of the STAI among physical educators (23, 42a, 62) also influenced selection of this particular instrument.

DEVELOPMENT OF OTHER EVALUATIVE MATERIALS

It was necessary to obtain certain biographical and team information in order to test many of the formulated hypotheses. One biographical sheet for individual players (see Appendix C) and one for teams (see Appendix C) which could yield data that would assist in answering questions posed in Chapter I was therefore compiled. The biographical information sheet for individuals was printed on blue paper, and the team information sheet was printed on gold paper for ease in recognition and tabulation. To maintain simplicity in coding a forced choice type of response was used to determine sport preferences.

TEST ADMINISTRATION

As each affirmative response card arrived a packet of test materials was prepared for that team. Each packet included a self-addressed, stamped return envelope, one test sheet for each member of the team, one biographical information sheet for each member of the team, one team information sheet, one green instruction sheet (see Appendix C), and one pink sheet which was to thank the coaches for volunteering to participate in the study. (See Appendix C)

Approximately two and one half weeks before each team's last match, the

test packet was sent to the coach. The timing was intended to permit the testing session to be scheduled but not to allow too much time during which packets would be lost or forgotten. The packets were sent through the mail via educational material rate. As soon as the testing was completed the coaches returned all the materials to the investigator. Several coaches were delinquent; to each of these individuals, a reminder was sent.

SCORING OF THE TEST

All of the STAI tests were hand scored by the investigator. The STAI scoring key was used to facilitate this process.

TREATMENT AND INTERPRETATION OF THE DATA

The data were primarily analyzed using a one-way analysis of variance. The Newman-Keuls analytical procedure was applied when necessary. All of the ANOVA's were calculated using University of North Carolina at Greensboro computing facilities.

The data which were concerned with previously established norms were analyzed using t-tests. These calculations were made by the researcher with the aid of an electronic desk calculator. Two levels of significance were accepted: .05 or .01.

The data dealing with sport preference and reason for participating were organized into tables in order to make it understandable and easy to read.

CHAPTER IV

THE ANALYSIS OF DATA

The analysis of data is organized as follows: (1) Differences in anxiety scores according to personal factors, such as sex and age; (2) according to family and home related factors such as geographic location of home, family size, and sibling order; (3) according to educational related factors, such as major field of study, class, grade point average, and the geographic location of the school which they attend; and (4) according to factors dealing with sport experience, such as whether or not men and women participate in sport, what they play, previous experience, school size, and team record. In each item, state responses are reported first, then trait.

To determine whether or not background factors could be associated with state or trait anxiety levels, significance of differences were calculated. Obtained F-values or t-values are indicated in Tables 1 through 84 and represent whether or not such differences are statistically significant.

DIFFERENCES IN ANXIETY SCORES ACCORDING TO PERSONAL FACTORS

Are there differences among the psychological anxiety levels of athletes that may be associated with personal factors?

TABLE 1

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES
OF TENNIS PLAYERS ACCORDING TO SEX

S	SS	DF	MS
Total (Uncorrected)	287383.000	193	
Overall Mean	269721.373	1	269721.373
Total (Corrected)	17661.627	192	
Treatments	11.376	1	11.376
Residual	17650.251	191	92.410
N=193	$F_{1,191}=.123$		

The mean value for males was 38.04 and the mean value for females was 37.29. A table of F reveals that the F-value is not significant at the five percent level of confidence.

TABLE 2

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES
OF TENNIS PLAYERS ACCORDING TO SEX

S	SS	DF	MS
Total (Uncorrected)	281425.000	193	
Overall Mean	268377.249	1	268377.249
Total (Corrected)	13047.751	192	
Treatments	92.659	1	92.659
Residual	12955.092	191	67.828
N=193	$F_{1,191}=1.366$		

The mean value for males was 39.17 and the mean value for females was 37.04. A table of F reveals that the F-value is not significant at the five percent level of confidence.

TABLE 3

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES
OF LACROSSE PLAYERS ACCORDING TO SEX

S	SS	DF	MS
Total (Uncorrected)	488743.000	306	
Overall Mean	461301.180	1	461301.180
Total (Corrected)	27441.820	305	
Treatments	8.628	1	8.628
Residual	27433.192	304	90.241
N=306	$F_{1,304}=.096$		

The mean value for males was 38.44 and the mean value for females was 38.90. A table of F reveals that the F-value is not significant at the five percent level of confidence.

TABLE 4

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES
OF LACROSSE PLAYERS ACCORDING TO SEX

S	SS	DF	MS
Total (Uncorrected)	473593.000	306	
Overall Mean	455881.441	1	455881.441
Total (Corrected)	17711.559	305	
Treatments	452.291	1	452.291
Residual	17259.267	304	56.774
N=306	$F_{1, 304}=7.966$*		

*Significant at .01

The mean value for males is 41.42 and the mean value for females is 38.07. A table of F reveals that the obtained 7.966 exceeds the critical value at the one percent level of confidence (6.81).

TABLE 5

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES
OF ATHLETES ACCORDING TO SEX

S	SS	DF	MS
Total (Uncorrected)	782495.000	499	
Overall Mean	736066.583	1	736066.583
Total (Corrected)	46428.417	498	
Treatments	1.604	1	1.604
Residual	46426.813	497	93.414
N=499	$F_{1, 497}=.017$		

The mean value for males is 38.27 and the mean value for females is 38.43. A table of F reveals that the F-value is not significant at the five percent level of confidence.

TABLE 6

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF ATHLETES ACCORDING TO SEX

S	SS	DF	MS
Total (Uncorrected)	757133.000	499	
Overall Mean	725199.457	1	725199.457
Total (Corrected)	31933.543	498	
Treatments	588.565	1	588.565
Residual	31344.978	497	63.068
N=499	$F_{1, 497}=9.332$*		

*Significant at .01

The mean value for males is 40.79 and the mean value for females is 37.68. A table of F reveals that the obtained 9.332 exceeds the critical value at the one percent level of confidence (6.70).

TABLE 7

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES
OF MEN ATHLETES ACCORDING TO AGE

S	SS	DF	MS
Total (Uncorrected)	109481.000	71	
Overall Mean	103973.084	1	103973.084
Total (Corrected)	5507.915	70	
Treatments	745.811	4	93.953
Residual	5132.104	66	77.759
N=70	$F_{4,66}=1.208$		

The mean value for men who are eighteen or less is 37.67, for men who are nineteen is 39.33, for men who are twenty is 41.44, for men who are twenty-one is 34.75, and for men who are twenty-two or more is 38.17. A table of F reveals that the obtained F-value is not significant at the five percent level of confidence.

TABLE 8

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO AGE

S	SS	DF	MS
Total (Uncorrected)	122330.000	71	
Overall Mean	117553.817	1	117553.817
Total (Corrected)	4785.183	70	
Treatments	645.746	4	161.436
Residual	4139.438	66	62.719
N=70	$F_{4, 66}=2.574$*		

*Significant at .05.

The mean value for men who are eighteen or less is 37.44, for men who are nineteen is 41.67, for men who are twenty is 45.75, for men who are twenty-one is 39.44, and for men who are twenty-two or more is 38.28. A table of F reveals that the obtained 2.574 exceeds the critical value at the five percent level of confidence (2.51).

Since there were five treatment groups it was necessary to further analyze the data to determine which of the means was significantly different. A Newman-Keuls analysis was calculated.

TABLE 9

NEWMAN-KEULS ANALYSIS OF TRAIT ANXIETY SCORES
MEN ATHLETES ACCORDING TO AGE

Treatments		1	2	3	4	5
	Means	37.44	38.28	39.44	41.67	45.75
1	37.44		.84	2.00	4.23	8.31
2	38.28			1.16	3.39	7.47
3	39.44				2.23	6.31
4	41.67					4.08
5	45.75					

Although the analysis of variance showed that there was a significant difference in this group of scores, it was not large enough to show up in the Newman-Keuls analysis in spite of the use of the harmonic mean.

TABLE 10

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO AGE

S	SS	DF	MS
Total (Uncorrected)	660234.000	425	
Overall Mean	621017.685	1	621017.685
Total (Corrected)	39216.315	424	
Treatments	369.633	4	92.408
Residual	38846.682	421	92.492
N=424	$F_{4, 420}=0.999$		

The mean value for women who are eighteen or less is 37.38, for women who are nineteen is 38.99, for women who are twenty is 39.23, for women who are twenty-one is 36.93, and for women who are twenty-two or more is 37.85. A table of F reveals that the obtained F-value is not significant at the five percent level of confidence.

TABLE 11

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES
OF WOMEN ATHLETES ACCORDING TO AGE

S	SS	DF	MS
Total (Uncorrected)	633502.000	425	
Overall Mean	607332.602	1	607332.602
Total (Corrected)	26169.398	424	
Treatments	338.983	4	84.746
Residual	25830.415	420	61.501
N=424	$F_{4, 420}=1.378$		

The mean value for women who are eighteen or less is 27.52, for women who are nineteen is 38.08, for women who are twenty is 39.07, for women who are twenty-one is 36.49, and for women who are twenty-two or more is 36.59. A table of F reveals that the F-value obtained in the calculations is not significant at the five percent level of confidence.

DIFFERENCES IN ANXIETY SCORES ACCORDING TO FAMILY AND HOME RELATED FACTORS

Are there differences among the psychological anxiety levels of athletes that may be associated with family and home related factors?

TABLE 12

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR HOME STATE

S	SS	DF	MS
Total (Uncorrected)	109481.000	71	
Overall Mean	103973.084	1	103973.084
Total (Corrected)	5507.916	70	
Treatments	359.703	3	119.901
Residual	5148.212	67	76.8389
N=71	$F_{3,67}=1.560$		

The mean value for men from New York is 38.29, for men from Maryland is 38.36, for men from North Carolina is 42.08, and for men from all other states is 35.00. A table of F reveals that the F-value is not significant at the five percent level of confidence.

TABLE 13

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR HOME STATE

S	SS	DF	MS
Total (Uncorrected)	123659.000	71	
Overall Mean	119187.056	1	119187.056
Total (Corrected)	4471.9434	70	
Treatments	150.871	3	50.290
Residual	4321.072	67	64.494
N=71	$F_{3,67}=.780$		

The mean value for men from New York is 42.12, for men from Maryland is 40.20, for men from North Carolina is 38.77, and for men from all other states is 42.75. A table of F reveals that the F-value is not significant at the five percent level of confidence.

TABLE 14

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR HOME STATE

S	SS	DF	MS
Total (Uncorrected)	669732.000	428	
Overall Mean	629484.570	1	629484.570
Total (Corrected)	40247.430	427	
Treatments	285.351	6	47.558
Residual	39962.079	421	94.922
N=428	$F_{6, 421}=.501$		

The mean value for women from Maryland is 38.59, for women from Pennsylvania is 37.71, for women from all other states is 37.68, for women from New Jersey is 38.16, for women from Massachusetts is 37.22, for women from Virginia is 39.74, and for women from North Carolina is 39.37. A table of F reveals that the obtained F-value is not significant at the five percent level of confidence.

TABLE 15

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR HOME STATE

S	SS	DF	MS
Total (Uncorrected)	635926.000	428	
Overall Mean	610002.252	1	610002.252
Total (Corrected)	25923.747	427	
Treatments	269.027	6	44.838
Residual	25654.721	421	60.938
N=428	$F_{6, 421}=.736$		

The mean value for women from Maryland is 38.48, for women from Pennsylvania is 37.60, for women from all other states is 38.04, for women from New Jersey is 38.41, for women from Massachusetts is 35.61, for women from Virginia is 36.97, and for women from North Carolina is 38.26. A table of F reveals that the obtained F-value is not significant at the five percent level of confidence.

TABLE 16

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR FAMILY SIZE

S	SS	DF	MS
Total (Uncorrected)	109481.000	71	
Overall Mean	103973.084	1	103973.084
Total (Corrected)	5507.915	70	
Treatments	527.374	4	131.844
Residual	4980.541	66	75.463
N=70	$F_{4,66}=1.747$		

The mean values for men from a two or less child family is 36.62, for men from a three child family is 37.93, for men from a four child family is 39.92, for men from a five child family is 39.28, and for men from a six or more child family is 30.88. The obtained F is not significant at the five percent level of confidence.

TABLE 17

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR FAMILY SIZE

S	SS	DF	MS
Total (Uncorrected)	122339.000	71	
Overall Mean	117553.817	1	117553.817
Total (Corrected)	4785.183	70	
Treatments	324.615	4	81.154
Residual	4460.568	66	67.584
N=70	$F_{4,66}=1.201$		

The mean value for men from a two or less child family is 41.52, for men from a three child family is 43.27, for men from a four child family is 40.77, for men from a five child family is 39.36, and for men from a six or more child family is 35.88. The F-value is not significant at the five percent level of confidence.

TABLE 18

ANALYSIS OF AVRIANCE OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR FAMILY SIZE

S	SS	DF	MS
Total (Uncorrected)	662420.000	424	
Overall Mean	622942.226	1	622942.226
Total (Corrected)	39477.774	423	
Treatments	524.644	4	131.161
Residual	38953.130	419	92.967
N=423	$F_{4, 419}=1.411$		

The mean value for women who come from a family with two or less children is 38.35, for women from a family with three children is 38.70, for women from a family with four children is 39.54, for women from a family with five children is 35.54, for women from a family with six or more children is 37.66. A table of F reveals that the calculated F is not significant at the five percent level of confidence.

TABLE 19

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR FAMILY SIZE

S	SS	DF	MS
Total (Uncorrected)	625245.000	424	
Overall Mean	599479.361	1	599479.361
Total (Corrected)	25765.639	423	
Treatments	117.316	4	29.329
Residual	25648.323	419	61.213
N=423	$F_{4, 419}=0.479$		

The mean value for men who come from a family with two or less children is 37.22, for men from a family with three children is 38.35, for men from a family with four children is 37.45, for men from a family with five children is 37.50, and for men from a family with six or more children is 36.81. The F-value is not significant at the five percent level of confidence.

TABLE 20

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR SIBLING ORDER

S	SS	DF	MS
Total (Uncorrected)	109481.000	71	
Overall Mean	103973.084	1	103973.084
Total (Corrected)	5507.915	70	
Treatments	35.718	2	17.859
Residual	5472.197	68	80.473
N=70	$F_{2,68}=0.222$		

The mean value for men who were the first born is 39.00, for men who were the second born is 37.27, and for men who were born third or later is 38.42. The F is not significant at the five percent level of confidence.

TABLE 21

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR SIBLING ORDER

S	SS	DF	MS
Total (Uncorrected)	121459.000	71	
Overall Mean	116741.422	1	116741.422
Total (Corrected)	4717.577	70	
Treatments	20.841	2	10.420
Residual	4696.736	68	69.071
N=70	$F_{2,68}=0.151$		

The mean value for men who were the first born is 40.96, for men who were the second born is 40.91, and for men who were born third or later is 39.79. A table of F reveals that the 0.151 F is not significant at the five percent level of confidence.

TABLE 22

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR SIBLING ORDER

S	SS	DF	MS
Total (Uncorrected)	664636.000	424	
Overall Mean	624169.396	1	624169.396
Total (Corrected)	40466.604	423	
Treatments	368.883	3	122.961
Residual	40097.720	420	95.471
N=423	$F_{3, 420}=1.288$		

The mean value for women who were the first born is 39.01, for women who were the second born is 38.75, for women who were the third born is 37.97, and for women who were born fourth or later is 36.09. A table of F reveals that the 1.288 F is not significant at the five percent level of confidence.

TABLE 23

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR SIBLING ORDER

S	SS	DF	MS
Total (Uncorrected)	615700.000	424	
Overall Mean	590862.226	1	590862.226
Total (Corrected)	24837.774	423	
Treatments	571.247	3	190.416
Residual	24266.527	420	57.777
N=423	$F_{3, 420}=3.296$*		

*Significant at .05

The mean value for women who were the first born is 38.02, for women who were the second born is 37.81, for women who were the third born is 37.12, and for women who were born fourth or later is 34.78. A table of F reveals that this F-value exceeds the critical value at the five percent level of confidence (2.62). Therefore this F-value is significant at the five percent level of confidence.

Since there were four treatment groups it was necessary to further analyze the problem using the Newman-Keuls analytical procedure to determine which of the means were significantly different.

TABLE 24

NEWMAN-KEULS ANALYSIS OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR SIBLING ORDER

Treatments		1	2	3	4
	Means	34.78	37.12	37.18	38.02
1	34.78		2.34	3.03*	3.24*
2	37.12			.69	.90
3	37.18				.21
4	38.02				

The Newman-Keuls analysis showed that there was a significant difference between women athletes who were first born and those who were born fourth or later. There was also a significant difference found between women athletes who were second born and those who were born fourth or later.

DIFFERENCES IN ANXIETY SCORES ACCORDING TO EDUCATIONAL RELATED FACTORS

Are there differences among the psychological anxiety levels of athletes that may be associated with educational related factors?

TABLE 25

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR MAJOR

S	SS	DF	MS
Total (Uncorrected)	104856.000	68	
Overall Mean	99411.765	1	99411.765
Total (Corrected)	5444.235	67	
Treatments	715.574	4	178.894
Residual	4728.661	63	75.058
N=67	$F_{4,63}=2.383$		

The mean value for men preparing for a professional occupation is 36.28, for men studying in social or behavioral sciences is 41.35, for men studying in physical education or recreation is 33.33, for men studying in physical or natural sciences is 41.92, and for men studying in any other area is 34.75. Although the obtained F-value is close to the critical value at the five percent level of confidence (2.52) it is not significant.

TABLE 26

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR MAJOR

S	SS	DF	MS
Total (Uncorrected)	115434.000	68	
Overall Mean	110889.941	1	110889.941
Total (Corrected)	4544.059	67	
Treatments	1034.414	4	258.604
Residual	3509.644	63	55.707
N=67	$F_{4, 63}=4.642$*		

*Significant at .01

The mean value for men studying for a professional occupation is 35.61, for men studying in social or behavioral sciences is 42.20, for men studying in physical education or recreation is 37.50, for men studying in physical or natural sciences is 46.83, and for men studying in any other area is 39.50. The obtained F-value exceeds the critical value at the five percent level of confidence (2.52) and also exceeds the critical value at the one percent level of confidence (3.65). The obtained F-value is therefore significant at both levels of confidence.

Since there were five treatment groups, it was necessary to use the Newman-Keuls analysis in order to determine which of the means were

significantly different.

TABLE 27

NEWMAN-KEULS ANALYSIS OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR MAJOR

Treatments		1	2	3	4	5
	Means	35.61	37.50	39.50	42.20	46.83
1	35.61		1.89	3.89	6.59	11.22*
2	37.50			2.00	4.70	9.33*
3	39.50				2.70	7.33
4	42.20					4.63
5	46.83					

Considering 11.22 as significant, there is a real difference in trait anxiety scores between college men who are studying for a professional occupation and those who are studying physical or natural science. There is also a significant difference between men who are studying physical education and men who are studying physical or natural sciences.

TABLE 28

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR MAJOR

S	SS	DF	MS
Total (Uncorrected)	656100.000	415	
Overall Mean	615634.352	1	615634.352
Total (Corrected)	40465.648	414	
Treatments	834.214	7	119.174
Residual	39631.434	407	97.374
N=414	$F_{7, 407}=1.223$		

The mean value for women studying in physical education is 38.38, for women studying in all other areas of education is 38.37. Women studying in the humanities are represented by a mean of 41.10; women studying in physical or natural sciences 37.29; women studying in social or behavioral sciences 38.90; women studying in all non specified areas 36.93. Obtained means for women studying for a professional occupation is 42.52, and those women whose major is undeclared is 36.45. The calculated F of 1.223 is not significant at the five percent level of confidence.

TABLE 29

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR MAJOR

S	SS	DF	MS
Total (Uncorrected)	608993.000	415	
Overall Mean	584231.424	1	584231.424
Total (Corrected)	24761.576	414	
Treatments	253.826	7	36.261
Residual	24507.750	407	60.216
N=414	$F_{7, 407}=.602$		

The mean value for women studying in physical education is 37.89, whereas women studying in all other areas of education are represented by a mean of 37.16. For women studying in the humanities the mean is 38.83, in physical or natural sciences 36.58, in social or behavioral sciences 36.58, in all non specified areas 36.71. The mean for women studying for a professional occupation is 36.22, and undeclared majors is 38.68. The F-value is not significant at the five percent level of confidence.

TABLE 30

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF MEN ATHLETES ACCORDING TO ACADEMIC CLASS

S	SS	DF	MS
Total (Uncorrected)	109481.000	71	
Overall Mean	103973.084	1	103973.084
Total (Corrected)	5507.916	70	
Treatments	112.533	3	37.511
Residual	5395.382	67	80.528
N=70	$F_{3,67}=0.466$		

The mean value for freshmen is 36.54, for sophomores is 39.86, for juniors is 38.57, and for seniors is 37.19. A table of F reveals that the 0.466 F-value is not significant at the five percent level of confidence.

TABLE 31

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO ACADEMIC CLASS

S	SS	DF	MS
Total (Uncorrected)	122339.000	71	
Overall Mean	117553.817	1	117553.817
Total (Corrected)	4785.183	70	
Treatments	197.118	3	65.706
Residual	4588.065	67	68.478
N=69	$F_{3,67}=0.960$		

The mean value for freshmen is 38.38, for sophomores is 42.95, for juniors is 39.71, and for seniors is 40.88. The obtained F-value of .0960 is not significant at the five percent level of confidence.

TABLE 32

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO ACADEMIC CLASS

S	SS	DF	MS
Total (Uncorrected)	666339.000	427	
Overall Mean	625512.058	1	625512.058
Total (Corrected)	40826.941	426	
Treatments	91.685	3	30.567
Residual	40735.256	423	96.301

N=426 $F_{3, 423}=0.317$

The mean value for freshmen is 38.82, for sophomores is 38.08, for juniors is 37.56, and for seniors is 38.13. The F of 0.317 is not significant at the five percent level of confidence.

