A COMPARISON OF THE USE OF FOUR SPECIFIC DEFENSE MECHANISMS AMONG COLLEGE WOMEN VARSITY ATHLETES AND NON-ATHLETES

A THESIS

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We hereby recommend that the Thesis prepared under our supervision by Evelyn Pack entitled A COMPARISON OF THE USE OF FOUR SPECIFIC DEFENSE MECHANISMS AMONG COLLEGE WOMEN VARSITY ATHLETES AND NON-ATHLETES

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CHAPTER I

INTRODUCTION TO THE STUDY

In the animal world of survival and social control, it can be established that the entire processes of living are brought about basically by physical dominance. The strongest in will and physical traits becomes the leader, and animals, when faced with a particular stress, are usually confronted with some form of physical tests or violence in defense of their actions. Man being superior mentally and culturally, however, has social customs to direct his daily living patterns. In order to obtain desired behavior reactions during tensions and anxiety-ridden circumstances, man has acquired automatic responses--defense mechanisms--both conscious and unconscious, most of which have been fostered by these social customs.[1]

Over the years of man's existence, it has been discovered that certain tension producing obstacles can be hurdled by utilization of defense mechanisms as modes of adjustments, thereby obtaining a release of frustration

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[1]Russell Eisenman, "Scapegoating and Social Control," Journal of Psychology, LXI (November, 1965), p. 209.

arising from the obstacles. Politan stated that "because tension and anxiety are very unpleasant feelings, the ego, to reduce or eliminate them, makes use of certain techniques (mechanisms) . . ."[1] Excuses are given in defense of certain reactions; blame for one's inadequacies is cast upon others; and daydreaming and complete extraction for short periods from tension-producing situations are used to save face and to defend the ego.

Among the ancient Hebrews, atonement for their sins against God was gained through the use of a goat. According to the Book of Leviticus (16:8, 10, and 16), the Priest would ceremonially place his hands on a pure white goat and confess the sins and injustices committed by the people of Israel. The goat was then driven into the wilderness, thus the origin of the term "scapegoat." By casting their sins and injustices upon the goat, the Hebrews felt cleansed and relieved of their frustrations and disappointments. Similar practices may be found in various areas today.[2, 3, 4] Anyone may become the object of displaced frustrations, and all

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[1]Phillip Polatin, M. D., "Mental Mechanisms," The Encyclopedia of Mental Health (New York: Division of Franklin Watts, Inc., 1963), IV, 1156.

[2]Joseph Shipley, Dictionary of Word Origins (New York: Philosophical Library, 1945), III.

[3]Horace and Ava English, A Comprehensive Dictionary of Psychological and Psychoanalytical Terms (New York: Longmans, Green and Co., 1958), p. 477.

[4]Eisenman, "Scapegoating," p. 204.

people use them to their own convenience, both consciously and unconsciously.[1]

As a major mode of maintaining equilibrium, defense mechanisms are used by all individuals and serve many purposes. They explain distress and provide relief, making the individual mentally comfortable; they gratify emotional needs, "pacify the warring factions in the unconscious minimising or eliminating the tensions and anxieties brought about by unacceptable desires that must be kept submerged," and they also ease pressures of daily living which threaten to overwhelm the equilibrium.[2]

Defense mechanisms are learned modes of adjustment. These mechanisms operate, for the most part, unconsciously to alleviate mental distress.[3] Because these forms of adjustment are greatly influenced by the family environment, some tend to be used more often than others.[4] To many individuals these mechanisms are helpful in that they may cultivate creativity, productivity, or some other desirable motivation by simply removing the tension or anxiety. On the other hand, over use of the defense mechanisms may interfere with daily adjustments and adequate coping with life situations.[5]

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[1]Polatin, "Mental Mechanisms," p. 1162.

[2]Ibid., p. 1154. [3]Ibid.

[4]Allan R. Weinstock, "Family Environment and the Development of Defense and Coping Mechanisms," Journal of Personality and Social Psychology, V (1967), 67.

[5]Polatin, "Mental Mechanisms," p. 1163.

Personal observation, as a teacher and coach of women's athletic teams, indicates that many people associated with physical education and athletics believe that women athletes have learned to use mechanisms in a variety of "stress" situations to the benefit of their daily lives. It is hypothesized that athletes have learned to face many problems much more comprehensively than non-athletes as a result of the intensity and number of "stress" situations which they have had to endure during competition and competitive training.

Statement of the Problem

The problem of this study was to determine the differences between women athletes and non-athletes in their use of four selected defense mechanisms as measured by the Emo Questionnaire. The study involved forty-eight women students enrolled in the Southern State College in Magnolia, Arkansas, during the academic year of 1968-1969.

Definitions and/or Explanations of Terms

For the purpose of clarification, the following definitions and/or explanations of terms have been established for use in the study:

Defense Mechanism: The investigator accepted the following explanation:

> Defense mechanism, more completely called an "ego defense mechanism," is an interchangeable term for mental mechanism. It is also called because the ego defends itself against unconscious conflicts by using many types of techniques in order to minimize or dispel the

anxiety caused by such conflicts.[1]

The four selected defense mechanisms examined in this study were projection, rationalization, unreality, and withdrawal.

Unreality: For the purpose of this study, the investigator accepted the following statement of Baehr and Baehr who define unreality as "avoiding real problems by unintentionally drifting into unreality and bizarre experiences."[2]

Projection: The investigator accepted the following statement of Baehr and Baehr who define projection as "experiencing one's own unconscious hostility, desire to hurt, and tendencies to malinger as being the intentional motives of others."[3]

Rationalization: The investigator accepted Baehr and Baehr's definition as "shifting responsibility for one's own failures and defects to other persons or to the situation."[4]

Withdrawal: The investigator accepted the statement of Baehr and Baehr who define withdrawal as a "desire to reduce frustration and anxiety by deliberate withdrawal from contacts and activities."[5]

Athlete: For the purpose of this study, an athlete is defined as an individual who is an active participant in one of three varsity sports, swimming, basketball, and tennis,

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[1] Ibid., p. 1154.

[2] George D. Baehr and Melany E. Baehr, Emo Questionnaire Test Administration Manual (Chicago: The University of Chicago, 1959), p. 6.

[3] Ibid. [4] Ibid. [5] Ibid.

offered for women at Southern State College in Magnolia, Arkansas.

Non-Athlete: For the purpose of this study, a non-athlete is defined as an individual who has never participated nor tried out for any varsity sport at any time during enrollment in either high school or college.

Stress Situation: For the purpose of this study, the term "stress situation" was defined as the period during which final examinations were held in all college courses.

Delimitations of the Study

The study was subject to the following delimitations:

A. Forty-eight undergraduate students enrolled in Southern State College in Magnolia, Arkansas, during the academic year of 1968-1969.

B. The objectivity, reliability, and validity of the Emo Questionnaire as utilized in this study for the measurement of the four selected defense mechanisms.

C. The stress situation under which the test was administered to the athletes and non-athletes. The stress situation was operational on two separate occasions for two different groups of subjects.

Purposes of the Study

The primary purpose of this study was to determine if a significant difference existed in the use of four selected

defense mechanisms between college women varsity athletes and non-athletes as measured by the Emo Questionnaire following a stress situation. A secondary purpose of the study was to determine the difference between the use of four defense mechanisms among college women participating in the team sports and the college women participating in the individual sports following a stress situation. Specifically, the following hypotheses were tested:

A. There is no significant difference in the use of rationalization between college women athletes and non-athletes following a stress situation.

B. There is no significant difference in the use of projection between college women athletes and non-athletes following a stress situation.

C. There is no significant difference in the use of unreality between college women athletes and non-athletes following a stress situation.

D. There is no significant difference in the use of withdrawal between college women athletes and non-athletes following a stress situation.

E. There is no significant difference in the use of rationalization between college women participating in team sports and college women participating in individual sports following a stress situation.

F. There is no significant difference in the use of projection between college women participating in

team sports and college women participating in individual sports following a stress situation.

G. There is no significant difference in the use of unreality between college women participating in team sports and college women participating in individual sports following a stress situation.

H. There is no significant difference in the use of withdrawal between college women participating in team sports and college women participating in individual sports following a stress situation.