TABLE 33

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO ACADEMIC CLASS

S	SS	DF	MS
Total (Uncorrected)	630866.000	427	
Overall Mean	605240.693	1	605240.693
Total (Corrected)	25625.307	426	
Treatments	254.565	3	84.855
Residual	25370.741	423	59.978
N=426	$F_{3, 423}=1.415$		

The mean value for freshmen is 38.27, for sophomores is 37.97, for juniors is 37.28, and for seniors is 36.10. A table of F reveals that the obtained F-value is not significant at the five percent level of confidence.

TABLE 34

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR GPA

S	SS	DF	MS
Total (Uncorrected)	107456.000	70	
Overall Mean	101994.057	1	101994.057
Total (Corrected)	5461.943	69	
Treatments	152.810	3	50.937
Residual	5309.133	66	80.441
N=69	$F_{3,66}=0.633$		

The mean value for men with a GPA of 3.0 or better is 37.44, for men with a GPA between 2.5 and 2.9 is 38.13, for men with a GPA between 2.0 and 2.4 is 39.22, and for men with a GPA less that or equal to 2.3 is 33.83. A table of F reveals that the obtained F-value is not significant at the five percent level of confidence.

TABLE 35

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR GPA

S	SS	DF	MS
Total (Uncorrected)	119839.000	70	
Overall Mean	115141.728	1	115141.728
Total (Corrected)	4697.271	69	
Treatments	383.596	3	127.865
Residual	4313.675	66	65.359
N=69	$F_{3,66}=1.956$		

The mean value for men with a GPA of 3.0 or better is 42.67, for men with a GPA between 2.5 and 2.9 is 40.04, for men with a GPA between 2.0 and 2.4 is 41.66, and for men with a GPA less than or equal to 2.3 is 33.50. The F-value of 1.956 is not significant at the five percent level of confidence.

TABLE 36

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR GPA

S	SS	DF	MS
Total (Uncorrected)	657546.000	421	
Overall Mean	618763.895	1	618763.895
Total (Corrected)	38782.104	420	
Treatments	26.236	3	8.745
Residual	38755.869	417	92.940
N=420	$F_{3,417}=.094$		

The mean value for women with a GPA is 3.5 or better is 38.71, for women with a GPA of 3.0-3.4 is 38.30, for women with a GPA of 2.5-2.9 is 38.07, and for women with a GPA is 2.4 or lower is 38.65. A table of F reveals that the F-value is not significant at the five percent level of confidence.

TABLE 37

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR GPA

S	SS	DF	MS
Total (Uncorrected)	619348.000	421	
Overall Mean	594320.960	1	594320.960
Total (Corrected)	25027.040	420	
Treatments	196.764	3	65.588
Residual	24830.276	417	59.545
N=420	$F_{3, 417}=1.101$		

The mean value for women with a GPA of 3.5 or better is 36.63, for women with a GPA of 3.0-3.4 is 36.90, for women with a GPA of 2.5-2.9 is 37.68, for women with a GPA of 2.4 or lower is 38.59. The obtained F of 1.101 is not significant at the five percent level of confidence.

TABLE 38

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR SCHOOL STATE

S	SS	DF	MS
Total (Uncorrected)	109736.000	71	
Overall Mean	104202.817	1	104202.817
Total (Corrected)	5533.183	70	
Treatments	104.341	2	52.171
Residual	5428.842	68	79.836
N=70	$F_{2,68}=.653$		

The mean value for men who attend school in Maryland is 38.44, for men who attend school in Virginia is 34.50, and for men who attend school in North Carolina is 39.29. The F of .653 is not significant at the five percent level of confidence.

TABLE 39

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO THEIR SCHOOL STATE

S	SS	DF	MS
Total (Uncorrected)	123487.000	71	
Overall Mean	118695.901	1	118695.901
Total (Corrected)	4791.099	70	
Treatments	83.814	2	41.907
Residual	4707.284	68	69.225
N=70	$F_{2,68}=.605$		

The mean value for men who attend school in Maryland is 41.42, for men who attend school in Virginia is 37.50, and for men who attend school in North Carolina is 40.59. A table of F reveals that the obtained F-value is not significant at the five percent level of confidence.

TABLE 40

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR SCHOOL STATE

S	SS	DF	MS
Total (Uncorrected)	671626.000	428	
Overall Mean	631326.738	1	631326.738
Total (Corrected)	40299.262	427	
Treatments	1250.693	9	138.966
Residual	39048.569	418	93.418
N=427	$F_{9, 418}=1.488$		

The mean value for women who attend school in North Carolina is 38.06; for women who attend school in Virginia is 40.32; for women who attend school in Maine is 36.87; for women who attend school in Maryland is 37.75; for women who attend school in New York is 34.50; for women who attend school in New Jersey is 39.47; for women who attend school in Massachusetts is 35.44; for women who attend school in New Hampshire is 40.25; for women who attend school in South Carolina is 35.50; and for women who attend school in Pennsylvania is 38.41. A table of F reveals that the calculated F-value is not significant at the five percent level of confidence.

TABLE 41

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO THEIR SCHOOL STATE

S	SS	DF	MS
Total (Uncorrected)	631473.000	428	
Overall Mean	605856.563	1	605856.563
Total (Corrected)	25616.437	427	
Treatments	647.935	9	71.9928
Residual	24968.501	418	59.733
N=427	$F_{9, 418}=1.205$		

The mean value for women who attend school in North Carolina is 36.42; for women who attend school in Virginia is 37.70; for women who attend school in Maine is 38.87; for women who attend school in Maryland is 38.11; for women who attend school in New York is 34.25; for women who attend school in New Jersey is 39.37; for women who attend school in Massachusetts is 35.28; for women who attend school in New Hampshire is 38.31; for women who attend school in South Carolina is 35.38; and for women who attend school in Pennsylvania is 38.11. A table of F reveals that the obtained F-value is not significant at the five percent level of confidence.

DIFFERENCES IN ANXIETY ACCORDING TO TO SPORT EXPERIENCE

Are there differences among the psychological anxiety levels of athletes that may be associated with experiences pertaining to sport?

TABLE 42

t-TEST OF STATE ANXIETY SCORES OF MEN TENNIS PLAYERS ACCORDING TO MALE COLLEGE UNDERGRADUATE NORMS*

	Men Tennis Players	Male Norms
Mean	38.04	36.46
Number	23	253
Standard Deviation	9.49	9.67
Standard Error	1.98	.61
	t=.8159	

*Spielberger

A table of t reveals that the t-value of .8159 is not significant at the five percent level of confidence.

TABLE 43

t-TEST OF TRAIT ANXIETY SCORES OF MEN TENNIS PLAYERS ACCORDING TO MALE COLLEGE UNDERGRADUATE NORMS

	Men Tennis Players	Male Norms
Mean	38.74	37.68
Number	23	253
Standard Deviation	8.69	9.69
Standard Error	1.81	.61
	t=.5540	

A table of t reveals that .5540 is not significant at the five percent level of confidence.

TABLE 44

t-TEST OF STATE ANXIETY SCORES OF MEN LACROSSE PLAYERS ACCORDING TO MALE COLLEGE UNDERGRADUATE NORMS

	Men Lacrosse Players	Male Norms
Mean	38.40	36.35
Number	23	253
Standard Deviation	8.71	9.67
Standard Error	1.26	.61
	t=0.468	

The obtained critical ratio is not significant at the five percent level of confidence.

TABLE 45

t-TEST OF TRAIT ANXIETY SCORES OF MEN LACROSSE PLAYERS ACCORDING TO MALE COLLEGE UNDERGRADUATE NORMS

	Men Lacrosse Players	Male Norms
Mean	41.48	37.68
Number	48	253
Standard Deviation	8.03	9.69
Standard Error	1.16	.61
	t=2.9023*	

*Significant at .01

A table of t reveals that 2.9023 exceeds the critical value at the one percent level of confidence (2.59). The obtained difference, then, is significant.

TABLE 46

t-TEST OF STATE ANXIETY SCORES OF MEN ATHLETES ACCORDING TO MALE COLLEGE UNDERGRADUATE NORMS

	Men Athletes	Male Norms
Mean	38.27	36.35
Number	71	253
Standard Deviation	8.69	9.67
Standard Error	1.03	.61
	t=1.6037	

A table of t reveals that 1.6037 is not significant at the five percent level of confidence.

TABLE 47

t-TEST OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO MALE COLLEGE UNDERGRADUATE NORMS

	Men Athletes	Male Norms
Mean	40.83	37.68
Number	71	253
Standard Deviation	8.12	9.69
Standard Error	.96	.61
	t=2.7630*	

*Significant at .01

A table of t reveals that the t-value of 2.7630 exceeds the critical value at the one percent level of confidence (2.59) and is therefore significant.

TABLE 48

t-TEST OF STATE ANXIETY SCORES OF WOMEN TENNIS PLAYERS ACCORDING TO FEMALE UNDERGRADUATE COLLEGE NORMS

	Women Tennis Players	Female Norms
Mean	37.33	35.12
Number	170	231
Standard Deviation	9.57	9.25
Standard Error	.74	.61
	t=2.3180*	

*Significant at .05

A table of t reveals that the obtained t of 2.3180 exceeds the critical value at the five percent level of confidence (1.96) but does not exceed critical value at the one percent level of confidence (2.59). The difference then is considered to be significant at the five percent level of confidence.

TABLE 49

t-TEST OF TRAIT ANXIETY SCORES OF WOMEN TENNIS PLAYERS ACCORDING TO FEMALE UNDERGRADUATE COLLEGE NORMS

	Women Tennis Players	Female Norms
Mean	37.05	38.25
Number	170	231
Standard Deviation	8.23	9.14
Standard Error	.63	.60
	t=1.3766	

The t-value is not significant at the five percent level of confidence.

TABLE 50

t-TEST OF STATE ANXIETY SCORES OF WOMEN LACROSSE PLAYERS ACCORDING TO FEMALE UNDERGRADUATE COLLEGE NORMS

	Women Lacrosse Players	Female Norms
Mean	38.93	35.12
Number	258	231
Standard Deviation	9.87	9.25
Standard Error	.61	.61
	t=4.4056*	

*Significant at .01

A table of t reveals that this t-value exceeds the critical value at the one percent level of confidence (2.58). The difference is, therefore, significant.

TABLE 51

t-TEST OF TRAIT ANXIETY SCORES OF WOMEN LACROSSE PLAYERS ACCORDING TO FEMALE UNDERGRADUATE COLLEGE NORMS

	Women Lacrosse Players	Female Norms
Mean	38.07	38.25
Number	258	231
Standard Deviation	7.38	9.14
Standard Error	.46	.60
	t=.2378	

The obtained t-value is not significant at the five percent level of confidence.

TABLE 52

t-TEST OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO FEMALE UNDERGRADUATE COLLEGE NORMS

	Women Athletes	Female Norms
Mean	38.43	35.12
Number	428	231
Standard Deviation	9.74	9.25
Standard Error	.47	.61
	t=4.3054*	

*Significant at .01

A table of t reveals that the t-value of 4.3054 exceeds the critical value at the one percent level of confidence (2.58).

TABLE 53

t-TEST OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO FEMALE UNDERGRADUATE COLLEGE NORMS

	Women Athletes	Female Norms
Mean	37.68	38.25
Number	428	231
Standard Deviation	8.51	9.14
Standard Error	.41	.60
	t=.7825	

The calculated t is not significant at the five percent level of confidence.

TABLE 54

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF MEN ATHLETES ACCORDING TO SPORT

S	SS	DF	MS
Total (Uncorrected)	109736.000	71	
Overall Mean	104202.817	1	104202.817
Total (Corrected)	5533.183	70	
Treatments	2.414	1	2.514
Residual	5530.769	69	80.156
N=71	$F_{1.69}=.030$		

The mean value for male tennis players is 38.04 and the mean value for male lacrosse players is 38.44. A table of F reveals that the obtained F-value is not significant at the five percent level of confidence.

TABLE 55

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO SPORT

S	SS	DF	MS
Total (Uncorrected)	122459.000	71	
Overall Mean	117553.817	1	117553.817
Total (Corrected)	4905.183	70	
Treatments	78.212	1	78.212
Residual	4826.971	69	69.956

N=71 $F_{1,69}=1.12$

The mean value for male tennis players is 39.17 and the mean value for male lacrosse players is 41.42. A table of F reveals that the obtained F-value is not significant at the five percent level of confidence.

TABLE 56

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO SPORT

S	SS	DF	MS
Total (Uncorrected)	666052.000	428	
Overall Mean	625808.308	1	625808.308
Total (Corrected)	40253.692	427	
Treatments	307.497	1	307.497
Residual	39946.195	426	93.770
N=428	$F_{1, 426}=3.28$		

The mean value for women tennis players is 37.19 and the mean value for women lacrosse players is 38.93. The obtained F-value is not significant at the five percent level of confidence (3.86).

TABLE 57

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO SPORT

S	SS	DF	MS
Total (Uncorrected)	633479.000	428	
Overall Mean	607362.451	1	607362.451
Total (Corrected)	26116.549	427	
Treatments	107.576	1	107.576
Residual	26008.973	426	61.054
N=428	$F_{1, 426}=1.76$		

The mean value for women tennis players is 37.05 and the mean value for women lacrosse players is 38.08. The F of 1.76 is not significant at the five percent level of confidence.

TABLE 102

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF MEN AND WOMEN ATHLETES ACCORDING TO SPORT

S	SS	DF	MS
Total (Uncorrected)	776970.000	499	
Overall Mean	731694.717	1	731694.717
Total (Corrected)	45275.283	498	
Treatments	266.113	1	266.113
Residual	45009.169	497	90.562
N=499	$F_{1, 497}=2.94$		

The mean value for men and women tennis players is 37.37 and the mean value for men and women lacrosse players is 38.87. The obtained F-value is not significant at the five percent level of confidence.

TABLE 59

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN AND WOMEN ATHLETES ACCORDING TO SPORT

S	SS	DF	MS
Total (Uncorrected)	751839.000	499	
Overall Mean	720632.002	1	720632.002
Total (Corrected)	31206.998	498	
Treatments	211.963	1	211.963
Residual	30995.035	497	62.364
N=499	$F_{1, 497}=3.40$		

The mean value for men and women tennis players is 37.18 and the mean for men and women lacrosse players is 38.52. The obtained F-value is not significant at the five percent level of confidence (3.86).

TABLE 60

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF MEN ATHLETES ACCORDING TO YEARS OF INTERSCHOLASTIC EXPERIENCE

S	SS	DF	MS
Total (Uncorrected)	109840.000	70	
Overall Mean	103834.514	1	103834.514
Total (Corrected)	6005.486	69	
Treatments	28.014	5	5.603
Residual	5977.472	64	93.398
N=69	$F_{5,64}=0.060$		

The mean value for men with two or less years of experience is 37.38, for men with three to four years of experience is 38.60, for men with five to six years of experience is 39.18, for men with seven to eight years of experience is 38.35, for men with nine to ten years of experience is 39.31, and for individuals with eleven or more years of experience is 37.91. A table of F reveals that the obtained F of .060 is not significant at the five percent level of confidence.

TABLE 61

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO YEARS OF INTERSCHOLASTIC EXPERIENCE

S	SS	DF	MS
Total (Uncorrected)	121183.000	70	
Overall Mean	116443.214	1	116443.214
Total (Corrected)	4739.786	69	
Treatments	526.780	5	105.356
Residual	4213.005	64	65.828
N=69	$F_{5,64}=1.600$		

The mean value for men with two or less years of experience is 36.62, for men with three to four years of experience is 41.80, for men with five to six years of experience is 39.64, for men with seven to eight years of experience is 42.42, for men with nine to ten years of experience is 44.45, and for men with eleven or more years of experience is 37.18. A table of F reveals that the F-value of 1.600 is not significant at the five percent level of confidence.

TABLE 62

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO YEARS OF INTERSCHOLASTIC EXPERIENCE

S	SS	DF	MS
Total (Uncorrected)	659810.000	424	
Overall Mean	621103.736	1	621103.736
Total (Corrected)	38706.264	423	
Treatments	329.206	4	82.301
Residual	38377.058	419	91.592
N=423	$F_{4, 419}=0.898$		

The mean value for women with one or less years of experience is 37.94, for women with two to three years of experience is 39.82, for women with four to five years of experience is 37.03, for women with six to seven years of experience is 37.30, and for women with eight or more years of experience is 38.66. Differences among these means are not significant at the five percent level of confidence.

TABLE 63

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO YEARS OF INTERSCHOLASTIC EXPERIENCE

S	SS	DF	MS
Total (Uncorrected)	631993.000	424	
Overall Mean	604906.191	1	604906.191
Total (Corrected)	27086.809	423	
Treatments	124.585	4	31.146
Residual	26962.224	419	64.349
N=423	$F_{4, 419}=0.484$		

The mean value for women with one or less years of experience is 36.86, for women with two to three years of experience is 37.40, for women with four to five years of experience is 38.36, for women with six to seven years of experience is 38.56, and for women with eight or more years of experience is 37.75. Differences among these means are not significant at the five percent level of confidence.

TABLE 64

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF MEN ATHLETES ACCORDING TO YEARS OF INTERCOLLEGIATE EXPERIENCE

S	SS	DF	MS
Total (Uncorrected)	109295.000	70	
Overall Mean	104065.729	1	104065.729
Total (Corrected)	5229.271	69	
Treatments	249.292	3	83.097
Residual	4979.979	66	75.454
N=69	$F_{3,66}=1.101$		

The mean value for men with one year of experience is 35.59, for men with two years of experience is 41.14, for men with three years of experience is 38.80, and for men with four or more years of experience is 39.05. The F-value of 1.101 is not significant at the five percent level of confidence.

TABLE 65

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO YEARS OF INTERCOLLEGIATE EXPERIENCE

S	SS	DF	MS
Total (Uncorrected)	121183.000	70	
Overall Mean	116443.214	1	116443.214
Total (Corrected)	4739.786	69	
Treatments	317.702	3	105.901
Residual	4422.084	66	67.001
N=69	$F_{3,66}=1.580$		

The mean value for men with one year of experience is 38.00, for men with two years of experience is 41.57, for men with three years of experience is 39.85, and for men with four or more years of experience is 43.68. A table of F reveals that the obtained F-value is not significant at the five percent level of confidence.

TABLE 66

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO YEARS OF INTERCOLLEGIATE EXPERIENCE

S	SS	DF	MS
Total (Uncorrected)	659133.000	421	
Overall Mean	618993.941	1	618993.941
Total (Corrected)	40139.059	420	
Treatments	431.548	6	71.925
Residual	39707.512	414	95.912
N=421		$F_{6, 414}=0.750$	

The mean value for women with one year of experience is 38.64, for women with two years of experience is 37.84, for women with three years of experience is 36.92, for women with four years of experience is 38.52, for women with five years of experience is 40.35, for women with six years of experience is 40.54, and for women with seven or more years of experience is 37.74. According to the obtained F of .750, the mean differences are not significant.

TABLE 67

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO YEARS OF INTERCOLLEGIATE EXPERIENCE

S	SS	DF	MS
Total (Uncorrected)	622015.000	421	
Overall Mean	596502.159	1	596502.159
Total (Corrected)	25512.841	420	
Treatments	224.993	6	37.499
Residual	25287.848	414	61.082
N=420		$F_{6, 414}$=0.614	

The mean value for women with one year of experience is 37.90, for women with two years of experience is 38.22, for women with three years of experience is 36.98, for women with four years of experience is 37.23, for women with five years of experience is 39.00, for women with six years of experience is 37.31, and for women with seven or more years of experience is 36.13. These mean differences are not significant at the five percent level of confidence.

TABLE 68

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF MEN ATHLETES ACCORDING TO NUMBER OF YEARS OF TOTAL INVOLVEMENT

S	SS	DF	MS
Total (Uncorrected)	108752.000	70	
Overall Mean	103372.857	1	103372.857
Total (Corrected)	5379.143	69	
Treatments	612.762	4	153.190
Residual	4766.381	65	73.329
N=69		$F_{4,65}=2.089$	

The mean value for men with three or less years of experience is 37.17, for men with four years of experience is 40.07, for men with five years of experience is 36.21, for men with six years of experience is 43.43, and for men with seven or more years of experience is 35.50. A table of F reveals that the obtained 2.089 is not significant at the five percent level of confidence.

TABLE 69

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF MEN ATHLETES ACCORDING TO NUMBER OF YEARS OF TOTAL INVOLVEMENT

S	SS	DF	MS
Total (Uncorrected)	121527.000	70	
Overall Mean	116606.414	1	116606.414
Total (Corrected)	4920.586	69	
Treatments	373.982	4	93.495
Residual	4546.604	65	59.948
N=69		$F_{4,65}=1.337$	

The mean value for men with three or less years of experience is 37.33, for men with four years of experience is 41.86, for men with five years of experience is 40.71, for men with six years of experience is 39.44, and for men with seven or more years of experience is 44.43. These mean differences are not statistically significant.

TABLE 70

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO NUMBER OF YEARS OF TOTAL INVOLVEMENT

S	SS	DF	MS
Total (Uncorrected)	660223.000	420	
Overall Mean	620621.488	1	620621.488
Total (Corrected)	39601.512	419	
Treatments	289.763	5	57.953
Residual	39311.748	414	94.956
N=419		$F_{5, 414}=0.610$	

The mean value for women with one or less years of experience is 38.55, for women with two years of experience is 39.69, for women with three years of experience is 37.44, for women with four years of experience is 38.42, for women with five years of experience is 37.18, and for women with six or more years of experience is 39.02. A table of F reveals that the F-value obtained in the ANOVA calculation is not significant at the five percent level of confidence.

TABLE 71

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN ATHLETES ACCORDING TO NUMBER OF YEARS OF TOTAL INVOLVEMENT

S	SS	DF	MS
Total (Uncorrected)	625106.000	420	
Overall Mean	599659.286	1	599659.286
Total (Corrected)	25446.714	419	
Treatments	289.873	5	57.975
Residual	25156.841	414	60.765
N=419	$F_{4, 414}=0.954$		

The mean value for women with one or less years of experience is 38.76, for women with two years of experience is 38.17, for women with three years of experience is 37.42, for women with four years of experience is 36.88, for women with five years of experience is 36.36, and for women with six or more years of experience is 38.04. These mean differences are not significant at the five percent level of confidence.

TABLE 72

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN TENNIS PLAYERS ACCORDING TO THEIR SCHOOL SIZE

S	SS	DF	MS
Total (Uncorrected)	252418.000	167	
Overall Mean	236760.144	1	236760.144
Total (Corrected)	15657.856	166	
Treatments	306.065	4	76.516
Residual	15351.791	162	94.764
N=166		$F_{4, 162}$=0.807	

The mean value for women from a school of one thousand or less is 39.31, for women from a school of 1001 to 3000 is 36.83, for women from a school of 3001 to 5000 is 38.35, for women from a school of 5001 to 7000 is 40.00, and for women from a school of 7001 or more is 36.18. The obtained F is not significant at the five percent level of confidence.

TABLE 73

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN TENNIS PLAYERS ACCORDING TO THEIR SCHOOL SIZE

S	SS	DF	MS
Total (Uncorrected)	240158.000	167	
Overall Mean	228993.150	1	228993.150
Total (Corrected)	11164.850	166	
Treatments	78.282	4	19.571
Residual	11086.568	162	68.436
N=166		$F_{4, 162}$=0.286	

The mean value for women from a school of one thousand or less is 36.91, for women from a school of 1001 to 3000 is 36.31, for women from a school of 3001 to 5000 is 37.94, for women from a school of 5001 to 7000 is 38.64, and for women from a school of 7001 or more is 36.78. A table of F reveals that the F-value of 0.216 is not significant at the five percent level of confidence.

TABLE 74

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN LACROSSE PLAYERS ACCORDING TO THEIR SCHOOL SIZE

S	SS	DF	MS
Total (Uncorrected)	378695.000	235	
Overall Mean	356343.834	1	356343.834
Total (Corrected)	22351.166	234	
Treatments	844.260	4	211.065
Residual	21506.906	230	93.508
N=234		$F_{4, 230}=2.257$	

The mean value for women from a school of one thousand or less is 43.11, for women from a school of 1001 to 3000 is 38.20, for women from a school of 3001 to 5000 is 38.26, for women from a school of 5001 to 7000 is 39.47, and for women from a school of 7001 or more is 37.49. Although the obtained F-value is close to a significant F-value (2.41 according to the table), it is not significant at the five percent level of confidence.

TABLE 75

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN LACROSSE PLAYERS ACCORDING TO THEIR SCHOOL SIZE

S	SS	DF	MS
Total (Uncorrected)	351011.000	235	
Overall Mean	338504.515	1	338504.515
Total (Corrected)	12506.485	234	
Treatments	226.967	4	56.742
Residual	12279.518	230	53.389
N=234		$F_{4, 230}=1.063$	

The mean value for women from a school of one thousand or less is 37.94, for women from a school of 1001 to 3000 is 39.11, for women from a school of 3001 to 5000 is 36.60, for women from a school of 5001 to 7000 is 38.90, and for women from a school of 7001 or more is 37.10. ANOVA reveals that these differences are not significant at the five percent level of confidence.

TABLE 76

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN TENNIS PLAYERS ACCORDING TO THEIR SEASON'S RECORD

S	SS	DF	MS
Total (Uncorrected)	252225.000	167	
Overall Mean	236534.281	1	236534.281
Total (Corrected)	15690.719	166	
Treatments	303.935	2	151.968
Residual	15386.784	164	93.822
N=166		$F_{2, 164}=1.620$	

The mean value for women playing on a team with a winning season is 37.41, for women playing on a team with a losing season is 39.49, and for women playing on a team with an even season is 34.59. The 1.620 F-value is not significant at the five percent level of confidence.

TABLE 77

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN TENNIS PLAYERS ACCORDING TO THEIR SEASON'S RECORD

S	SS	DF	MS
Total (Uncorrected)	242074.000	167	
Overall Mean	230625.365	1	230625.365
Total (Corrected)	11448.635	166	
Treatments	494.373	2	247.186
Residual	10954.262	164	66.794
N=166		$F_{2, 164}$=3.701*	

*Significant at .05

The mean value for women playing on a team with a winning season is 36.77, for women playing on a team with a losing season is 39.68, and for women playing on a team with an even season is 33.59. A table of F reveals that the obtained F-value exceeds the critical value (3.06). This F-value is therefore significant at the five percent level of confidence.

Since there were three treatment groups, a Newman-Keuls analysis was undertaken to determine which of the means were significantly different.

TABLE 78

NEWMAN-KEULS ANALYSIS OF TRAIT ANXIETY SCORES OF WOMEN TENNIS PLAYERS ACCORDING TO THEIR SEASON'S RECORD

Treatments		1	2	3
	Means	33.59	36.77	39.68
1	33.59		3.18	6.09*
2	36.77			2.91
3	39.68			

Six and nine one hundreds is the only value which is significant. Therefore the only significant difference was between women tennis players on a losing team and women tennis players on an even team.

TABLE 79

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN LACROSSE PLAYERS ACCORDING TO THEIR SEASON'S RECORD

S	SS	DF	MS
Total (Uncorrected)	416280.000	258	
Overall Mean	391638.388	1	391638.388
Total (Corrected)	24641.612	257	
Treatments	415.324	1	415.324
Residual	24226.248	256	94.632
N=257		$F_{1, 256}=4.39$*	

*Significant at .05

The mean value for women playing on a team with a winning season is 37.39, and for women playing on a team with a losing season is 39.99. A table of F reveals that the obtained value of F exceeds the critical value (3.89) and is therefore significant at the five percent level of confidence.

TABLE 80

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN LACROSSE PLAYERS ACCORDING TO THEIR SEASON'S RECORD

S	SS	DF	MS
Total (Uncorrected)	387909.000	258	
Overall Mean	373692.872	1	373692.872
Total (Corrected)	14216.128	257	
Treatments	171.783	1	171.783
Residual	14044.345	256	54.861
N=257		$F_{1, 256}=3.131$	

The mean value for women playing on a team with a winning season is 37.05, and for women playing on a team with a losing season is 38.72. The obtained F of 3.131 is not significant at the five percent level of confidence.

TABLE 81

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN TENNIS PLAYERS ACCORDING TO THE RELATIONSHIP BETWEEN THIS SEASON AND LAST SEASON

S	SS	DF	MS
Total (Uncorrected)	230645.000	153	
Overall Mean	216922.359	1	216922.359
Total (Corrected)	13722.640	152	
Treatments	3.040	2	1.520
Residual	13719.601	150	91.464
N=152	$F_{2, 150}=0.017$		

The mean value for women playing on a team which did better this season than last is 37.74, for women playing on a team that did worse this season than last is 37.75, and for women playing on a team that did the same this season as last is 37.43. ANOVA reveals no significant difference among these means.

TABLE 82

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN TENNIS PLAYERS ACCORDING TO THE RELATIONSHIP BETWEEN THIS SEASON AND LAST SEASON

S	SS	DF	MS
Total (Uncorrected)	217657.000	153	
Overall Mean	207537.418	1	207537.418
Total (Corrected)	10119.582	152	
Treatments	24.071	2	12.035
Residual	10095.511	150	67.303
N=152		$F_{2, 150}=0.179$	

The mean value for women playing on a team which did better this season than last is 36.51, for women playing on a team that did worse this season than last is 36.78, and for women playing on a team that did the same this season as last is 37.43. A table of F reveals that the F-value of 0.179 is not significant at the five percent level of confidence.

TABLE 83

ANALYSIS OF VARIANCE OF STATE ANXIETY SCORES OF WOMEN LACROSSE PLAYERS ACCORDING TO THE RELATIONSHIP BETWEEN THIS SEASON AND LAST SEASON

S	SS	DF	MS
Total (Uncorrected)	374636.000	230	
Overall Mean	353113.670	1	353113.670
Total (Corrected)	21522.330	229	
Treatments	168.511	1	168.511
Residual	21353.819	228	93.657
N=229		$F_{1, 228}=1.799$	

The mean value for women playing on a team that did better this season than last season is 37.83, and for women playing on a team that did worse this season than last season is 39.72. These mean differences are not significant at the five percent level of confidence.

TABLE 84

ANALYSIS OF VARIANCE OF TRAIT ANXIETY SCORES OF WOMEN LACROSSE PLAYERS ACCORDING TO THE RELATIONSHIP BETWEEN THIS SEASON AND LAST SEASON

S	SS	DF	MS
Total (Uncorrected)	343565.000	230	
Overall Mean	330980.978	1	330980.978
Total (Corrected)	12584.033	229	
Treatments	0.953	1	0.953
Residual	12583.069	228	55.189
N=229		$F_{1, 228}$=0.017	

The mean value for women playing on a team that did better this season than last season is 37.83, and for women playing on a team that did worse this season than last season is 37.98. A table of F reveals that the obtained F-value is not significant at the five percent level of confidence.

REASONS FOR PARTICIPATING AND SPORT PREFERENCE OF ATHLETES

In order to examine the reasons for participating in sport and sport preferences, tables of frequencies were constructed using data collected from the response questionnaire.

TABLE 85

REASONS FOR PARTICIPATING--
MEN LACROSSE PLAYERS

Reason	Frequency	Percent of Responses
Excitement	31	16.8
Social Interaction	17	9.3
Skill Improvement	17	9.3
Health Effects	20	10.8
Fun	40	21.7
Competitive Experience	39	21.2
Other:	10	5.4
Like it	1	0.5
Accomplishment	1	0.5
Ego fortification	1	0.5
Like to play for a winning coach	1	0.5
Favorite sport	1	0.5
Enjoy pain	1	0.5
Want NCAA champ T-shirt	1	0.5
Team companionship	1	0.5
Like winning	1	0.5
Meet athletic people	1	0.5

N=48

TABLE 86

REASONS FOR PARTICIPATING--
MEN TENNIS PLAYERS

Reason	Frequency	Percent of Responses
Excitement	6	9.2
Social Interaction	5	7.6
Skill Improvement	12	18.3
Health Effects	5	7.6
Fun	19	28.9
Competitive Experience	19	28.9
Other	0	0.0

N=23

TABLE 87

REASONS FOR PARTICIPATING--
WOMEN LACROSSE PLAYERS

Reason	Frequency	Percent of Responses
Excitement	130	12.1
Social Interaction	142	13.2
Skill Improvement	166	15.4
Health Effects	134	12.5
Fun	210	19.5
Competitive Experience	156	14.5
Other:	69	6.4
Learn new sport	7	.7
Educational experience	2	.2
Like Lacrosse	15	1.4
Diversion from study	3	.3
Required for lacrosse class	8	.7
Experience for P.E. major	6	.6
To get some sun	1	.1
Cooperation with others	2	.2
Release of tension	2	.2
Good sportsmanship	2	.2
Drafted	3	.3
Self realization	1	.1
Meet other people	2	.2
Like sports	2	.2
Enjoyment	2	.2
Enjoy being coached	1	.1
Something to look forward to	2	.2

TABLE 87 (Continued)

Reason	Frequency	Percent of Responses
Helps school work	2	.2
Builds self confidence	1	.1
Use time wisely	1	.1
Help others learn	1	.1
Like to run	1	.1
Exercise	1	.1
Learn more about lacrosse	1	.1

N=258

TABLE 88

REASONS FOR PARTICIPATING--
WOMEN TENNIS PLAYERS

Reason	Frequency	Percent of Responses
Excitement	69	10.6
Social Interaction	76	11.7
Skill Improvement	139	21.4
Health Effects	78	12.0
Fun	135	20.8
Competitive Experience	116	17.9
Other:	18	2.8
Like sports	2	.4
Good experience for P.E. major	1	.2
Satisfaction	1	.2
Gym credit	4	.6
Interest	1	.2
Like to compete at high skill level	1	.2
Self discipline	1	.2
Enjoy tennis	1	.2
To get in shape	1	.2
Sure way to get on courts	2	.4
Always have	1	.2
Psychological effects	1	.2
Keep competitive urge happy	1	.2

N=170

TABLE 88

REASONS FOR PARTICIPATING--
WOMEN TENNIS PLAYERS

Reason	Frequency	Percent of Responses
Excitement	69	10.6
Social Interaction	76	11.7
Skill Improvement	139	21.4
Health Effects	78	12.0
Fun	135	20.8
Competitive Experience	116	17.9
Other:	18	2.8
Like sports	2	.4
Good experience for P.E. major	1	.2
Satisfaction	1	.2
Gym credit	4	.6
Interest	1	.2
Like to compete at high skill level	1	.2
Self discipline	1	.2
Enjoy tennis	1	.2
To get in shape	1	.2
Sure way to get on courts	2	.4
Always have	1	.2
Psychological effects	1	.2
Keep competitive urge happy	1	.2

N=170

TABLE 89

SPORTS PREFERENCE--
MEN LACROSSE PLAYERS

Sport	Frequency	Percent of Responses
Baseball	1	.70
Basketball	22	15.5
Cycling	1	.70
Diving	1	.70
Football	33	23.2
Golf	3	2.1
Ice Hockey	3	2.1
Lacrosse	50	35.2
Moto Cross	1	.70
Paddleball	1	.70
Riding	1	.70
Snow Skiing	3	2.1
Soccer	3	2.1
Softball	1	.70
Squash	2	1.41
Surfing	3	2.1

TABLE 89 (Continued)

Sport	Frequency	Percent of Responses
Swimming	5	3.52
Tennis	4	2.81
Water Skiing	2	1.41
Wrestling	2	1.41
N=48		

TABLE 90

SPORTS PREFERENCE--
MEN TENNIS PLAYERS

Sport	Frequency	Percent of Responses
Badminton	1	1.52
Baseball	3	4.55
Basketball	19	28.8
Cycling	2	3.03
Diving	1	1.52
Football	5	7.58
Frisbee	1	1.52
Golf	4	6.06
Ping Pong	1	1.52
Putt Putt	2	3.03
Snow Skiing	1	1.52
Softball	1	1.52
Swimming	3	4.55
Tennis	22	33.3
N=23		

TABLE 91

SPORTS PREFERENCE--
WOMEN LACROSSE PLAYERS

Sport	Frequency	Percent of Responses
Archery	5	.66
Back Packing	1	.13
Badminton	11	1.46
Baseball	3	.40
Basketball	89	11.8
Bowling	4	.53
Canoeing	1	.13
Cheerleading	1	.13
Cycling	2	.27
Dance	3	.40
Fencing	1	.13
Field Hockey	119	15.8
Football	6	.79
Golf	7	.92
Gymnastics	8	1.06
Hiking	1	.13
Ice Hockey	1	.13
Ice Skating	2	.27

TABLE 91 (Continued)

Sport	Frequency	Percent of Responses
Lacrosse	198	26.32
Ping Pong	2	.27
Riding	14	1.85
Riflery	1	.13
Rowing	1	.13
Sailing	4	.53
Snow Skiing	32	4.13
Soccer	4	.53
Softball	57	7.58
Squash	3	.40
Surfing	1	.13
Swimming	48	6.41
Tennis	80	10.34
Track	6	.79
Volleyball	36	4.65
Water Polo	1	.13
Water Skiing	9	1.20
N=258		

TABLE 92

SPORTS PREFERENCE--
WOMEN TENNIS PLAYERS

Sport	Frequency	Percent of Responses
Badminton	7	1.40
Baseball	3	.60
Basketball	50	10.12
Body Surfing	1	.20
Bowling	3	.60
Canoeing	2	.40
Cross Country Skiing	1	.20
Cycling	4	.80
Dance	1	.20
Diving	3	.60
Fencing	4	.80
Field Hockey	34	6.80
Fishing	2	.40
Folk Dance	1	.20
Football	4	.80
Golf	11	2.20
Gymnastics	5	1.00
Ice Skating	3	.60

TABLE 92 (Continued)

Sport	Frequency	Percent of Responses
Karate	1	.20
Lacrosse	5	1.00
Mountain Climbing	1	.20
Paddleball	1	.20
Ping Pong	8	1.60
Riding	16	3.21
Running	3	.60
Sailing	11	2.20
Snow Skiing	32	6.40
Soccer	2	.40
Softball	19	3.80
Squash	4	.80
Swimming	52	10.52
Tennis	163	32.60
Track	1	.20
Volleyball	26	5.20
Water Skiing	10	2.00

N=170

CHAPTER V

DISCUSSION, SUMMARY AND CONCLUSIONS

In light of the data obtained in this investigation a discussion of psychological anxiety, as measured by the STAI, is offered. The major focus is upon items in which significant differences were found to exist; other specualtions are also made. The chapter summarizes the research and states conclusions.

DISCUSSION

Personal Factors

Sex. Differences in trait anxiety between men and women have not been consistently reported in the literature. The data obtained in this study reveal trait anxiety scores of men lacrosse players to be significantly higher than of women lacrosse players. As a combined group of athletes, tennis and lacrosse players, differences between the sexes in trait anxiety are also significant. These results are in agreement with Neumann (72) who used Cattell's IPAT. Failure of sex differences to show up in tennis players suggests it is not appropriate to generalize about trait anxiety in athletes unless more sports are examined. However, other explanations warrant further consideration. The number of men tennis players involved in this study is comparatively small and may have obscured real differences. Secondly, it might be possible that the

sameness of the game of competitive tennis, as played by men and women, as contrasted to lacrosse, is a factor to be reckoned.

Age. Differences in age were not found to be associated with state or trait anxiety levels. A very slight significance was found in the trait anxiety scores of men athletes, but it was not large enough to show up in the Newman-Keuls analysis.

Griffin (42a), in a recent study involving younger athletes, found significant differences in state and trait anxiety scores. Twelve and thirteen year old subjects in her sample were the most state anxious. The least state anxious were those who were nineteen years old or older. Griffin also found that the most trait anxious subjects were sixteen and seventeen year olds. Again, the nineteen and older group had the lowest trait anxiety scores. In Griffin's study the STAI was also used; therefore, there is no difference in method of measuring anxiety that accounts for insignificance found in the present study. Perhaps discrepancy in findings can be attributed to the fact that Griffin used athletes ranging from twelve to nineteen and the present study used athletes ranging from seventeen to twenty-two. It is speculated that there may be developmental factors in youth between twelve and nineteen that is stabilized by age nineteen. Such a possibility warrants investigation.

Family and Home Related Factors

Geographic location of home. No significant differences were found to

be associated with the geographic location of the athlete's home. These were analyzed according to home state. All of the states involved in the study were on the east coast. Possibly, there is a sameness among physical backgrounds. It seems likely that if significant differences are, in reality, to be associated with location of the home, athletes representing more distinct and/or divergent sections of the country will have to be studied.

Family size. Differences in family size were not found to be associated with state or trait anxiety levels. It was anticipated that perhaps children from larger families would have higher anxiety levels due to the fact that they had to perform well to be recognized by the family. However, this notion was not supported by the results of this study.

Sibling order. State anxiety was not shown to be associated with sibling order. There were, however, significant differences found in the trait anxiety scores of women athletes. Women who were first or second born showed higher trait anxiety levels than those who were born fourth or later. These were the anticipated results. Children born late into a family generally have an easier time with fewer hardships than those born earlier. One may infer that these youngsters might not have had the responsibility and the anxiety that purportedly accompanies the responsibility experienced by their older brothers and sisters.

Educational Related Factors

Major. No significant differences in state anxiety scores were found

between men who were studying for various different occupations. There were, however, significant differences found in the trait anxiety scores. The results of this study reveal that men who are studying physical or natural science have significantly higher anxiety levels than men studying for a professional occupation or men studying physical education. If one considers major field of study as a career preparatory experience, differences in personality that have been found to exist in individuals representing varied occupations may bear upon the results of this investigation. Given, however, that other educationally related factors, e.g., class, grade point average, and certain aspects of school background did not turn up anxiety differences among respondents, no specific inference can be offered. Difficulty or degree of challenge traditionally associated with curriculum poses a potential explanation but is too tenuous to develop as a line of reasoning.

No differences were found in state or trait anxiety scores for the women that were involved in this study. The fact that different results were obtained in regard to the variable of men subjects as compared to women subjects is of interest. Considering the current social scene and the "changing role of women" as a popular educational, research and career focus, one may speculate that college women, regardless of vocational aspirations and/or background interests are not as "up-tight" as their male counterparts.

Academic class. Class in school was also studied. No relationship was found between anxiety and class for any of the groups evaluated. This is not surprising since this variable is related to age as well as previous experience and no significant differences were found between these variables and anxiety.

Grade point average. Because the concept of grading involves competition--with oneself, parents, teacher's judgments, etc., it was conceived that an analysis according to grade point average of athletes, men and women who seek competitive experiences of a physical nature, might be revealing. The results of the study, however, showed no significant differences. Previous work that has been done to investigate the relationship between GPA and anxiety has been conflicting. Spielberger (98) (100) indicated that there is no relationship between anxiety and GPA. This study of athletes is consistent with Spielberger's contention.

School state. In some sections of the country one sport or another is regarded as a "favorite" for the area. It was anticipated, then, that institutions located in states where lacrosse or tennis enjoy such popularity and emphasis might produce athletes with higher levels of anxiety. However, the geographic location of the athlete's school was not shown to be related to the state or trait anxiety scores.

Sport Experience Related Factors

Athletes compared to undergraduate college norms. One of the questions which this research sought to answer was whether or not there were differences in psychological anxiety levels between athletes and other undergraduates as revealed by college norms. Men lacrosse players and all men athletes showed trait anxiety scores significantly higher than male undergraduate college norms. There was no difference between men tennis players and male

undergraduate college norms. One possible explanation for these findings is that the lacrosse players involved in this study were from large institutions. On the other hand, the tennis players used in the study came from very small schools. When the groups were combined, the results of the lacrosse players were repeated due to the fact that there was twice as many of them, therefore obscuring the results of the tennis players. Whether or not large state universities attract athletes of similar caliber is a question posed by these findings. Also differences in athletic programs, i.e., criteria for "making the team," level of competition, etc. may have a bearing on this finding.

For the women the results were opposite to that of the men. Women athletes, tennis and lacrosse players, clearly have significantly higher state anxiety scores than Spielberger's published norms. It is conceivable that a desire to engage in an experience in which anxiety is induced but with a clear beginning and ending, has an appeal to females. No differences, however, were found between women athletes and female undergraduate college norms in their trait anxiety scores.

Sport. Another consideration of the research was the psychological anxiety levels comparing sport involvement: tennis and lacrosse. No significant differences were found between any of the groups of athletes. This is not necessarily consistent with the literature. For example, Malumphy (58) found that athletes in individual sports were less anxious than those in team sports, but Johnson (46) found that athletes in individual sports showed high levels of anxiety prior to competition. These explanations are offered for the differences in

Malumphy's, Johnson's and the present study: (1) time at which the test was administered may be a factor, (2) the use of different instruments and (3) confounded meanings of research when "team" and "individual" sports are used as distinct categories. There are broad variations to be reckoned among sports that logically can be classified as "team." The same is true if one considers the enormous differences among such so-called individual activities such as golf, badminton, bowling, or swimming.

Interscholastic experience. It is commonly believed that people have a tendency to fear what is not known to them. For this reason it was anticipated that athletes with more experience in interscholastic competition would possibly have reduced levels of anxiety. The results of this study provided no evidence to support this assumption. One reason for this could be that there is not enough similarity between interscholastic and intercollegiate athletics. There again, it is highly possible that experience is not at all represented in the phenomenon of anxiety.

Intercollegiate experience and total years of involvement. This study failed to identify differences between athletes with various degrees of intercollegiate experience and various degrees of combined interscholastic and intercollegiate experience in their concerned sport. This would seem to indicate that experience is not represented in the phenomenon of anxiety.

School size. The author anticipated that school size might be associated

with psychological anxiety levels, especially state anxiety, in addition to the influence of school size or athletic programs per se, discussed above. One may speculate that tense or anxiously inclined students might seek smaller campuses. Another line of thought is that larger schools might create a pressure that would not be found in smaller schools where athletic scholarships were not given. The results of this study, however, indicate that there was no significant differences among women athletes who play for various size schools. The men's sample was too small to permit analysis of this factor.

Season's record. No significant difference was found between the state anxiety scores of women tennis players that may have been associated with the season's record. It was anticipated that there might be such a difference. Since it has been fairly well established that a certain degree of state anxiousness is desirable for competition, it was anticipated that possibly women playing on a winning team would have higher state anxiety levels. On the other hand, too much anxiety is detrimental to competition and so in that respect it might have been expected that women on a winning team would have lower levels of anxiety. Neither of these assumptions was supported by the results of this study.

Significant differences, however, were found between women tennis players who played on a losing team and women tennis players who played on a team with an even season. Women tennis players on losing teams had significantly lower trait anxiety scores than women on teams with an even season. These results support the notion that a certain degree of anxiousness is desirable in order to have success in competitive sports.

For women lacrosse players the results were exactly opposite. Women lacrosse players on a losing team had significantly higher state anxiety scores than women who played on winning lacrosse teams. One possible explanation for this is that the women on the losing teams had anxiety levels that were above the desirable level. Another explanation is that the fact that continued losing when wanting to win caused their state anxiety levels to increase. Trait anxiety scores according to the season's record were not a significant factor.

Reasons for Participating

Men lacrosse players. There was not one particular reason for participating that stood out in the survey of men lacrosse players. Twenty-one and two tenths percent of the players said that they played for fun and competitive experience. Sixteen and eight tenths percent listed excitement as their reason for participating.

Men tennis players. For men tennis players twenty eight and nine tenths percents of the men also chose fun and competitive experience. The next most important reason to them was skill which got 18.3 percent of the responses. It is interesting to note that very few of the men in either group was interested in the health effects of playing or the social interaction that is involved.

Women lacrosse players. The women lacrosse players were not particularly in favor of one reason over another. Fun received 19.5 percent of the responses and skill was second with 15.4 percent. Contrasted to the men, social

interaction received 13.2 percent of the responses and health effects received 12.5 percent. However, these two were only slightly higher than excitement which received 12.1 percent of the responses and was the least selected of the six choices.

Women tennis players. Women tennis players were the only group that put skill as their first choice with twenty-one and four tenths percent. One possible reason for this is that tennis is one of the few sports which can make women famous if their skill is great enough. There are also now monetary rewards for skilled women tennis players. Women who play lacrosse know that even if their skill is unsurpassable, there is really nothing they can do with it except have a good time. Twenty and eight tenths percent of the women tennis players chose fun as their reason for participating and seventeen and nine tenths chose competitive experience. Health effects was next, followed by social interaction and excitement.

Sport Preference

Men lacrosse players. Men lacrosse players stayed with team sports in their sport preference. Lacrosse was first with 35.2 percent, football was next with 23.2 percent and basketball was third with 15.5 percent.

Men tennis players. Men tennis players, on the other hand, showed preference for individual sports with the exception of basketball which was selected by 28.8 percent of the responses. This is not surprising since

basketball is a game most boys start playing as soon as they can throw a ball. Tennis had 33.3 percent of the responses. Other favorites were golf, swimming, putt putt and baseball.

Women lacrosse players. Women lacrosse players indicated fairly mixed preferences between individual and team sports. Twenty-six and three tenths percent of the responses were for lacrosse. Second was field hockey with 15.8 percent of the responses. This is not surprising since the games are in some ways similar and both involve much running. Basketball was next with 11.8 percent followed by tennis with 10.3 percent, softball with 7.6 percent, swimming with 6.4 percent, volleyball with 4.6 percent, and snow skiing with 4.1 percent.

Women tennis players. Women tennis players expressed preferences for individual type sports with the exception of basketball which was third with 10.1 percent of the responses. Tennis was first with 36.6 percent followed by swimming with 10.5 percent, field hockey with 6.8 percent and snow skiing with 6.4 percent. Other favorites were golf, riding, sailing, softball, volleyball and water skiing.

SUMMARY

One hundred and seventy women tennis players from eighteen squads, 258 women lacrosse players from twelve squads, 23 men tennis players from four squads and 48 men lacrosse players from two squads, participated in this

study of psychological anxiety levels of college students who engage in intercollegiate athletics. The problem was concerned with anxiousness as measured by the State Trait Anxiety Inventory (STAI) and selected factors.

Anxiety scores and background factors were obtained using a mail survey. Variables considered were sex, age, geographic location of the athlete's home, family size, sibling order, major field of study, academic class, grade point average, geographic location of school, sport, athletes compared to non-athletes, experience, school size, and team's record. The survey also determined reasons for participating and sport preference.

A combination of one way analyses of variance, t-tests, and Newman-Keuls tests revealed the following results: (1) Trait anxiety scores of men lacrosse players and a combination of men lacrosse and tennis players were significantly higher than women lacrosse players or a combination of women lacrosse and tennis players. (2) Trait anxiety of women athletes who were first or second born was significantly higher than women athletes who were born fourth or later. (3) Significant differences were also found in the trait anxiety scores of men with different academic majors. Men who are studying physical or natural science showed higher anxiety levels than men studying for a professional occupation or physical education. (4) In a comparison between athletes and non-athletes, men lacrosse players and all men athletes showed trait anxiety scores significantly higher than male undergraduate college norms. (5) Women athletes showed significantly higher state anxiety scores than female undergraduate college norms. (6) Significant differences were also found between women tennis

players who participated on a losing team and women tennis players who were affiliated with a team with an even season. The latter group demonstrated higher levels of trait anxiety. However, neither of these groups of athletes was different than players on teams with winning seasons. In lacrosse, on the other hand, winning team lacrosse players had significantly lower state anxiety scores than players affiliated with a losing team.

CONCLUSIONS

The following conclusions are based entirely on the results of this study. The review of literature has shown that there is much discrepancy in the results of studies dealing with psychological anxiety. This study is not an exception in that respect.

1. Are there differences among the psychological anxiety levels of athletes that may be associated with personal factors?
   a. Are there differences between the psychological anxiety levels of athletes that may be associated with their sex?

      The data obtained in this study reveal trait anxiety scores of men lacrosse players to be significantly higher than of women lacrosse players. As a combined group of athletes, tennis and lacrosse players, differences between the sexes in trait anxiety are also significant. No other sex associated differences were found.
   b. Are there differences among the psychological anxiety levels of athletes that may be associated with their age?

Differences in age were not found to be associated with state or trait anxiety levels.

2. Are there differences among the psychological anxiety levels of athletes that may be associated with family and home related factors?

   a. Are there differences among the psychological anxiety levels of athletes that may be associated with the geographic location of their homes?

      No significant differences were found to be associated with the geographic location of the athletes' homes.

   b. Are there differences among the psychological anxiety levels of athletes that may be associated with the size of their families?

      Family size was not demonstrated to be associated with state or trait anxiety levels.

   c. Are there differences among the psychological anxiety levels of athletes that may be associated with their sibling order?

      Women athletes who were first or second born showed higher trait anxiety levels than those who were born fourth or later. No other significant differences were found to be associated with sibling order.

3. Are there differences among the psychological anxiety levels of athletes that may be associated with educational related factors?

   a. Are there differences among the psychological anxiety levels of athletes that may be associated with their major field of study?

Men who were studying physical or natural science demonstrated significantly higher trait anxiety scores than men studying for a professional occupation or men studying physical education. No other differences were found.

b. Are there differences among the psychological anxiety levels of athletes that may be associated with their class?

No significant differences in state or trait anxiety scores were found that were associated with academic class.

c. Are there differences among the psychological anxiety levels of athletes that may be associated with their grade point average (GPA)?

Grade point average was not found to be associated with state or trait anxiety levels of anxiety.

d. Are there differences among the psychological anxiety levels of athletes that may be associated with the geographic location of the schools they attend?

There were no significant differences found among groups of athletes who attend school in various states.

5. Are there differences among the psychological anxiety levels of athletes that may be associated with experience pertaining to sport?

a. Are there differences between the psychological anxiety levels of athletes and undergraduate college norms?

Men lacrosse players and all men athletes have higher

trait anxiety levels than non-athletes. Women athletes, on the other hand, have higher state anxiety scores than non-athletes. No other associations were found.

b. Are there differences between the psychological anxiety levels of tennis and lacrosse players?

Sport was not shown to be associated with state or trait anxiety scores.

c. Are there differences among the psychological anxiety levels of athletes that may be associated with their previous experience in interscholastic sports?

No significant differences were found between groups with varying amounts of interscholastic experience.

d. Are there differences among the psychological anxiety levels of athletes that may be associated with their previous experience in intercollegiate sports?

There was no association demonstrated between groups with varying amounts of intercollegiate experience.

e. Are there differences among the psychological anxiety levels of athletes that may be associated with their previous experience in their concerned sport?

Significant differences were not found that were associated with previous experience in the concerned sport.

f. Are there differences among the psychological anxiety levels of

women athletes that may be associated with the size of the school which they attend?

No significant differences were found among various groups of women athletes according to the size of the school they attend.

g. Are there differences among the psychological anxiety levels of women athletes that may be associated with their team's record for the season?

Women tennis players who play on a losing team have significantly lower trait anxiety scores than women on teams with an even season. Additionally, women lacrosse players who play on a losing team have higher state anxiety scores than women lacrosse players who play on a winning team. No other differences were found.

h. Are there differences among the psychological anxiety levels of women athletes that may be associated with the team's record this year compared to their team's record of the previous year?

No association was demonstrated between groups whose season this year had various different relationships with their season last year.

BIBLIOGRAPHY

BIBLIOGRAPHY

A. BOOKS

1. Atkinson, John W., and Norman T. Feather. A Theory of Achievement Motivation. New York: John Wiley and Sons, Inc., 1966.

2. Barrow, Harold M., and Rosemary McGee. A Practical Approach to Measurement in Physical Education. Philadelphia: Lea and Febiger, 1971.

3. Cattell, Raymond B. "Anxiety and Motivation: A Theory and Crucial Experiments," Anxiety and Behavior, ed. Charles D. Spielberger (New York: Academic Press, 1966), pp. 23-62.

4. Cattell, Raymond B., and Ivan H. Scheier. The Meaning and Measurement of Neuroticism and Anxiety. New York: The Ronald Press Company, 1961.

5. Cattell, Raymond B., and Ivan H. Scheier. Handbook for the IPAT Anxiety Scale Questionnaire. Champaign: Institute for Personality and Ability Testing, 1963.

6. Committee on Public Information of the American Psychiatric Association, Committee on Public Information. A Psychiatric Glossary: The Meaning of Words Most Frequently Used in Psychiatry. 2nd ed. Washington, D. C.: ASP, 1964.

7. Edwards, Allen L. Experimental Design in Psychological Research. New York: Holt, Rinehart, Winston, Inc., 1972.

8. Fischer, William F. Theories of Anxiety. New York: Harper and Row, 1970.

9. Garre, Walter J. Basic Anxiety--A New Psychobiological Concept. New York: Philosophical Library, 1962.

10. Levitt, Eugene C. The Psychology of Anxiety. New York: The Bobbs-Merrill Company, Inc., 1967.

11. McReynolds, Paul. Advances in Psychological Assessment. Palo Alto: Science and Behavior Books, Inc., 1968.

12. Sarason, Seymour. "The Measurement of Anxiety in Children: Some Questions and Problems," Anxiety and Behavior, ed. Charles D. Spielberger (New York: Academic Press, 1966), pp. 63-80.

13. Spielberger, Charles D. Anxiety and Behavior. New York: Academic Press, 1966.

14. Spielberger, Charles D., Richard L. Gorsuch, and Robert E. Lushene. STAI Manual. Palo Alto: Consulting Psychologists Press, Inc., 1970.

15. Weber, Jerome C., and David R. Lamb. Statistics and Research in Physical Education. Saint Louis: The C. V. Mosby Company, 1970.

B. PERIODICALS

16. Allen, George J. "Effect of Three Conditions of Administration on 'Trait' and 'State' Measures of Anxiety," Journal of Consulting Psychology, 34:3, 355-359, June, 1970.

17. Alpert, Richard, and Ralph Norman Haber. "Anxiety in Academic Achievement Situations," Journal of Abnormal and Social Psychology, 61:2, 207-215, September, 1960.

18. Bendig, A. W. "Age, Sex, and the Manifest Anxiety Test," Journal of Consulting Psychology, 18:1, 16, February, 1954.

19. Bendig, A. W. "The Development of a Short Form of the Manifest Anxiety Scale," Journal of Consulting Psychology, 20:5, 384, October, 1956.

20. Bendig, A. W. "'Social Desirability' and 'Anxiety' Variables in the IPAT Anxiety Scale," Journal of Consulting Psychology, 23:4, 377, August, 1959.

21. Bendig, A. W. "Comparative Reliability of Cattell's 'Covert' and 'Overt' Items as Measures of the Anxiety Factor," The Journal of General Psychology, 69:2nd half, 175-179, October, 1963.

22. Booth, E. G., Jr. "Personality Traits of Athletes as Measured by the MMPI," Research Quarterly, 29:2, 127-138, May, 1958.

23. Burton, Elsie Carter. "State and Trait Anxiety, Achievement Motivation and Skill Attainment in College Women," Research Quarterly, 42:2, 39-44, May, 1971.

24. Buss, Arnold H., and others. "The Measurement of Anxiety in Clinical Situations," Journal of Consulting Psychology, 19:2, 125-129, April, 1955.

25. Buttiglieri, Matthew William. "The Relationship of Manifest Anxiety Measures of Performance on Perceptual Speed Tests," Dissertation Abstracts, 15:884, 1955.

26. Calvin, Allen D., and others. "A Further Investigation of the Relationship Between Manifest Anxiety and Intelligence," Journal of Consulting Psychology, 19:4, 280-282, August, 1955.

27. Carron, Albert V. "Motor Performance Under Stress," Research Quarterly, 39:3, 463-469, October, 1968.

28. Carron, Albert V. "Reactions to 'Anxiety and Motor Behavior'," Journal of Motor Behavior, 3:2, 181-188, June, 1971.

29. Carron, Albert V., and W. R. Morford. "Anxiety, Stress and Motor Learning," Perceptual and Motor Skills, 27:2, 507-511, October, 1968.

30. Castaneda, Alfred. "Reaction Time and Response Amplitude as a Function of Anxiety and Stimulus Intensity," Journal of Abnormal and Social Psychology, 53:2, 225-228, September, 1956.

31. Cattell, Raymond B., and Ivan H. Scheier. "The Nature of Anxiety: A Review of Thirteen Multivariate Analyses Comprising 814 Variables," Psychological Reports, 4:2, 351-389, June, 1958.

32. Christie, Richard, and Stanley Budnitzky. "A Short Forced-Choice Anxiety Scale," Journal of Consulting Psychology, 21:6, 501, December, 1957.

33. Dana, Richard H. "Manifest Anxiety, Intelligence, and Psychopathology," Journal of Consulting Psychology, 21:1, 38-39, February, 1957.

34. Daugert, Patricia Jean. "The Relationships of Anxiety and the Need for Achievement to the Learning of Swimming," Dissertation Abstracts, 28:112-A, 1966.

35. Davids, Anthony. "Relations Among Several Objective Measures of Anxiety Reduction, and Stress in Learning," Journal of Consulting Psychology, 19:4, 275-279, August, 1955.

36. Deese, James, Richard S. Lazarus, and James Keenan. "Anxiety, Anxiety Reduction, and Stress in Learning," Journal of Experimental Psychology, 46:1, 55-60, July, 1953.

37. Denny, J. Peter. "Effects of Anxiety and Intelligence on Concept Formation," Journal of Experimental Psychology, 72:4, 596-602, October, 1966.

38. Eriksen, Charles W., and Anthony Davids. "The Meaning and Clinical Validity of the Taylor Anxiety Scale and the Hysteria-Psychasthenia Scales from the MMPI," Journal of Abnormal and Social Psychology, 50:1, 135-137, January, 1955.

39. Farber, I.E., and Kenneth W. Spence. "Complex Learning and Conditioning as a Function of Anxiety," Journal of Experimental Psychology, 45:2, 120-125, February, 1953.

40. Freeman, M. J. "The Development of a Test for the Measurement of Anxiety: A Study of Its Reliability and Validity," Psychological Monographs: General and Applied, 67:3, 1-19, Whole No. 353, 1953.

41. Gleser, Goldine, and George Ulett. "The Saslow Screening Test As A Measure of Anxiety-Proneness," Journal of Clinical Psychology, 8:3, 279-283.

42. Gordon, Edward M., and Seymour B. Sarason. "The Relationship Between 'Test Anxiety' and 'Other Anxieties'," Journal of Personality, 23:3, 317-323, March, 1955.

42a. Griffin, Mary Roland. "An Analysis of State and Trait Anxiety Experienced in Sports Competition by Women at Different Age Levels," The Foil, 58-64, Spring 1972.

43. Gynther, Ruth Autrey. "The Effects of Anxiety and of Situational Stress on Communicative Efficiency," Journal of Abnormal and Social Psychology, 54:2, 274-276, March, 1957.

44. Hammer, W. M. "A Comparison of Differences in Manifest Anxiety in University Athletes and Non-athletes," Journal of Sports Medicine and Physical Fitness, 7:1, 31-34, March, 1967.

45. Heineman, Charles E. "A Forced-Choice Form of the Taylor Anxiety Scale," Journal of Consulting Psychology, 17:6, 447-454, December, 1953.

46. Johnson, Warren R. "A Study of Emotion Revealed in Two Types of Athletic Sports Contests," Research Quarterly, 20:1, 72-79, March, 1949.

47. Kamin, Leon J. "The Measurement of Anxiety: A Methodological Note," Canadian Journal of Psychology, 11:1, 71-74, March, 1957.

48. Kamin, Leon J., and James W. Clark. "The Taylor Scale and Reaction Time," Journal of Abnormal and Social Psychology, 54:2, 262-263, March, 1957.

49. Katkin, Edward S. "Relationship Between Manifest Anxiety and Two Indices of Autonomic Response to Stress," Journal of Personality and Social Psychology, 2:3, 324-333, September, 1965.

50. Kendall, Edward. "The Validity of Taylor's Manifest Anxiety Scale," Journal of Consulting Psychology, 18:6, 429-432, December, 1954.

51. Kerrick, Jean S. "Some Correlates of the Taylor Manifest Anxiety Scale," Journal of Abnormal and Social Psychology, 50:1, 75-77, January, 1955.

52. Klugh, Henry E., and A. W. Bendig. "The Manifest Anxiety and ACE Scales and College Achievement," Journal of Consulting Psychology, 19:6, 487, December, 1955.

53. Langer, Phillip. "Varsity Football Performance," Perceptual and Motor Skills, 23:3, Part 2, 1191-1199, December, 1966.

54. Lauterback, Carl G. "The Taylor A Scale and Clinical Measures of Anxiety," Journal of Consulting Psychology, 22:4, 314, August, 1958.

55. Lazrus, Richard S., and Charles W. Eriksen. "Effects of Failure Upon Skilled Performance," Journal of Experimental Psychology, 43:2, 100-105, February, 1952.

56. Lotsof, Erwin J., and Walter L. Downing. "Two Measures of Anxiety," Journal of Consulting Psychology, 20:3, 170, June, 1956.

57. Lucas, James D. "The Interactive Effects of Anxiety, Failure, and Intra-Serial Duplication," American Journal of Psychology, 65:1, 59-66, June, 1952.

58. Malumphy, Theresa M. "Personality of Women Athletes in Intercollegiate Competition," Research Quarterly, 39:3, 610-620, October, 1968.

59. Mandler, George, and Judith E. Cowen. "Test Anxiety Questionnaires," Journal of Consulting Psychology, 22:3, 228-229, June, 1958.

60. Mandler, George, and Seymour Sarason. "A Study of Anxiety and Learning," Journal of Abnormal and Social Psychology, 47:2, 166-172, April, 1952.

61. Marteniuk, Ronald G. "Two Factors to be Considered in the Design of Experiments in Anxiety and Motor Behavior," Journal of Motor Behavior, 3:2, 189-192, June, 1971.

62. Martens, Ranier. "Anxiety and Motor Behavior: A Review," Journal of Motor Behavior, 3:2, 151-179, June, 1971.

63. Martens, Ranier, and Daniel M. Landers. "Effect of Anxiety, Competition, and Failure on Performance of a Complex Motor Task," Journal of Motor Behavior, 1:1, 1-10, March, 1969.

64. Martin, Barclay. "The Assessment of Anxiety by Physiological Behavioral Measures," Psychological Bulletin, 58:3, 234-255, May, 1961.

65. Martin, Barclay, and Bruce McGowan. "Some Evidence on the Validity of the Sarason Test Anxiety Scale," Journal of Consulting Psychology, 19:6, 468, December, 1955.

66. Matarazzo, Joseph D., and others. "The Relationship Between Anxiety Level and Several Measures of Intelligence," Journal of Consulting Psychology, 18:3, 201-205, June, 1954.

67. Matarazzo, Ruth G. "The Relationship of Manifest Anxiety to Wechsler-Bellevue Subtest Performance," Journal of Consulting Psychology, 19:3, 218, June, 1955.

68. McCreary, Joyce B., and A. W. Bendig. "Comparison of Two Forms of the Manifest Anxiety Scale," Journal of Consulting Psychology, 18:3, 206, June, 1954.

69. Montague, Ernest K. "The Role of Anxiety in Serial Rote Learning," Journal of Experimental Psychology, 45:2, 91-95, February, 1953.

70. Mowrer, O. H. "A Stimulus-Response Analysis of Anxiety and Its Role as a Reinforcing Agent," Psychological Review, 46:5, 553-565, November, 1939.

71. Nash, Ed L., and others. "Effects of Manifest Anxiety and Induced Anxiety And Experimenter Variability on Simple Reaction Time," Perceptual and Motor Skills, 22:2, 483-487, April, 1966.

72. Neumann, Joseph. "Sex Differences in Anxiety Scores For College Freshmen and Sophomores," The Journal of Psychology, 74, 113-115, January, 1970.

73. Paul, Gordon L., and Charles W. Eriksen. "Effects of Test Anxiety on 'Real-Life' Examinations," Journal of Personality, 32:3, 480-494, September, 1964.

74. Quarter, Jack J., and Robert Laxer. "Sex Differences in the Taylor Manifest Anxiety Scale," Journal of Educational Measurement, 6:1, 21-23, Spring, 1969.

75. Raphelson, Alfred Charles. "Imaginative and Direct Verbal Measures of Anxiety Related to Physiological Reactions in the Competitive Achievement Situation," Dissertation Abstracts, 16:2537, 1956.

76. Raphelson, Alfred Charles. "The Relationships Among Imaginative, Direct Verbal, and Physiological Measures of Anxiety in an Achievement Situation." Journal of Abnormal and Social Phychology, 54:1, 13-18, January, 1957.

77. Rashkins, Harold A., and George S. Welsh. "Detection of Anxiety by Use of the Wechsler Scale," Journal of Clinical Psychology, 2:4, 354-357, October, 1946.

78. Russell, Douglas G., and Irwin G. Sarason. "Test Anxiety, Sex, and Experimental Conditions in Relation to Anagram Solution," Journal of Personality and Social Psychology, 1:5, 493-496, May, 1965.

79. Ryan, E. Dean, and W. L. Lakie. "Competitive and Noncompetitive Performance in Relation to Achievement Motive and Manifest Anxiety," Journal of Personality and Social Psychology, 1:4, 342, 345, April, 1965.

80. Saltz, Eli. "Manifest Anxiety: Have We Misread the Data?" Psychological Review, 77:6, 568-573, November, 1970.

81. Saltz, Eli, and Arthur J. Hoehn. "A Test of the Taylor-Spence Theory of Anxiety," Journal of Abnormal and Social Psychology, 54:1, 114-117, January, 1957.

82. Sampson, Edward E. "Achievement in Conflict," Journal of Personality, 31:4, 510-516, December, 1963.

83. Sampson, Hubert, and Dalbir Bindra. "'Manifest' Anxiety, Neurotic Anxiety, and the Rate of Conditioning." Journal of Abnormal and Social Psychology, 49:2, 256-259, April, 1954.

84. Sarason, Irwin. "Effect of Anxiety, Motivational Instructions, and Failure on Serial Learning," Journal of Experimental Psychology, 51:4, 253-260, April, 1956.

85. Sarason, Irwin. "Test Anxiety, General Anxiety, and Intellectual Performance," Journal of Consulting Psychology, 21:6, 485-490, December, 1957.

86. Sarason, Irwin. "Empiracle Findings and Theoretical Problems in the Use of Anxiety Scales," Psychological Bulletin, 57:5, 403-415, September, 1960.

87. Sarason, Irwin, and Ernest G. Palola. "The Relationship of Test and General Anxiety, Difficulty of Task, and Experimental Instructions to Performance," Journal of Experimental Psychology, 59:3, 181-191, March, 1960.

88. Sarason, Seymour B., and others. "A Test Anxiety Scale for Children," Child Development, 29:1, 105-113, March, 1958.

89. Sarason, Seymour B., and Edward M. Gordon. "The Test Anxiety Questionnaire: Scoring Norms," Journal of Abnormal and Social Psychology, 48:3, 447-448, July, 1953.

90. Sarason, Seymour B., and George Mandler. "Some Correlates of Test Anxiety," Journal of Abnormal and Social Psychology, 47:4, 810-817, October, 1952.

91. Siegman, Aron W. "Cognitive, Affective, and Psychopathological Correlates of the Taylor Manifest Anxiety Scale," Journal of Consulting Psychology, 20:2, 137-141, April, 1956.

92. Silverman, Robert E., and Bernard Blitz. "Learning and Two Kinds of Anxiety," Journal of Abnormal and Social Psychology, 52:3, 301-303, May, 1956.

93. Sinick, Daniel. "Two Anxiety Scales Correlated and Examined for Sex Differences," Journal of Clinical Psychology, 12:4, 394-395, October, 1956.

94. Spence, Janet Taylor. "A Comment on 'Performance on a Motor Learning Task as Related to MAS Scores'," Perceptual and Motor Skills, 17:2, 409, October, 1963.

95. Spence, Janet Taylor. "What Can You Say About a Twenty Year Old Theory That Won't Die?" Journal of Motor Behavior, 3:2, 193-203, June, 1971.

96. Spence, K. W., I. E. Farber, and H. H. McFann. "The Relationship of Anxiety (Drive) Level to Performance in Competitional and Non-competitional Paired-Associates Learning," Journal of Experimental Psychology, 52:5, 296-305, November, 1956.

97. Spence, K. W., John Taylor, and Rhoda Ketchel. "Anxiety (Drive) Level and Degree of Competition in Paired-Associates Learning," Journal of Experimental Psychology, 52:5, 306-310, November, 1956.

98. Spielberger, Charles D. "The Effects of Manifest Anxiety on the Academic Achievement of College Students," Mental Hygiene, 46:3, 420-425, July, 1962.

99. Spielberger, Charles D. "Notes and Comments Trait-State Anxiety and Motor Behavior," Journal of Motor Behavior, 3:3, 265-279, September, 1971.

100. Spielberger, Charles D., and William G. Katzenmeyer. "Manifest Anxiety, Intelligence, and College Grades," Journal of Consulting Psychology, 23:3, 278, June, 1959.

101. Spielberger, Charles D., and Lou Hicks. "Anxiety (Drive), Stress, and Serial-Position Effects in Serial-Verbal Learning," Journal of Experimental Psychology, 72:4, 589-595, October, 1966.

102. Suinn, Richard M. "Susceptibility to Anxieties: A Generalized Trait," The Journal of General Psychology, 73:2nd half, 317-319, October, 1965.

103. Taylor, Janet A. "A Personality Scale of Manifest Anxiety," Journal of Abnormal and Social Psychology, 48:2, 285-290, April, 1953.

104. Taylor, Janet A., and Kenneth Spence. "The Relationship of Anxiety Level to Performance in Serial Learning," Journal of Experimental Psychology, 44:2, 61-64, August, 1952.

105. Vaught, Glen M., and Steven E. Newman. "The Effects of Anxiety on Motor-Steadiness in Competitive and Noncompetitive Conditions," Psychometric Science, 6:12, 519-520, December, 1966.

106. Welsh, George S. "An Anxiety Index and an Internalization Ratio for the MMPI," Journal of Consulting Psychology, 16:1, 65-72, February, 1952.

107. Whiting, H. T. A., and D. E. Stembridge. "Personality and the Persistent Non-swimmer," Research Quarterly, 36:3, 348-356, October, 1965.

108. Wiggins, S. L., and others. "Manifest Anxiety and Perceptual-Motor Steadiness," Perceptual and Motor Skills, 15:3, 759-761, December, 1962.

109. Windle, Charles. "The Relationships Among Five MMPI 'Anxiety' Indices," Journal of Consulting Psychology, 19:1, 61-63, February, 1955.

110. Wright, John H., George A. Gescheider, and William F. Battig. "Performance on a Motor Learning Task as Related to MAS Scores," Perceptual and Motor Skills, 16:2, 368, April, 1963.

111. Wyrick, Waneen. "Fear in Human Performance," Proceedings of the Annual Conference Southern Association For Physical Education of College Women, October 28-30, 1972.

112. Zuckerman, Marvin. "The Development of an Affect Adjective Checklist For the Measurement of Anxiety," Journal of Consulting Psychology, 24:5, 457-462, October, 1960.

113. Zuckerman, Marvin, and D. Vincent Biase. "Replication and Further Data on the Validity of the Affect Adjective Check List Measure of Anxiety," Journal of Consulting Psychology, 26:3, 291, June, 1962.

APPENDIX A

UNC-G Box 511
Greensboro, North Carolina 27412
March 14, 1972

Coach
School
Address

Dear :

One area of focus in my graduate study at The University of North Carolina at Greensboro is anxiousness as we can measure it in college athletes. My purpose in writing is to ask if you would be willing to administer for me a paper and pencil test to the players on your (tennis/lacrosse) team. It would have to be given during the last week of the regular season and would not take more than twenty minutes.

If you are friendly to the idea, I will be glad to furnish you with more details. For your convenience a response card is enclosed. Any consideration would be appreciated.

Sincerely yours,

Doris M. Kaatz

Enclosure

Name _____

Are you willing to administer the Spielberger test to the players on your (tennis/lacrosse) team?

Yes _____ No _____

Number of players on your squad?_____

Date of last regular season match?_____

POSTAGE

Miss Doris M. Kaatz
UNC-G Box 511
Greensboro, North Carolina 27412

UNC-G Box 511
Greensboro, North Carolina 27412
May 28, 1972

Coach
School
Address

Dear :

Thank you for volunteering to administer the Spielberger test to the players on your team. However, my records show that you have not returned the testing materials. It is necessary for me to begin to analyze the data at this time. If the materials are not returned immediately it will be necessary for me to exclude your data from the analysis. Thank you again.

Sincerely yours,

Doris M. Kaatz

UNC-G Box 511
Greensboro, North Carolina 27412
March 14, 1972

Coach
School
Address

Dear :

One area of focus in my graduate study at The University of North Carolina at Greensboro is anxiousness as we can measure it in college athletes. My purpose in writing is to ask if you would be willing to have one of my assistants come and administer a paper and pencil test to the players on your (tennis/lacrosse) team. It would have to be given during the last week of the regular season and would not take more than twenty minutes.

If you are friendly to the idea, I will be glad to furnish you with more details. For your convenience a response card is enclosed. Any consideration would be appreciated.

Sincerely yours,

Doris M. Kaatz

Enclosure

Name:_____

Are you willing to have someone come and administer the Spielberger test to the players on your team?

Yes_____ No_____

Date of last regular season game?_____

Date for test administration:

1st choice: Day_____ Date_____ Time_____

2nd choice: Day_____ Date_____ Time_____

Specific location of test administration:

POSTAGE

Miss Doris M. Kaatz
UNC-G Box 511
Greensboro, North Carolina 27412

UNC-G Box 511
Greensboro, North Carolina 27412
May 10, 1972

Coach
School
Address

Dear :

Thank you for volunteering to have someone come and administer the Spielberger test to the players on your lacrosse team. A test administrator will come and administer the test on May 28th, 1972 at 3:30 p.m. If you have any questions please don't hesitate to ask. Thanks again for your time.

Sincerely yours,

Doris M. Kaatz

APPENDIX B

MEN LACROSSE PLAYERS

College	Number
Johns Hopkins	25
University of Maryland	23
Total	48

MEN TENNIS PLAYERS

College	Number
Christopher Newport	5
Elon	6
St. Andrews	7
University of North Carolina - G	5
Total	23

WOMEN LACROSSE PLAYERS

College	Number
Colby	12
Colby Junior College	16
Cornell	15
Frostburg	24
Madison	35
Mary Washington	14
Millersville	20
Pennsylvania State	27
Salisbury State	16
Trenton State	30
University of Maryland	28
West Hampton	21
Total	258

WOMEN TENNIS PLAYERS

College	Number
Appalachian State	6
Atlantic Christian	5
Colby	12
Colby Junior College	15
Converse	7
Cornell	5
Furman	9
Madison	14
Pennsylvania State	12
St. Mary's	6
Salem State	7
Sweet Briar	12
University of Maryland	15
University of Massachusetts	11
University of North Carolina - G	11
Wake Forest	8
Westfield State	7
William and Mary	8
Total	170

APPENDIX C

To all participating coaches:

Thank you for volunteering to administer this test for me. Enclosed is an instruction sheet and all the test materials. Please read the instruction sheet now. Thank you again for your cooperation.

Sincerely yours,

Doris M. Kaatz

INSTRUCTION SHEET

A. Preliminary planning prior to the administration of the test

1. Decide on day, time, and place. Remember that the test must be given during the week of the last game.

2. Announce to the team that a test will be given and ask them to bring a pencil on that day.

B. When the team is assembled for the test administration

1. Distribute the Self-Evaluation Questionnaire. (white)

2. Read the directions on both sides of the test to the respondents.

3. Emphasize that one side concerns how you generally feel, and one side concerns how you feel right now.

4. Direct the respondents to answer Form X-1 first and then answer Form X-2 which is on the other side.

5. If specific questions arise in the testing session, answer in a noncommittal manner. Responses such as, "Just answer according to how you generally feel," or "Answer the way you feel right now," will usually suffice.

6. Tell the respondents not to omit any questions.

7. Remind them to put their names on all papers. The purpose of this is so I can tell which personal data sheet goes with which test.

8. Tell each respondent to bring you the test when he/she finishes.

9. Exchange the completed test form for the personal data sheet, (blue) and instruct the respondents to fill that sheet out.

C. Prior to returning the materials

1. Complete the team data sheet. (gold)

2. Put all materials, used or unused into the return envelope and mail it.

TEAM DATA

Coach: _____

Sport: _____

School: _____

School Size (no. of students): _____

Squad Size: _____

Number of wins this season: _____

Number of losses this season: _____

Number of ties this season: _____

Is this record better or worse than last year's record? _____

PERSONAL DATA QUESTIONNAIRE

Name: _____

Home Address: _____

Local Address: _____

College: _____ Major: _____

Class: Fr.: _____ Soph.: _____ Jr.: _____ Sr.: _____

Age: _____ (years) _____ (months)

Sex: M_____ F_____

Grade Point Average: (overall) 4.0_____ 3.5-3.9_____ 3.0-3.4_____ 2.5-2.9_____ 2.0-2.4_____ 1.5-1.9_____

Status: Tennis Player_____ Singles_____ Doubles_____ Both_____

Lacrosse Player_____ Position: _____

Number of older brothers and sisters: Brothers:_____ Sisters:_____

Number of younger brothers and sisters: Brothers:_____ Sisters:_____

List all intercollegiate participation:

Sport	No. of Years

List all interscholastic participation:

Sport	No. of Years

List the three sports in which you most enjoy participating:

_____

_____

_____

Have you ever participated in any sport at a level higher than the intercollegiate level? If so, what sport(s) and how many years?

_____

_____

What is your reason for presently participating on the team?

Excitement_____ Health Effects_____

Social Interaction_____ Fun_____

Skill Improvement_____ Competitive Experience_____

Other (write in)_____

SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

STAI FORM X-1

NAME _____ DATE _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle 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
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

CONSULTING PSYCHOLOGISTS PRESS
577 College Avenue, Palo Alto, California 94306

SELF-EVALUATION QUESTIONNAIRE

STAI FORM X-2

NAME _____ DATE _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle 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.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant	①	②	③	④
22. I tire quickly	①	②	③	④
23. I feel like crying	①	②	③	④
24. I wish I could be as happy as others seem to be	①	②	③	④
25. I am losing out on things because I can't make up my mind soon enough	①	②	③	④
26. I feel rested	①	②	③	④
27. I am "calm, cool, and collected"	①	②	③	④
28. I feel that difficulties are piling up so that I cannot overcome them	①	②	③	④
29. I worry too much over something that really doesn't matter	①	②	③	④
30. I am happy	①	②	③	④
31. I am inclined to take things hard	①	②	③	④
32. I lack self-confidence	①	②	③	④
33. I feel secure	①	②	③	④
34. I try to avoid facing a crisis or difficulty	①	②	③	④
35. I feel blue	①	②	③	④
36. I am content	①	②	③	④
37. Some unimportant thought runs through my mind and bothers me	①	②	③	④
38. I take disappointments so keenly that I can't put them out of my mind	①	②	③	④
39. I am a steady person	①	②	③	④
40. I become tense and upset when I think about my present concerns	①	②	③	④

APPENDIX D

RAW DATA

The following code has been used to record the data:

Code number -- #
State Anxiety Score -- S
Trait Anxiety Score -- T
Age -- Age
Years/Months
Sibling Order -- SO
# of older brothers -- # of older sisters -- # of younger brothers -- # of younger sisters -- twin
Home State -- HS
Alabama -- Ala
California -- Cal
Canada -- Ca
Connecticut -- Conn
Delaware -- Del
District of Columbia -- DC
Florida -- Fla
France -- Fra
Georgia -- Ga
Iowa -- Ia
Kentucky -- Ky
Louisiana -- La
Maine -- Me
Maryland -- Md
Massachusetts -- Mass
Minnesota -- Minn
Mississippi -- Miss
New Jersey -- NJ
New Hampshire -- NH
New York -- NY
North Carolina -- NC
Oregon -- Ore
Pennsylvania -- PA
Rhode Island -- RI
South Carolina -- SC
Tennessee -- Tenn
Texas -- Tex
Virginia -- Va
West Virginia -- WVa
School State -- SS
Maine -- Me
Maryland -- Md
Massachusetts -- Mass
New Hampshire -- NH
New Jersey -- NJ
New York -- NY
North Carolina -- NC
Pennsylvania -- Pa
South Carolina -- SC
Virginia -- Va
Major Area of Study -- MAS
Accounting -- Acc
Agriculture -- Agr
American Studies -- Am St
Animal Science -- An Sci
Anthropology -- Anth
Art -- Art
Art Education -- Art Ed
Art History -- Art His
Bio-chemistry -- Bio-chem
Biology -- Bio
Biological Science -- Bio Sci
Business -- Bus
Business Administration -- Bus Ad
Business Education -- Bus Ed
Chemistry -- Chem
Chemistry Education -- Chem Ed
Child Psychology -- Chi Psy
Chinese Studies -- Chin Stu

Civil Engineering -- Civ Eng
Deaf Education -- Deaf Ed
Drama -- Dr
Earth Science -- Ea Sci
Economics -- Eco
Electrical Engineering -- Elec Eng
Elementary Education -- Elem Ed
Elementary Physical Education -- Elem P E
English -- Eng
English Education -- Eng Ed
Environmental Analysis -- Env Ana
Environmental Engineering -- Env Eng
Family Studies -- Fam Stu
French -- Fr
Geography -- Geog
Geology -- Geol
German -- Ger
Government -- Govt
Health -- Hea
Health Education -- Hea Ed
History -- His
Home Economics -- H Eco
Home Economics Education -- H Eco Ed
Horticulture -- Hort
Human Development -- Hum Dev
Interior Design -- Int Des
Intermediate Education -- Int Ed
International Law -- Intl Law
Journalism -- Jour
Liberal Arts -- Lib Arts
Library Science -- Lib Sci
Mathematics -- Math
Mathematics Education -- Math Ed
Marketing -- Mark
Medical Technology -- Med Tech
Music -- Mus
Music Education -- Mus Ed
Natural Resources -- Nat Res
Natural Science -- Nat Sci
Nursing -- Nur
Nutrition -- Nut
Philosophy -- Phil
Physical Education -- P E
Physical Therapy -- P T
Political Science -- Pol Sci
Politics -- Pol
Pre-Law -- Pre-Law
Pre-Medicine -- Pre-Med
Pre-Vetinary -- Pre-Vet
Primary Education -- Pr Ed
Psychology -- Psy
Psychology of the Deaf -- Psy Deaf
Recreation -- Rec
Rehabilitation Education -- Reh Ed
Religion -- Rel
Social and Behavioral Science -- Soc Beh Sci
Social Psychology -- Soc Psy
Social Science -- Soc Sci
Social Studies -- Soc Stu
Social Welfare -- Soc Wel
Sociology -- Soc
Spanish -- Spa
Special Education -- Spec Ed
Speech -- Sp
Textile -- Tex
Textile Marketing -- Tex Mark
Transportation -- Tran
Undecided -- Und
Zoology -- Zoo

College -- Col
Appalachian State College -- App
Atlantic Christian College -- Atl Chr
Christopher Newport College -- Chr New
Colby College -- Col
Colby Junior College -- Col Jr
Converse College -- Con
Cornell University -- Cor

Elon College -- Elon
Frostberg State College -- Frost
Furman University -- Fur
Johns Hopkins University -- J Hop
Madison College -- Mad
Mary Washington College -- M Wash
Millersville College -- Mill
Salem College -- Sal
Salisbury State College -- Salis
St. Andrews Presbyterian College -- St. An Pres
St. Mary's College -- St. M
Sweet Briar College -- Sw Br
The College of William and Mary -- W and M
The Pennsylvania State University -- Pa
Trenton State College -- Tren
University of Maryland -- Md
University of Massachusetts -- Mass
University of North Carolina at Greensboro -- UNC-G
Wake Forest University -- W For
Westfield College -- West
West Hampton College -- W Hamp

Class -- C
Freshman -- Fr
Sophomore -- So
Junior -- Jr
Senior -- Sr

Grade Point Average -- GPA
Previous Interscholastic Experience -- PISE
Previous Intercollegiate Experience -- PICE
Previous Experience in Concerned Sport -- PCE
Missing Data -- MD

MEN LACROSSE PLAYERS

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
001	38	49	20/10	0-0-2-2-0	NY	Md	Nat Sci	J Hop	Jr	2.5-2.9	9	5	6
002	26	45	21/04	0-1-0-1-0	Md	Md	Env Eng	J Hop	Jr	3.0-3.4	9	8	7
003	45	47	19/11	0-0-2-1-0	NY	Md	Soc Beh Sci	J Hop	So	2.0-2.4	9	2	5
004	42	47	22/02	0-1-1-3-0	Md	Md	Soc Beh Sci	J Hop	Sr	2.5-2.9	9	7	4
005	39	49	20/03	1-0-1-0-0	NJ	Md	Soc Beh Sci	J Hop	So	2.0-2.4	11	2	6
006	28	48	21/02	2-0-0-1-0	Pa	Md	Nat Sci	J Hop	Jr	2.4-2.9	8	6	6
007	39	48	20/03	1-0-0-0-0	Pa	Md	Soc Beh Sci	J Hop	So	2.0-2.4	7	1	2
008	40	51	22/02	1-0-0-0-0	NY	Md	MD	J Hop	Sr	2.0-2.4	3	8	4
009	59	50	18/04	0-0-0-1-0	NY	Md	Math	J Hop	Fr	2.0-2.4	8	2	5
010	39	45	21/11	0-1-0-0-0	Md	Md	Soc Beh Sci	J Hop	Sr	2.5-2.9	9	8	8
011	33	52	22/02	0-2-0-0-0	NY	Md	Soc Beh Sci	J Hop	Sr	3.0-3.4	8	3	7
012	59	45	10/09	0-0-2-0-0	Md	Md	Soc Beh Sci	J Hop	So	2.0-2.4	10	3	6
013	44	52	20/00	0-0-1-2-0	NY	Md	MD	J Hop	So	2.0-2.4	9	3	5
014	43	52	20/08	0-0-0-2-0	Nd	Md	Nat Sci	J Hop	Jr	2.5-2.9	7	5	7
015	35	47	18/07	1-1-0-0-0	NJ	Md	Und	J Hop	Fr	2.5-2.9	9	1	4
016	43	45	22/08	0-2-0-0-0	NY	Md	Bio	J Hop	Sr	3.0-3.4	7	4	7
017	35	46	20/05	2-0-0-1-0	Md	Md	Soc Beh Sci	J Hop	So	2.0-2.4	7	4	6
018	39	48	19/03	1-1-0-1-0	NY	Md	Und	J Hop	Fr	2.5-2.9	9	1	4
019	39	47	19/04	0-1-0-1-0	NJ	Md	Pol Sci	J Hop	So	2.0-2.4	7	3	6
020	42	48	20/01	0-2-1-0-0	Md	Md	Soc Beh Sci	J Hop	So	2.0-2.4	5	2	5
021	50	30	21/04	1-1-0-1-0	NY	Md	Soc Beh Sci	J Hop	Jr	2.5-2.9	7	3	6
022	27	30	19/06	0-0-2-0-0	Md	Md	Soc Beh Sci	J Hop	So	2.5-2.9	3	1	3
023	62	54	20/04	1-1-1-1-0	Md	Md	Soc Beh Sci	J Hop	So	2.5-2.9	5	4	2
024	27	34	20/00	2-2-0-0-0	Md	Md	Soc Beh Sci	J Hop	So	2.0-2.4	9	4	5
025	41	35	20/05	3-0-0-1-0	Md	Md	Soc Beh Sci	J Hop	Jr	2.5-2.9	12	5	7
026	43	31	19/08	2-0-1-0-0	Md	Md	Soc	Md	So	2.5-2.9	5	2	5

#	S	T		SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
027	52	39	22/02	0-0-0-1-0	Md	Md	Mark	Md	Jr	2.0-2.4	9	3	6
028	31	40	21/02	1-1-1-4-0	NY	Md	Bus	Md	Jr	2.5-2.9	10	3	7
029	40	47	20/06	0-0-1-0-0	NY	Md	Hea	Md	Jr	1.5-1.9	8	3	7
030	49	51	20/06	1-0-0-0-0	Md	Md	Bio Sci	Md	Jr	3.0-3.4	6	6	6
031	46	37	22/00	1-0-1-2-0	Md	Md	Mark	Md	Jr	2.0-2.4	11	3	7
032	36	33	21/11	0-2-1-0-0	Md	Md	Bus	Md	Sr	2.5-2.9	8	3	5
033	34	44	19/11	0-1-0-0-0	NJ	Md	Geog	Md	So	2.5-2.9	6	2	5
034	32	35	20/10	1-0-3-0-0	Md	Md	Sp	Md	So	2.0-2.4	11	3	7
035	31	23	23/02	3-0-3-3-0	Md	Md	Eng	Md	Sr	1.5-1.9	12	3	7
036	31	31	21/04	0-0-0-1-0	NY	Md	Bus	Md	Jr	1.5-1.9	7	3	6
037	33	34	19/06	3-2-0-0-0	NY	Md	P E	Md	So	2.0-2.4	7	2	5
038	34	40	18/11	0-0-1-1-0	Md	Md	Und	Md	Fr	2.0-2.4	9	1	5
039	30	29	18/08	0-2-1-2-0	Md	Md	Und	Md	Fr	1.5-1.9	5	1	5
040	32	44	19/04	1-1-1-1-0	Md	Md	MD	Md	So	2.0-2.4	7	1	1
041	31	37	21/10	1-0-2-1-0	Md	Md	Anth	Md	Sr	2.0-2.4	3	4	7
042	38	37	18/08	1 1-2-0-0	Md	Md	Hort	Md	Fr	2.0-2.4	7	1	4
043	24	27	21/11	0-1-2-4-0	Md	Md	Tran	Md	Sr	2.0-2.4	11	6	7
044	35	28	22/11	0-0-4-0-0	NY	Md	Bus Ad	Md	Jr	2.0-2.4	6	4	8
045	39	41	18/11	0-1-0-3-0	NJ	Md	Bus	Md	Fr	15.-1.9	12	1	5
046	38	38	21/09	0-1-2-1-0	Md	Md	Bus	Md	Jr	2.0-2.4	2	3	4
047	44	37	22/01	1-1-0-1-0	NY	Md	P E	Md	Sr	2.0-2.4	11	4	8
048	25	41	21/10	1-1-5-2-1	NY	Md	Rec	Md	Jr	2.0-2.4	5	3	5

MEN TENNIS PLAYERS

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
049	33	40	21/11	0-1-1-0-0	Va	Va	MD	Chr New	Jr	2.0-2.4	7	1	5
050	32	28	22/05	0-0-1-1-0	Va	Va	Bus	Chr New	Jr	2.5-2.9	2	3	3
051	28	32	25/03	0-0-1-1-0	Va	Va	Bus	Chr New	So	2.5-2.9	1	2	3
052	33	32	31/04	0-0-1-2-0	Va	Va	Govt	Chr New	Jr	2.0-2.4	3	2	2
053	49	56	20/06	0-0-0-2-0	Va	Va	Bus	Chr New	So	2.0-2.4	4	2	4
054	35	30	18/10	1-0-0-0-0	NC	NC	P E	Elon	Fr	2.0-2.4	3	1	4
055	35	40	18/05	1-0-0-0-0	NC	NC	Acc	Elon	Fr	3.0-3.4	3	1	3
056	32	30	20/05	1-0-0-0-0	NC	NC	Soc Sci	Elon	So	1.5-1.9	2	2	4
057	45	50	19/07	0-0-0-0-0	NC	NC	His	Elon	So	MD	6	2	6
058	31	46	21/05	0-0-3-3-0	NJ	NC	P E	Elon	Jr	2.5-2.9	12	3	6
059	21	34	28/00	0-0-0-0-0	NY	NC	Mus	Elon	Fr	3.0-3.4	MD	MD	MD
060	51	46	20/09	0-0-0-1-0	NC	NC	Psy	St. An Pres	So	3.0-3.4	0	2	2
061	44	43	19/06	2-0-0-0-0	NC	NC	Mus	St. An Pres	Fr	2.5-2.9	3	1	4
062	34	23	17/11	0-0-0-1-0	NC	NC	Bus	St. An Pres	Fr	3.5-3.9	6	1	3
063	49	48	22/11	0-0-0-1-0	Va	NC	Eco	St. An Pres	Sr	2.0-2.4	11	3	6
064	41	31	21/06	0-2-0-1-0	NC	NC	Bus & Eco	St. An Pres	Jr	2.5-2.9	12	3	6
065	63	53	21/00	1-0-1-0-0	NC	NC	Bio	St. An Pres	Jr	2.0-2.4	3	7	6
066	40	37	22/11	1-0-1-0-0	Fla	NC	His	St. An Pres	Sr	2.5-2.9	7	1	4
067	43	33	22/07	1-0-0-0-0	NC	NC	Bus & Eco	UNC-G	Sr	2.5-2.9	0	2	2
068	29	46	21/08	0-0-0-0-0	Fla	NC	Bus & Eco	UNC-G	Sr	2.0-2.4	4	4	8
069	30	38	28/04	0-0-0-1-0	NC	NC	Bus Ad	UNC-G	Jr	2.5-2.9	2	1	1
070	45	48	22/00	1-0-0-0-0	NC	NC	Chem	UNC-G	Sr	3.0-3.4	1	3	4
071	42	47	21/04	1-0-0-1-0	NC	NC	Bus	UNC-G	Jr	2.5-2.9	2	1	3

WOMEN LACROSSE PLAYERS

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
072	30	41	19/02	1-0-0-0-0	Me	Me	Art	Col	Fr	MD	9	1	1
073	35	43	19/04	0-0-3-3-0	Me	Me	His	Col	Fr	2.5-2.9	2	1	1
074	28	32	18/10	3-0-0-0-0	Md	Me	Ea Sci	Col	Fr	2.5-2.9	2	1	1
075	53	32	18/09	2-0-0-0-0	Mass	Me	Am St	Col	Fr	3.0-3.4	7	2	1
076	27	56	18/08	0-0-1-1-0	Conn	Me	Ger-Fr	Col	Fr	3.0-3.4	8	4	1
077	31	42	18/11	1-0-0-0-0	NJ	Me	Bio	Col	Fr	3.0-3.4	0	1	1
078	32	30	19/02	2-2-0-0-0	Me	Me	Math	Col	Fr	2.5-2.9	0	1	1
079	37	31	18/07	0-0-0-1-0	Mass	Me	Govt	Col	Fr	2.5-2.9	4	1	1
080	52	35	19/03	0-0-0-3-0	Mass	Me	Soc	Col	Fr	2.0-2.4	4	2	1
081	34	39	20/05	1-1-0-1-0	Mass	Me	Art	Col	So	2.0-2.4	0	1	1
082	35	36	18/11	0-2-0-0-0	Minn	Me	His	Col	Fr	2.0-2.4	1	1	1
083	33	38	21/01	0-0-0-1-0	Me	Me	Psy	Col	Jr	2.5-2.9	12	1	1
084	43	49	19/05	0-0-2-2-0	Pa	NH	Lib Arts	Col Jr	Fr	2.5-2.9	1	1	2
085	41	41	19/08	2-0-1-0-0	NY	NH	Lib Arts	Col Jr	So	2.5-2.9	11	6	1
086	35	30	20/06	1-2-0-0-0	Pa	NH	Lib Arts	Col Jr	So	2.5-2.9	9	3	2
087	29	34	19/07	0-0-0-1-0	Mass	NH	Psy	Col Jr	So	3.0 3.4	16	5	6
088	30	38	19/11	1-1-2-0-0	Minn	NH	Lib Arts	Col Jr	So	3.0-3.4	0	2	2
089	59	32	19/05	0-1-0-2-0	Mass	NH	Lib Arts	Col Jr	Fr	2.0-2.4	3	2	1
090	36	38	20/05	1-1-1-1-0	Me	NH	Lib Arts	Col Jr	So	2.0-2.4	13	1	1
091	38	43	18/09	1-1-1-0-0	Mass	NH	Lib Arts	Col Jr	Fr	2.5-2.9	7	2	3
092	51	34	20/03	0-1-0-2-0	Mass	NH	Lib Arts	Col Jr	So	2.5-2.9	8	2	1
093	42	45	18/11	0-0-2-1-0	NH	NH	Lib Arts	Col Jr	Fr	2.5-2.9	8	3	1
094	56	47	20/02	1-1-1-0-0	Me	NH	Lib Arts	Col Jr	So	2.0-2.4	12	3	1
095	33	26	18/08	1-1-1-0-0	Mass	NH	Lib Arts	Col Jr	Fr	3.0-3.4	10	1	1
096	26	37	19/11	0-0-1-1-0	Md	NH	Lib Arts	Col Jr	So	2.0-2.4	6	2	5
097	39	41	20/08	1-2-0-1-0	Pa	NH	Lib Arts	Col Jr	So	2.5-2.9	11	4	5

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
098	48	41	19/02	1-0-1-1-0	NH	NH	Und	Col Jr	Fr	2.0-2.4	9	2	3
099	39	35	19/03	1-1-1-3-0	NH	NH	Lib Arts	Col Jr	Fr	3.0-3.4	3	1	1
100	25	25	18/09	1-1-0-0-0	Pa	NY	Int Des	Cor	Fr	3.5-3.9	8	1	5
101	27	29	21/10	0-1-0-1-0	NJ	NY	Hum Dev	Cor	Sr	3.0-3.4	0	9	3
102	25	34	21/02	0-0-0-0-0	NJ	NY	Env Ana	Cor	Jr	3.0-3.4	4	1	2
103	32	36	21/07	1-1-0-0-0	Md	NY	Env Ana	Cor	Sr	3.5-3.9	12	8	8
104	25	29	21/03	0-0-0-2-0	NY	NY	Hum Dev	Cor	Jr	3.0-3.4	12	2	4
105	28	36	19/11	0-1-2-1-0	Conn	NY	Civ Eng	Cor	So	2.5-2.9	0	2	2
106	28	34	18/02	1-2-0-1-0	Pa	NY	Bio	Cor	Fr	3.0-3.4	12	2	5
107	44	34	19/05	0-1-0-2-0	Pa	NY	Tex	Cor	So	3.5-3.9	9	3	1
108	35	35	18/06	1-0-0-0-0	NY	NY	Nat Res	Cor	Fr	2.5-2.9	1	1	1
109	27	28	20/05	0-0-1-2-0	NY	NY	Bio	Cor	So	2.5-2.9	5	2	3
110	34	29	21/02	0-0-0-0-0	Mass	NY	Math	Cor	Jr	3.0-3.4	9	6	2
111	74	36	19/02	1-0-0-0-0	Mass	NY	Chin Stu	Cor	Fr	2.0-2.4	20	1	6
112	31	40	20/04	0-2-0-1-0	NY	NY	Soc Psy	Cor	So	3.0-3.4	0	1	1
113	34	49	19/00	0-0-0-1-0	Del	NY	Psy	Cor	Fr	3.5-3.9	12	2	4
114	60	53	18/07	0-0-1-1-0	NH	NY	Chem	Cor	Fr	3.0-3.4	12	2	5
115	35	32	20/01	1-1-0-0-0	Md	Md	P E	Frost	Jr	2.0-2.4	10	1	1
116	41	45	21/02	0-0-1-1-0	Md	Md	P E	Frost	Jr	2.0-2.4	10	1	1
117	32	41	21/02	0-0-1-2-0	Md	Md	Hea & P E	Frost	Jr	3.0-3.4	0	5	3
118	49	50	21/10	0-0-3-2-0	Md	Md	P E	Frost	Sr	2.0-2.4	5	9	1
119	43	39	21/08	0-0-0-2-0	Md	Md	Hea & P E	Frost	Sr	2.0-2.4	8	1	1
120	49	44	20/07	0-0-2-0-0	Md	Md	P E	Frost	Jr	2.0-2.4	6	6	3
121	29	27	18/08	4-0-1-0-0	Md	Md	P E	Frost	Fr	2.0-2.4	6	1	3
122	24	27	21/03	0-2-0-0-0	Md	Md	Hea & P E	Frost	Jr	2.0-2.4	8	5	2
123	28	30	19/10	1-0-1-0-0	Md	Md	P E	Frost	So	2.5-2.9	8	3	5
124	52	37	26/06	0-1-1-0-0	Md	Md	P E	Frost	Sr	3.0-3.4	0	2	1

#	S	S	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
125	36	48	21/06	0-2-0-0-0	Md	Md	Hea & P E	Frost	Sr	2.5-2.9	8	4	2
126	32	36	18/05	1-0-0-2-0	Md	Md	Hea & P E	Frost	Fr	2.5-2.9	8	3	1
127	37	44	18/09	1-1-0-1-0	Md	Md	P E	Frost	Fr	2.5-2.9	9	2	1
128	53	55	19/05	2-1-1-2-0	Md	Md	P E	Frost	Fr	2.0-2.4	7	2	1
129	57	49	19/05	1-1-4-1-0	Md	Md	P E	Frost	So	3.0-3.4	9	5	2
130	35	34	18/11	1-0-1-0-0	Md	Md	P E	Frost	Fr	2.5-2.9	7	1	1
131	52	51	19/03	1-0-0-1-0	Md	Md	P E	Frost	Fr	2.0-2.4	12	1	1
132	28	45	20/06	0-0-1-2-0	Md	Md	P E	Frost	Jr	2.0-2.4	9	4	1
133	27	33	18/09	1-1-0-1-0	Md	Md	Elem Ed	Frost	Fr	2.5-2.9	12	1	4
134	31	36	18/05	1-0-0-1-0	Md	Md	Und	Frost	Fr	2.0-2.4	1	1	2
135	28	37	21/09	0-0-2-2-0	Md	Md	P E	Frost	Sr	2.5-2.9	4	7	3
136	31	41	19/09	3-2-0-0-0	Md	Md	Elem Ed	Frost	So	3.0-3.4	5	3	5
137	51	35	21/03	0-1-1-0-0	Md	Md	P E	Frost	Jr	2.5-2.9	1	4	4
138	32	32	22/01	2-0-1-0-0	Md	Md	Hea & P E	Frost	Sr	3.0-3.4	9	9	5
139	29	32	22/00	0-0-2-2-0	Va	Va	Hea & P E	Mad	Sr	3.0-3.4	2	10	4
140	29	37	21/05	1-1-0-1-0	Va	Va	P E	Mad	Jr	2.0-2.4	5	8	3
141	40	38	20/10	0-1-0-1-0	Pa	Va	Hea & P E	Mad	Jr	2.0-2.4	7	3	3
142	34	33	21/08	0-0-0-0-0	Va	Va	Hea & P E	Mad	Sr	3.0-3.4	0	6	3
143	36	42	18/10	0-0-0-1-0	Va	Va	P E	Mad	Fr	2.0-2.4	8	3	1
144	32	37	19/10	1-0-0-0-0	Md	Va	P E	Mad	So	2.0-2.4	9	5	1
145	27	32	19/04	0-0-1-0-0	Va	Va	P E	Mad	Fr	2.5-2.9	6	3	1
146	47	37	21/10	2-0-0-1-0	Md	Va	Hea & P E	Mad	Sr	2.5-2.9	4	8	4
147	32	42	20/04	0-0-3-1-0	Va	Va	P E	Mad	So	2.5-2.9	9	4	2
148	29	35	19/03	0-1-1-1-0	NJ	Va	Elem Ed	Mad	Fr	3.0-3.4	4	1	5
149	37	43	20/10	0-1-3-2-0	W Va	Va	Math	Mad	Jr	2.0-2.4	7	3	2
150	50	36	18/10	0-0-1-0-0	Va	Va	Elem Ed	Mad	Fr	3.0-3.4	4	1	1

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
151	31	28	21/01	1-0-0-0-0	Va	Va	P E	Mad	Jr	3.0-3.4	6	5	3
152	32	30	21/07	0-1-0-0-0	Va	Va	Hea & P E	Mad	Sr	3.0-3.4	1	11	4
153	31	33	19/01	1-0-0-0-0	Va	Va	P E	Mad	Fr	2.0-2.4	6	1	1
154	46	47	21/11	1-0-1-2-0	Va	Va	Hea & P E	Mad	Sr	2.0-2.4	5	5	2
155	35	30	20/08	0-0-3-4-0	Va	Va	Hea & P E	Mad	Jr	2.0-2.4	11	4	3
156	43	37	20/03	1-1-0-1-2	Md	Va	Hea	Mad	So	2.0-2.4	12	4	2
157	30	33	19/02	0-1-0-0-0	Va	Va	P E	Mad	Fr	2.0-2.4	10	2	1
158	57	41	21/06	1-1-0-0-0	Va	Va	Hea & P E	Mad	Sr	3.0-3.4	9	4	4
159	42	46	19/04	0-2-1-1-0	Va	Va	P E	Mad	Fr	2.5-2.9	3	2	1
160	31	35	22/03	0-1-0-0-0	Mass	Va	Hea & P E	Mad	Sr	2.5-2.9	7	6	5
161	27	30	20/09	0-1-0-0-0	Va	Va	Hea & P E	Mad	Jr	2.0-2.4	14	7	3
162	42	35	19/05	0-0-0-1-0	Md	Va	P E	Mad	So	2.5-2.9	9	3	5
163	39	45	19/09	0-0-0-0-0	Va	Va	Elem Ed	Mad	So	3.0-3.5	3	2	2
164	29	25	19/03	0-0-0-1-0	Va	Va	Hea & P E	Mad	So	2.5-2.9	12	6	2
165	50	47	20/02	1-0-1-0-0	Md	Va	Hea & P E	Mad	So	3.5-3.9	8	4	2
166	36	34	18/07	1-0-0-0-0	Va	Va	P E	Mad	Fr	2.0-2.4	0	2	1
167	62	46	20/10	0-0-0-3-0	Pa	Va	P E	Mad	Jr	1.5-1.9	8	4	7
168	46	38	22/01	0-0-0-1-0	Va	Va	His	Mad	Sr	2.0-2.4	4	8	4
169	33	32	19/11	0-1-0-1-0	Va	Va	P E	Mad	So	2.5-2.9	12	4	2
170	72	43	20/09	0-0-1-2-0	Md	Va	P E	Mad	Jr	2.0-2.4	3	5	2
171	38	25	20/04	3-5-0-0-0	Va	Va	P E	Mad	So	2.0-2.4	8	5	2
172	31	23	22/02	1-0-0-1-0	Pa	Va	H Eco Ed	Mad	Sr	2.5-2.9	14	4	8
173	34	39	20/02	0-1-0-0-0	Va	Va	Hea & P E	Mad	So	3.0-3.4	7	4	2
174	32	30	18/10	0-0-1-0-0	Va	Va	Psy	M Wash	So	2.5-2.9	0	1	1
175	28	38	21/02	1-1-0-2-0	Va	Va	Math	M Wash	Jr	3.0-3.4	5	5	1
176	52	55	19/04	0-2-0-0-0	Va	Va	Geog	M Wash	Fr	2.0-2.4	12	2	1
177	38	45	19/04	0-0-0-0-0	Va	Va	Bio	M Wash	Fr	1.5-1.9	1	2	1

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
178	42	41	21/05	1-0-2-0-0	Md	Va	Math	M Wash	Sr	3.0-3.4	9	8	8
179	28	33	20/08	0-0-0-1-0	Va	Va	His	M Wash	Jr	3.0-3.4	8	7	3
180	34	37	19/06	2-1-0-0-0	NJ	Va	Psy	M Wash	So	2.5-2.9	3	1	1
181	40	35	18/09	0-0-1-0-0	Va	Va	Spa	M Wash	Fr	2.5-2.9	9	1	1
182	30	36	20/08	1-1-1-4-0	Va	Va	Soc	M Wash	Jr	2.5-2.9	6	4	1
183	42	36	18/05	1-0-0-0-0	Md	Va	P E	M Wash	Fr	3.0-3.4	4	3	3
184	46	51	21/02	2-1-0-0-0	Md	Va	Bio	M Wash	Jr	2.5-2.9	12	3	6
185	50	51	19/08	1-0-1-0-0	Fla	Va	Eng	M Wash	So	2.5-2.9	6	3	3
186	30	37	19/01	0-0-3-2-0	Md	Va	Und	M Wash	Fr	3.0-3.4	11	3	1
187	29	30	19/08	1-0-0-0-0	NJ	Va	Math	M Wash	So	3.5-3.9	4	2	1
188	39	35	19/10	0-0-1-2-0	NY	Pa	Math	Mill	So	2.5-2.9	2	1	3
189	40	37	18/06	0-0-1-1-0	Pa	Pa	Art Ed	Mill	Fr	3.0-3.4	7	1	4
190	39	33	20/11	0-2-0-0-0	Pa	Pa	Elem Ed	Mill	Jr	2.5-2.9	4	6	3
191	53	56	19/00	1-0-1-0-0	Pa	Pa	Spa	Mill	Fr	3.0-3.4	4	1	3
192	37	54	20/05	1-0-1-0-0	Pa	Pa	Elem Ed	Mill	Jr	2.5-2.9	6	5	4
193	34	59	19/03	2-0-0-0-0	Pa	Pa	Elem Ed	Mill	Fr	2.0-2.4	6	1	4
194	34	33	21/08	0-0-0-4-0	Pa	Pa	Elem Ed	Mill	Sr	3.0-3.4	1	11	4
195	47	43	18/10	1-0-1-0-1	Pa	Pa	Elem Ed	Mill	Fr	1.5-1.9	9	2	2
196	32	34	21/08	1-0-0-1-0	Pa	Pa	Math	Mill	Sr	3.0-3.4	3	4	7
197	28	30	21/00	1-0-0-2-0	Pa	Pa	Spec Ed	Mill	Jr	3.0-3.4	6	3	2
198	49	54	19/11	0-0-2-0-0	Pa	Pa	Bio	Mill	So	2.0-2.4	7	6	2
199	23	27	18/11	1-1-0-0-0	Pa	Pa	Elem Ed	Mill	Fr	2.5-2.9	8	1	5
200	41	45	18/04	1-0-0-0-0	Pa	Pa	Elem Ed	Mill	Fr	2.5-2.9	12	1	5
201	63	37	18/08	1-3-3-4-0	Pa	Pa	Eng	Mill	Fr	2.0-2.4	2	1	3
202	43	42	20/07	0-1-0-0-0	Pa	Pa	Psy	Mill	Fr	3.0-3.4	9	2	4
203	47	43	20/01	0-0-1-1-0	Pa	Pa	Elem Ed	Mill	So	2.5-2.9	13	2	6
204	34	26	19/04	0-0-0-1-0	Pa	Pa	Ger	Mill	Fr	3.0-3.4	4	2	2

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
205	44	42	21/02	1-0-0-1-0	Pa	Pa	Elem Ed	Mill	Jr	3.0-3.4	13	6	7
206	41	39	18/09	0-1-0-3-0	Pa	Pa	Math Ed	Mill	Fr	3.5-3.9	3	2	1
207	45	34	20/06	1-1-0-0-0	Pa	Pa	Elem Ed	Mill	Jr	2.0-3.4	10	6	5
208	43	28	21/00	0-1-1-1-0	Pa	Pa	Elem Ed	Pa	Sr	3.5-3.9	3	3	5
209	35	31	20/10	2-1-0-1-0	Pa	Pa	Hea & P E	Pa	Jr	2.5-2.9	13	5	1
210	46	38	21/03	0-0-3-0-0	Pa	Pa	Hum Dev	Pa	Sr	3.0-3.4	7	6	7
211	28	29	20/02	1-0-0-1-0	Pa	Pa	Deaf Ed	Pa	So	3.0-3.4	20	4	6
212	35	39	19/01	0-0-0-0-0	Pa	Pa	Lib Arts	Pa	Fr	3.0-3.4	8	2	4
213	36	40	19/09	1-1-0-0-0	Pa	Pa	P E	Pa	So	2.0-2.4	7	3	4
214	34	36	19/00	0-0-0-1-0	Pa	Pa	Jour	Pa	Fr	2.5-2.9	15	3	6
215	38	34	19/02	0-2-0-0-0	Pa	Pa	Hea & P E	Pa	Fr	3.0-3.4	6	2	1
216	44	42	20/01	3-4-0-0-0	Pa	Pa	Art	Pa	So	MD	6	1	2
217	43	41	20/09	2-1-0-0-0	Pa	Pa	Hea & P E	Pa	Jr	2.5-2.9	7	4	5
218	41	44	22/02	5-4-0-0-0	Va	Pa	P E	Pa	Jr	2.5-2.9	15	5	1
219	51	39	20/01	0-2-0-1-0	Pa	Pa	Hum Dev	Pa	So	3.0-3.4	5	1	1
220	50	44	19/09	0-1-1-2-0	Pa	Pa	Nut	Pa	Jr	2.5-2.9	5	4	4
221	39	41	18/04	0-2-1-1-0	Pa	Pa	Agr	Pa	So	3.0-3.4	8	1	4
222	36	43	20/09	0-0-2-1-0	Del	Pa	P E	Pa	Sr	3.0-3.4	6	5	1
223	58	40	20/03	0-1-2-1-0	Pa	Pa	P E	Pa	So	3.0-3.4	10	4	6
224	34	35	22/01	2-0-1-0-0	Pa	Pa	P E	Pa	Sr	3.5-3.9	22	8	4
225	33	32	18/04	1-0-0-1-0	Pa	Pa	P E	Pa	Fr	1.5-1.9	11	3	1
226	21	32	20/05	2-2-0-2-0	Pa	Pa	Hea & P E	Pa	So	2.0-2.4	9	2	5
227	30	28	18/05	0-1-1-2-0	Pa	Pa	Med Tech	Pa	So	3.5-3.9	8	1	4
228	49	31	21/00	1-0-1-3-0	Pa	Pa	Zoo-Pre-Med	Pa	Sr	3.0-3.4	6	3	6
229	41	35	20/01	3-1-0-0-0	Pa	Pa	Fam Stu	Pa	So	2.0-2.4	3	2	5
230	45	38	21/01	0-1-0-0-0	Pa	Pa	Soc Wel	Pa	Sr	3.0-3.4	5	2	6
231	37	43	21/02	1-0-1-0-0	Pa	Pa	P E	Pa	Jr	3.0-3.4	2	1	1

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
232	33	37	19/10	0-0-2-2-0	Pa	Pa	Hea & P E	Pa	So	2.5-2.9	11	4	4
233	23	54	19/05	0-1-2-1-0	Pa	Pa	Math	Pa	So	3.0-3.4	2	2	3
234	42	38	21/08	0-1-0-0-0	Pa	Pa	Hea & P E	Pa	Sr	3.0-3.4	10	7	2
235	40	39	81/05	0-0-1-1-0	Md	Md	P E	Salis	Fr	2.0-2.4	9	1	1
236	47	43	20/07	0-0-0-1-0	Md	Md	P E	Salis	Jr	3.0-3.4	7	4	1
237	47	41	18/11	0-0-0-2-0	Md	Md	Elem Ed	Salis	Fr	3.0-3.4	6	1	1
238	29	34	19/11	0-0-0-1-0	NJ	Md	Bio	Salis	So	2.0-2.4	5	1	1
239	34	29	19/10	1-1-0-0-0	Md	Md	P E	Salis	So	3.0-3.4	8	4	1
240	45	34	19/05	2-1-1-0-0	Del	Md	P E	Salis	Fr	2.0-2.4	12	2	1
241	53	42	18/11	0-0-2-0-0	Del	Md	P E	Salis	Fr	2.5-2.9	10	2	1
242	54	45	19/06	0-0-1-1-0	Md	Md	P E	Salis	So	2.5-2.9	5	4	1
243	45	41	19/04	1-0-2-0-0	Md	Md	P E	Salis	So	2.5-2.9	7	3	1
244	34	34	20/00	1-0-1-1-0	Md	Md	P E	Salis	So	3.0-3.4	9	4	2
245	42	34	18/06	1-0-0-0-0	NJ	Md	P E	Salis	Fr	2.0-2.4	12	2	1
246	35	31	19/09	0-0-1-1-0	Md	Md	P E	Salis	So	2.0-2.4	7	1	4
247	24	25	19/05	2-1-0-1-0	Md	Md	P E	Salis	So	2.5-2.9	0	3	1
248	64	43	21/03	1-0-0-2-0	Md	Md	P E	Salis	Sr	3.0-3.4	10	15	4
249	28	45	20/04	2-0-1-1-0	Conn	Md	P E	Salis	So	2.0-2.4	6	3	1
250	40	57	18/11	0-2-0-0-0	Md	Md	P E	Salis	Fr	2.5-2.9	9	2	1
251	41	49	20/00	0-0-1-1-0	NJ	NJ	P E	Tren	So	3.0-3.4	0	5	2
252	32	38	22/00	2-0-0-0-0	NJ	NJ	Hea & P E	Tren	Sr	2.5-2.9	0	5	4
253	59	60	20/05	0-0-2-0-0	NJ	NJ	Hea & P E	Tren	So	2.0-2.4	11	5	6
254	46	43	21/05	1-0-0-1-0	NJ	NJ	Hea & P E	Tren	Sr	2.0-2.5	3	7	4
255	24	28	19/10	0-0-0-1-0	NJ	NJ	Hea & P E	Tren	So	2.5-2.9	13	6	3
256	74	33	21/05	3-1-0-0-0	NJ	NJ	Hea & P E	Tren	Sr	3.0-3.4	14	5	8
257	40	40	19/04	0-0-0-1-0	NJ	NJ	Hea & P E	Tren	Fr	2.0-2.4	8	2	1
258	33	38	19/03	2-1-1-2-0	NJ	NJ	Hea & P E	Tren	Fr	2.0-2.4	9	2	1

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
259	27	25	19/00	0-0-2-0-0	NJ	NJ	Lib Sci	Tren	Fr	3.5-3.9	11	2	1
260	38	50	22/01	0-1-3-3-0	NJ	NJ	Hea & P E	Tren	Sr	3.0-3.4	5	5	6
261	39	43	19/03	0-0-1-2-0	NJ	NJ	Chem Ed	Tren	Fr	3.0-3.4	9	2	1
262	31	42	21/07	0-0-0-0-0	NJ	NJ	Hea & P E	Tren	Sr	2.5-2.9	0	4	4
263	28	31	19/03	0-0-2-3-0	NJ	NJ	P E	Tren	Fr	3.0-3.4	0	2	2
264	32	34	18/07	0-0-3-3-0	NJ	NJ	P E	Tren	Fr	2.5-2.9	3	2	1
265	29	38	18/06	0-0-1-0-0	NJ	NJ	Hea & P E	Tren	Fr	1.5-1.9	4	2	1
266	26	35	21/09	0-0-1-1-0	NJ	NJ	Hea & P E	Tren	Sr	2.5-2.9	3	3	3
267	45	50	20/01	2-0-1-0-0	NJ	NJ	P E	Tren	So	2.5-2.9	0	1	1
268	45	36	18/06	0-2-1-3-0	NJ	NJ	Hea & P E	Tren	Fr	2.5-2.9	9	3	1
269	42	45	19/04	0-0-2-1-0	NJ	NJ	Hea & P E	Tren	So	2.5-2.9	14	5	1
270	38	50	21/09	0-0-0-1-0	NJ	NJ	Hea & P E	Tren	Sr	2.0-2.4	11	12	6
271	45	34	22/06	0-0-1-0-0	NJ	NJ	Hea & P E	Tren	Sr	3.0-3.4	4	4	3
272	41	40	19/05	0-0-0-0-0	NJ	NJ	Hea & P E	Tren	So	3.0-3.4	9	5	2
273	38	40	19/11	0-0-2-2-0	NJ	NJ	Hea & P E	Tren	So	3.0-3.4	1	3	1
274	47	38	19/05	0-0-0-2-0	NJ	NJ	MD	Tren	Fr	2.5-2.9	12	1	1
275	37	33	18/06	0-1-1-0-0	NJ	NJ	Hea & P E	Tren	Fr	2.0-2.4	8	3	1
276	42	47	18/06	0-0-1-0-0	NJ	NJ	P E	Tren	Fr	2.0-2.4	9	2	5
277	51	45	20/01	0-1-1-0-0	NJ	NJ	Hea & P E	Tren	So	2.5-2.9	3	4	2
278	43	36	23/02	1-1-1-3-0	NJ	NJ	Psy	Tren	Sr	2.5-2.9	0	8	2
279	39	26	19/10	0-0-2-1-0	Pa	NJ	Hea & P E	Tren	So	2.5-2.9	8	3	4
280	32	34	20/10	2-1-1-0-0	NJ	NJ	Hea & P E	Tren	Jr	3.5-3.9	1	3	3
281	53	44	20/05	1-0-0-0-0	Md	Md	P E	Md	Jr	2.0-2.4	9	6	1
282	35	35	20/11	0-1-0-2-0	Md	Md	P E	Md	So	3.0-3.4	11	4	6
283	22	29	19/04	0-1-1-0-0	Md	Md	P E	Md	Fr	1.5-1.9	10	2	1
284	26	28	20/08	0-0-0-0-0	Md	Md	P E	Md	Jr	2.5-2.9	7	6	6
285	29	30	18/11	2-1-5-0-0	Pa	Md	Nur	Md	Fr	2.0-2.4	10	3	4

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
286	41	48	19/00	0-0-1-0-0	Md	Md	Elem Ed	Md	So	2.0-2.4	11	5	1
287	46	39	20/00	0-0-1-1-0	Md	Md	P E	Md	So	2.0-2.4	8	4	3
288	43	33	21/05	2-1-0-0-0	Md	Md	P E	Md	Jr	2.0-2.4	11	4	2
289	49	47	19/11	0-1-1-1-0	Md	Md	Nur	Md	So	2.5-2.9	8	2	6
290	35	45	19/08	1-1-0-0-0	Md	Md	Nur	Md	So	2.5-2.9	6	3	3
291	34	36	MD	0-0-1-0-0	Md	Md	P E	Md	Sr	2.5-2.9	0	1	1
292	37	48	18/05	0-1-1-0-0	Md	Md	P E	Md	Fr	3.0-3.4	11	2	1
293	30	36	18/10	0-0-5-1-0	Md	Md	P E	Md	Fr	2.5-2.9	4	2	1
294	43	48	19/02	1-1-0-0-0	Md	Md	P E	Md	Fr	2.0-2.4	12	2	1
295	32	32	21/08	1-1-0-0-1	Md	Md	P E	Md	Sr	3.0-3.4	0	12	4
296	36	32	22/02	0-2-1-0-0	Md	Md	P E	Md	Sr	2.5-2.9	0	7	2
297	29	27	20/07	0-1-0-0-0	Md	Md	Eng	Md	Jr	3.0-3.4	5	3	4
298	31	31	19/03	1-0-0-0-0	Md	Md	P E	Md	Fr	3.0-3.4	7	2	4
299	37	30	21/11	0-0-1-1-0	Tex	Md	P E	Md	Sr	2.0-2.4	14	8	5
300	45	44	23/01	0-0-0-1-0	Md	Md	Hea Ed	Md	Sr	2.5-2.9	14	9	4
301	35	34	19/04	3-0-0-1-0	Md	Md	P E	Md	Fr	1.5-1.9	2	2	3
302	46	32	22/02	0-0-1-0-0	Md	Md	P E	Md	Sr	2.5-2.9	2	10	6
303	43	43	18/04	0-0-1-1-0	NJ	Md	P E	Md	Fr	3.0-3.4	1	1	1
304	44	35	21/00	0-0-1-0-0	Md	Md	P E	Md	Jr	2.0-2.4	3	6	3
305	37	42	20/09	1-3-2-1-0	Md	Md	P E	Md	Jr	2.0-2.4	0	9	3
306	26	37	18/10	0-0-1-1-0	Pa	Md	H Eco Ed	Md	So	3.0-3.4	12	3	6
307	35	33	20/03	0-0-0-0-0	Md	Md	P E	Md	So	2.0-2.4	0	1	1
308	36	40	22/00	0-2-1-2-0	NJ	Md	P E	Md	Sr	2.5-2.9	8	2	2
309	56	48	20/06	3-0-0-0-0	Va	Va	P E	W Hamp	So	3.0-3.4	4	5	2
310	56	43	20/06	0-1-0-0-0	Va	Va	Bio	W Hamp	Jr	3.5-3.9	6	6	3
311	43	41	19/11	0-0-4-0-0	Va	Va	Math	W Hamp	So	2.5-2.9	2	5	2
312	45	58	20/03	1-0-1-0-0	Va	Va	P E	W Hamp	Jr	1.5-1.9	0	4	2

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
313	49	51	20/05	0-0-1-1-0	Va	Va	P E	W Hamp	So	2.5-2.9	5	4	2
314	45	42	19/06	0-0-1-0-0	Va	Va	Elem Ed	W Hamp	Jr	3.5-3.9	0	1	1
315	31	31	21/07	0-0-1-0-0	Va	Va	P E	W Hamp	Sr	2.5-2.9	11	16	2
316	35	32	20/05	2-0-0-0-0	Va	Va	Eng	W Hamp	So	2.5-2.9	2	MD	0
317	43	30	19/11	2-1-1-1-0	Fla	Va	P E	W Hamp	So	2.5-2.9	0	7	2
318	40	25	18/08	0-0-1-4-0	Va	Va	Pol Sci	W Hamp	Fr	2.5-2.9	9	3	1
319	41	35	21/07	0-1-1-0-0	Va	Va	Sp & Rel	W Hamp	Sr	2.5-2.9	0	5	4
320	48	30	19/08	0-0-1-2-0	Va	Va	Bio	W Hamp	So	3.5-3.9	16	6	2
321	43	37	19/10	0-0-1-1-0	Va	Va	P E	W Hamp	So	3.0-3.4	6	4	2
322	47	31	19/08	0-0-1-0-0	Del	Va	Math	W Hamp	So	3.0-3.4	0	3	2
323	38	33	20/00	0-0-1-0-0	Va	Va	Acc	W Hamp	So	2.5-2.9	0	1	1
324	46	37	20/00	0-0-0-0-0	Va	Va	Chem	W Hamp	So	3.0-3.4	0	1	1
325	40	29	19/10	0-0-0-1-1	Va	Va	P E	W Hamp	So	3.5-3.9	13	6	2
326	64	54	20/06	0-1-2-0-0	Va	Va	His	W Hamp	Jr	3.5-3.9	3	6	3
327	33	32	19/02	1-0-0-0-0	Va	Va	P E	W Hamp	Fr	2.5-2.9	8	4	1
328	41	34	20/08	0-0-3-0-0	Va	Va	P E	W Hamp	Jr	3.0-3.4	0	8	3
329	57	40	19/10	0-0-0-1-0	Va	Va	P E	W Hamp	So	2.5-2.9	0	1	1

WOMEN TENNIS PLAYERS

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
330	41	32	23/05	2-0-3-0-0	NC	NC	P E	App	Sr	2.5-2.9	13	6	5
331	42	28	21/02	1-1-0-0-0	Del	NC	Pri Ed	App	Jr	2.5-2.9	16	6	2
332	50	31	19/03	1-0-2-0-0	NC	NC	P E	App	So	2.5-2.9	6	1	4
333	32	29	21/10	1-2-0-0-0	NC	NC	P E	App	Sr	2.5-2.9	5	3	5
334	54	42	19/10	0-0-1-0-0	NC	NC	P E & Hea	App	Jr	3.5-3.9	4	3	2
335	40	50	21/05	1-0-1-0-0	NC	NC	Pr Ed	App	So	3.0-3.4	4	1	1
336	43	41	18/09	0-1-1-0-0	NC	NC	Spec Ed	Atl Chr	Fr	2.5-2.9	3	1	4
337	41	42	20/11	0-2-0-0-0	Va	NC	MD	Atl Chr	Fr	2.5-2.9	0	1	1
338	39	32	21/05	0-0-2-0-0	NC	NC	P E	Atl Chr	Jr	3.0-3.4	3	3	3
339	44	30	20/11	1-0-2-0-0	Va	NC	P E	Atl Chr	Jr	3.0-3.4	1	2	1
340	39	35	18/11	1-1-0-0-0	NC	NC	P E	Atl Chr	Fr	2.5-2.9	1	1	2
341	37	40	18/11	1-0-1-0-0	Minn	Me	Md	Col	Fr	4.0	4	1	3
342	36	35	19/06	0-0-1-1-0	Cal	Me	Eng	Col	Fr	2.5-2.9	2	1	3
343	53	55	19/01	1-1-0-0-0	Va	Me	His	Col	Fr	2.5-2.9	7	1	1
344	37	34	18/11	2-0-0-2-0	Minn	Me	Psy	Col	Fr	2.5-2.9	13	3	2
345	41	39	20/03	1-1-1-0-0	Md	Me	Art	Col	So	2.5-2.9	2	2	2
346	24	36	19/08	1-0-1-0-0	Ia	Me	Psy	Col	So	2.5-2.9	4	2	6
347	36	32	18/09	1-4-2-1-0	SC	Me	Geol	Col	Fr	3.0-3.4	9	3	5
348	43	36	18/10	1-0-0-1-0	Conn	Me	Art	Col	Fr	3.5-3.9	11	2	5
349	25	28	18/09	1-0-1-1-0	Me	Me	Soc	Col	Fr	2.5-2.9	3	1	3
350	38	38	19/06	0-1-1-1-0	Pa	Me	His	Col	So	3.0-3.4	12	3	5
351	53	46	20/08	0-0-1-2-0	NJ	Me	Eng	Col	Jr	2.5-2.9	3	3	3
352	33	58	19/04	0-0-3-1-0	Conn	Me	Govt	Col	Fr	2.0-2.4	5	1	4
353	45	52	20/01	0-1-1-1-0	NY	NH	MD	Col Jr	So	2.0-2.4	6	2	5
354	33	31	19/09	0-0-1-1-0	RI	NH	Ed	Col Jr	So	2.5-2.9	11	4	6
355	40	43	18/10	0-1-0-0-0	NJ	NH	Und	Col Jr	Fr	2.0-2.4	9	2	5

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
356	35	44	19/11	1-1-0-1-0	Conn	NH	Lib Arts	Col Jr	So	2.5-2.9	3	2	5
357	48	35	18/10	1-0-1-0-0	NC	NH	Sci	Col Jr	Fr	2.5-2.9	4	1	2
358	47	43	20/01	0-1-1-0-0	Ore	NH	Bio	Col Jr	So	3.0-3.4	11	3	6
359	25	31	20/01	0-0-1-1-0	NY	NH	Lib Arts	Col Jr	So	2.5-2.9	15	4	2
360	45	46	18/05	1-0-0-0-0	RI	NH	Lib Arts	Col Jr	Fr	2.0-2.4	4	2	2
361	27	29	18/07	0-1-3-0-0	Mass	NH	Lib Arts	Col Jr	Fr	2.5-2.9	6	2	4
362	36	36	18/10	0-2-0-0-0	DC	NH	P E	Col Jr	Fr	2.0-2.4	1	1	1
363	46	32	19/05	1-1-1-1-0	Ca	NH	Lib Arts	Col Jr	Fr	2.0-2.4	MD	MD	MD
364	39	35	18/10	1-1-0-0-0	Pa	NH	Lib Arts	Col Jr	Fr	2.5-2.9	9	1	5
365	41	38	19/05	0-1-1-0-0	Conn	NH	Lib Arts	Col Jr	Fr	MD	11	2	4
366	57	38	18/08	1-1-0-0-0	Conn	NH	Bio	Col Jr	Fr	2.5-2.9	3	1	4
367	46	49	19/04	0-0-1-2-0	RI	NH	Lib Arts	Col Jr	Fr	2.5-2.9	12	2	4
368	33	33	19/04	0-0-1-0-0	Conn	NH	Chi Psy	Col Jr	Fr	2.5-2.9	3	1	4
369	41	33	19/09	2-0-0-0-0	Ala	SC	Bio	Con	So	2.5-2.9	9	3	5
370	29	25	20/06	2-1-0-0-0	Ala	SC	Rel	Con	So	2.5-2.9	2	2	4
371	25	34	19/09	0-0-2-0-0	Ga	SC	Psy Deaf	Con	Jr	2.5-2.9	8	2	8
372	32	33	18/09	0-0-0-1-0	Ga	SC	Mus Ed	Con	Fr	2.5-2.9	9	2	6
373	36	37	18/09	1-0-0-0-0	SC	SC	Soc	Con	Fr	2.5-2.9	5	2	5
374	49	35	19/02	0-0-1-0-0	Miss	SC	Und	Con	Fr	2.0-2.4	6	1	7
375	33	37	20/02	0-1-0-1-0	NC	SC	Art His	Con	So	3.5-3.9	0	1	1
376	33	36	19/11	0-0-0-1-0	Pa	NY	Soc	Cor	So	2.5-2.9	9	5	5
377	34	34	20/03	3-2-5-4-0	Md	NY	Bio-Pre-Vet	Cor	Jr	3.0-3.4	16	7	6
378	29	29	19/03	1-1-0-2-0	Pa	NY	Bio	Cor	Fr	3.0-3.4	11	1	5
379	31	32	18/03	1-0-1-1-0	NY	NY	Eng	Cor	Fr	3.0-3.4	2	1	3
380	33	27	19/10	1-3-2-2-0	Pa	NY	Eng Ed	Cor	So	3.0-3.4	14	2	6
381	37	40	19/00	2-1-0-0-0	NC	SC	Chem	Fur	Fr	3.5-3.9	0	2	1
382	22	28	21/10	0-0-1-1-0	Fla	SC	P E	Fur	Sr	3.0-3.4	3	7	7

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
383	34	33	18/10	1-0-0-0-0	NC	SC	Und	Fur	Fr	2.5-2.9	5	1	3
384	29	21	19/01	1-0-0-0-0	SC	SC	Bio-Pre-Med	Fur	Fr	3.0-3.4	6	2	3
385	36	50	21/05	1-0-0-0-0	Ga	SC	MD	Fur	MD	3.0-3.4	5	3	6
386	55	39	18/11	0-0-0-2-0	Tenn	SC	Chem-Pre-Med	Fur	Fr	2.5-2.9	3	1	4
387	33	41	18/07	0-0-1-0-0	SC	SC	P E	Fur	Fr	2.5-2.9	1	1	1
388	42	42	19/01	0-0-0-1-0	SC	SC	Und	Fur	Fr	3.0-3.4	4	1	4
389	35	38	19/05	3-0-0-0-0	Pa	SC	P E	Fur	So	2.5-2.9	9	6	1
390	36	34	21/07	0-0-0-0-0	Va	Va	Psy	Mad	Sr	3.0-3.4	0	3	1
391	50	44	21/01	0-0-2-1-0	Va	Va	P E	Mad	Jr	2.5-2.9	12	7	6
392	38	37	22/01	0-0-1-2-0	Md	Va	P E	Mad	Sr	2.5-2.9	1	5	1
393	39	35	21/03	1-0-1-0-0	NY	Va	P E	Mad	Jr	1.5-1.9	10	2	4
394	39	43	22/03	0-1-0-0-0	Md	Va	Elem Ed	Mad	Sr	2.0-2.4	6	4	2
395	47	29	19/11	0-0-0-1-0	Va	Va	P E	Mad	Fr	3.0-3.4	11	2	1
396	28	36	18/06	0-0-1-0-0	Md	Va	Spec Ed	Mad	Fr	2.5-2.9	4	1	5
397	28	22	21/07	1-1-1-1-0	Va	Va	Elem Ed	Mad	Jr	2.0-2.4	8	2	2
398	28	40	21/08	2-1-1-0-0	Pa	Va	P E	Mad	Jr	3.0-3.4	5	3	3
399	59	57	20/05	0-0-1-0-0	Va	Va	P E	Mad	Jr	3.0-3.4	0	8	2
400	60	52	19/03	1-0-0-0-0	Va	Va	P E	Mad	Fr	2.5-2.9	9	3	1
401	27	44	19/02	0-0-3-3-0	Va	Va	His	Mad	Fr	2.5-2.9	2	1	2
402	23	31	20/11	2-0-0-0-0	Me	Va	P E	Mad	Jr	2.0-2.4	8	3	3
403	34	36	22/01	0-1-0-0-0	Md	Va	P E	Mad	Sr	2.5-2.9	9	8	5
404	31	52	19/01	1-1-1-1-0	Pa	Pa	Elem Ed	Pa	Fr	2.0-2.4	5	1	5
405	29	23	20/00	2-0-0-0-0	Pa	Pa	MD	Pa	Fr	3.0-3.4	3	5	2
406	43	48	20/03	0-0-0-1-0	Pa	Pa	Math & P E	Pa	So	3.5-3.9	3	2	1
407	35	39	18/11	1-2-0-0-0	Pa	Pa	Reh Ed	Pa	So	3.0-3.4	6	1	5
408	33	30	19/04	1-1-0-0-0	Md	Pa	Hum Dev	Pa	Fr	3.0-3.4	6	3	1

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
409	26	35	22/01	0-0-2-1-0	Pa	Pa	P E	Pa	Sr	2.5-2.9	3	6	7
410	31	31	20/00	0-0-1-1-0	Pa	Pa	Bio	Pa	So	3.0-3.4	0	2	2
411	36	36	20/01	0-0-0-2-0	Pa	Pa	Pre-Law	Pa	So	2.5-2.9	9	1	5
412	25	28	18/11	3-0-0-0-0	Pa	Pa	Soc	Pa	Fr	4.0	0	2	1
413	36	43	17/09	2-0-0-0-0	DC	Pa	Pol Sci	Pa	Fr	3.5-3.9	6	2	3
414	39	47	18/11	0-1-0-1-0	Pa	Pa	P E	Pa	Fr	3.0-3.4	3	1	4
415	28	25	20/00	1-0-0-0-0	Pa	Pa	Elec Eng	Pa	So	2.0-2.4	0	3	2
416	31	38	17/05	0-0-0-1-0	NC	NC	MD	St. M	Fr	2.5-2.9	0	1	1
417	24	25	18/06	1-0-1-1-0	NC	NC	MD	St. M	So	3.0-3.4	2	1	2
418	46	31	16/06	0-0-0-1-0	NC	NC	MD	St. M	Fr	3.5-3.9	2	1	2
419	31	38	20/05	0-1-1-0-0	NC	NC	Bio	St. M	So	3.0-3.4	5	2	4
420	26	33	17/01	1-2-0-1-0	NC	NC	MD	St. M	Fr	3.5-3.9	5	1	2
421	39	45	18/04	1-0-0-0-0	NC	NC	MD	St. M	So	4.0	1	1	1
422	24	29	20/11	4-0-0-0-0	Mass	Mass	MD	Sal	Jr	3.0-3.4	4	4	2
423	29	31	37/02	0-0-0-1-0	Mass	Mass	Elem Ed	Sal	Jr	2.5-2.9	12	4	4
424	42	42	21/07	0-1-0-1-0	Mass	Mass	Elem Ed	Sal	Sr	3.0-3.4	7	3	3
425	26	31	21/02	1-0-0-0-0	Mass	Mass	Elem Ed	Sal	Sr	2.5-2.9	4	4	4
426	31	37	39/06	2-0-0-0-0	Mass	Mass	Elem Ed	Sal	Sr	3.0-3.4	12	4	4
427	29	29	24/03	2-0-1-1-1	Mass	Mass	Soc St	Sal	Sr	2.5-2.9	9	2	5
428	23	24	21/06	1-0-0-0-0	Mass	Mass	Bus Ad	Sal	Sr	3.5-3.9	1	3	3
429	48	30	18/11	0-0-1-0-0	Va	Va	Spa	Sw Br	Fr	3.0-3.4	6	1	3
430	31	37	19/07	1-0-0-2-0	Fra	Va	Eng	Sw Br	Jr	MD	MD	MD	MD
431	57	46	19/02	0-0-2-1-0	La	Va	Eng	Sw Br	Fr	3.0-3.4	3	1	4
432	37	56	18/11	1-2-0-0-0	Va	Va	Und	Sw Br	Fr	2.5-2.9	9	1	6
433	36	29	21/11	1-0-1-0-0	Ga	Va	Math	Sw Br	Sr	3.0-3.4	6	4	9
434	28	32	19/08	0-1-0-0-0	Va	Va	Art His	Sw Br	Fr	3.0-3.4	10	1	5
435	31	31	18/03	0-1-2-0-0	Md	Va	Und	Sw Br	Fr	2.5-2.9	3	2	4

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
436	49	41	18/07	0-0-4-1-0	Ky	Va	Am St	Sw Br	Fr	2.0-2.4	7	1	5
437	39	41	21/03	0-0-0-1-0	NY	Va	Eco	Sw Br	Jr	2.5-2.9	3	3	6
438	39	35	21/10	0-0-1-0-1	Ala	Va	Chem	Sw Br	Sr	3.5-3.9	6	5	7
439	63	36	19/01	0-0-0-3-0	La	Va	Ed	Sw Br	Fr	3.0-3.4	15	1	5
440	30	29	18/11	0-0-3-0-0	Minn	Va	Und	Sw Br	Fr	3.5-3.9	1	1	1
441	36	36	21/01	0-1-0-0-0	NY	Va	Tex Mark	Md	Jr	3.0-3.4	5	6	5
442	31	28	20/08	1-1-0-0-0	Md	Va	P E	Md	Jr	2.0-2.4	6	1	4
443	28	28	21/11	0-1-0-0-0	NJ	Va	Elem Ed	Md	Sr	2.5-2.9	0	1	1
444	29	31	19/11	1-3-0-0-0	Md	Md	Govt & Pol	Md	So	3.0-3.4	8	5	4
445	20	21	20/10	0-3-0-0-0	Md	Md	Mark	Md	Jr	2.0-2.4	0	2	2
446	22	39	22/10	1-0-1-0-0	Md	Md	Rec	Md	Jr	2.5-2.9	8	3	6
447	50	34	19/10	0-2-0-0-0	Md	Md	P E	Md	So	2.0-2.4	12	3	5
448	32	38	18/09	1-2-0-3-0	Md	Md	Und	Md	Fr	3.0-3.4	3	1	4
449	30	31	19/06	0-1-1-0-0	Md	Md	Nur	Md	So	2.0-2.4	10	6	2
450	35	48	19/02	2-0-0-0-0	Md	Md	Jour	Md	Fr	2.0-2.4	4	1	3
451	46	36	19/11	0-0-0-1-0	Md	Md	P E	Md	So	3.0-3.4	2	2	3
452	30	36	22/02	0-0-1-1-0	Md	Md	Eng	Md	Sr	3.5-3.9	7	9	7
453	35	43	19/03	1-2-1-2-0	Md	Md	P E	Md	Fr	3.0-3.4	1	1	2
454	50	56	18/08	1-0-0-0-0	Md	Md	P E	Md	Fr	3.0-3.4	8	1	4
455	51	53	20/00	1-0-2-1-0	Md	Md	Bio-Chem	Md	Jr	3.5-3.9	0	2	2
456	45	51	18/10	0-1-1-0-0	Mass	Mass	P E	Mass	Fr	2.5-2.9	9	1	3
457	48	38	18/06	2-3-1-1-0	Del	Mass	His	Mass	Fr	4.0	11	1	4
458	34	32	MD	2-2-1-2-0	Del	Mass	Geog	Mass	So	3.5-3.9	10	2	6
459	37	25	21/03	1-0-2-2-0	Mass	Mass	Elem Ed	Mass	Jr	3.0-3.4	9	5	6
460	33	31	19/11	2-1-1-0-0	Mass	Mass	An Sci	Mass	So	2.5-2.9	9	4	2
461	46	36	20/11	0-1-1-0-0	Mass	Mass	P E	Mass	Jr	2.5-2.9	2	1	1
462	28	30	22/07	0-0-1-1-0	Mass	Mass	P E	Mass	Sr	3.0-3.4	7	4	4

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
463	47	53	20/03	0-1-0-0-0	Mass	Mass	Rec	Mass	So	2.5-2.9	12	2	2
464	38	33	20/03	1-0-0-1-0	Mass	Mass	MD	Mass	Jr	2.5-2.9	9	4	4
465	44	53	18/03	1-0-0-0-0	Mass	Mass	MD	Mass	Fr	MD	4	1	3
466	34	30	19/03	0-2-0-0-0	Mass	Mass	P E	Mass	So	3.5-3.9	9	1	4
467	24	28	20/03	1-0-0-0-0	Va	NC	P E	UNC-G	So	2.0-2.4	11	2	5
468	59	49	22/05	0-0-0-0-0	NC	NC	P E	UNC-G	Sr	2.5-2.9	8	4	8
469	71	46	19/01	1-0-0-0-0	NC	NC	P T	UNC-G	Jr	2.5-2.9	1	1	2
470	41	40	20/07	0-0-2-0-0	NC	NC	Math	UNC-G	Jr	2.5-2.9	9	8	3
471	29	39	18/10	1-1-0-1-0	Pa	NC	P E	UNC-G	Fr	2.5-2.9	13	3	5
472	29	34	21/02	0-0-0-0-0	NC	NC	Math	UNC-G	Jr	3.5-3.9	6	4	6
473	25	46	19/03	1-0-1-1-0	SC	NC	P E	UNC-G	Fr	2.0-2.4	6	3	2
474	33	35	18/09	0-1-0-1-0	Va	NC	Intl Law	UNC-G	Fr	3.0-3.4	10	1	2
475	27	41	20/01	0-0-3-0-0	NC	NC	Math	UNC-G	So	1.5-1.9	3	2	4
476	48	58	21/08	1-1-0-0-0	Fla	NC	P E	UNC-G	Sr	2.0-2.4	10	6	2
477	54	54	18/05	0-1-0-0-0	NC	NC	Pol Sci	UNC-G	Fr	2.0-2.4	1	1	2
478	26	20	21/08	0-1-1-1-0	Va	NC	Phil	W For	Sr	2.5-2.9	5	10	4
479	52	39	18/11	0-1-0-1-0	Va	NC	P E	W For	Fr	3.5-3.9	3	2	3
480	31	31	18/05	0-0-1-0-0	Fla	NC	Und	W For	Fr	2.5-2.9	4	1	5
481	30	34	20/04	1-0-1-3-0	NC	NC	Int Ed	W For	So	2.5-2.9	0	1	1
482	24	32	18/11	2-1-1-1-0	NC	NC	P E	W For	Fr	2.5-2.9	19	4	3
483	44	25	18/08	1-1-0-0-0	Fla	NC	Psy	W For	Fr	2.0-2.4	4	1	4
484	27	29	21/01	0-1-0-0-0	SC	NC	P E	W For	Jr	3.0-3.4	6	3	3
485	31	29	21/09	0-0-1-1-0	NC	NC	Bus Ad	W For	Sr	2.5-2.9	6	4	5
486	42	40	18/05	2-1-0-1-0	Mass	Mass	Elem Ed	West	Fr	3.0-3.4	6	1	5
487	39	40	18/05	0-0-0-0-0	Mass	Mass	Art	West	Fr	2.5-2.9	6	1	5
488	45	51	20/02	0-0-1-1-0	Mass	Mass	Eng	West	So	2.5-2.9	5	2	6
489	44	39	19/09	0-0-3-1-0	Mass	Mass	Psy	West	So	3.0-3.4	2	2	2

#	S	T	Age	SO	HS	SS	MAS	Col	C	GPA	PISE	PICE	PCE
490	30	34	18/06	0-1-0-1-0	Mass	Mass	His	West	Fr	2.5-2.9	2	1	3
491	26	33	20/05	0-0-2-1-0	Ky	Mass	Elem Ed	West	Jr	3.0-3.4	6	3	6
492	34	36	20/10	0-1-2-0-0	Mass	Mass	Art	West	So	2.5-2.9	8	1	1
493	60	33	19/08	2-0-0-0-0	NJ	Va	Math	W and M	So	2.5-2.8	0	4	2
494	31	35	18/03	0-0-0-3-0	Cal	Va	Und	W and M	Fr	3.5-3.9	2	1	3
495	46	44	18/11	0-0-2-0-0	Va	Va	His	W and M	Fr	2.5-2.9	5	1	5
496	38	32	18/11	1-5-0-2-0	Va	Va	MD	W and M	Fr	2.0-2.4	MD	MD	MD
497	44	38	20/09	1-2-0-3-0	Va	Va	Math	W and M	Jr	2.5-2.9	3	4	5
498	33	31	19/01	0-1-0-0-0	Va	Va	Bio	W and M	Fr	2.5-2.9	2	1	3
499	53	43	22/02	0-0-1-2-0	Va	Va	Acc	W and M	Sr	2.0-2.4	8	4	8