Summary

Accompanying man's social customs in directing his daily life are the various assortment of defense mechanisms. Man automatically responds with these learned reactions to stress, tensions, or anxiety-producing situations. As modes of adjustment, defense mechanisms may be either helpful or harmful, depending upon their use and the part they play in making daily adjustments.

Man has a long history of using some form of adjustment or scapegoating. The Hebrews were relieved from their religious frustrations and disappointments by casting them upon an animal. Today with a little more subtleness, the individual frustrations and disappointments are alleviated by the use of defense mechanisms in maintaining adjustments to anxiety and tension-producing situations.

The purpose of the investigation was to determine if a

significant difference existed in the use of four selected defense mechanisms among college women varsity athletes and non-athletes as measured by the Emo Questionnaire following a stress situation. A secondary purpose of the study was to determine the difference between the use of four defense mechanisms among college women participating in the team sports and the college women participating in the individual sports following a stress situation.

Forty-eight women students from Southern State College in Magnolia, Arkansas, were selected to participate in the study. The subjects were divided into two main groups, athletes and non-athletes, and the athletes were sub-divided into team sport participants and individual sport participants.

Chapter II presents a review of the literature that was found pertinent to this investigation.

CHAPTER II

REVIEW OF RELATED LITERATURE

The psychological use of the term "defense" had its earliest reference in Freud's study, "The Neuro-Psychoses of Defense," in 1894.[1] Initially his use of the term "defense," however, was limited to repression only. It was not until sometime later that he referred to repression as one of many defense mechanisms. Since Freud's first utilization of the word, the concept of defense as a psychological term has developed a different meaning.[2]

Authorities believe that people do not necessarily utilize the same defense mechanism in all tension producing situations, but that mechanisms may be specific in a particular area of emotional conflict or even specific to a particular area of the emotional conflict. Carpenter, Weiner, and Carpenter[3] discovered that people who use sensitizing or alertness defense (pre-occupation, projection,

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[1]Anna Freud, The Ego and the Mechanisms of Defense, rev. ed. (New York: International Universities Press, Inc., 1966), p. 42.

[2]George Gero, "The Concept of Defense," The Psychoanalytic Quarterly, XX (1951), 565.

[3]Bruce Carpenter, Morton Wiener, and Janette Carpenter, "Predictability of Perceptual Defensive Behavior," Journal of Abnormal and Social Psychology, LII (1956), 380.

intellectualization, rationalization, et cetera) in a particular conflict area would perceive the stimuli more quickly than those who used repressive or avoidance (denial, blocking, et cetera), which supported the hypothesis for specific perceptual defense prediction.

Postman and Bruner[1] introduced perceptual defense as a perceptual principle which might account for variations in the timed recognition of words flashed upon a screen. Since the original introduction of the principle of perceptual defense, much controversy and criticism has followed. Perceptual defense was defined by Postman, Bronson, and Gropper as an "unconscious mechanism of resistance to recognition of threatening stimuli."[2] Similar investigations of importance relating to perceptual defense have been demonstrated in similar conclusions.[3, 4, 5]

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[1] J. S. Bruner and L. Postman, "Emotional Selectivity in Perception and Reaction," Journal of Personality, XVI (1947), 69.

[2] Leo Postman, Wanda C. Bronson, and George L. Gropper, "Is There A Mechanism of Perceptual Defense?" Journal of Abnormal and Social Psychology, XXXXVIII (April, 1953), 215.

[3] Elliott McGinnies, "Emotionality and Perceptual Defense," Psychological Review, LVI (September, 1949, 244.

[4] Elliott McGinnies and Howard Sherman, "Generalization of Perceptual Defense," Journal of Abnormal and Social Psychology (January, 1952), p. 81.

[5] Charles W. Eriksen, "The Case for Perceptual Defense," Psychological Review, LXI (1954), 175.

Eriksen,[1] Eriksen and Brown,[2] Osler,[3] Mathews,[4] and Kurland[5] utilized negative values but emotionally charged taboo and neutral words, or successful and unsuccessful tasks to measure the subjects in the various studies during the period preceding recognition of the critical words or tasks. The subjects tended to avoid the recognition of threatening stimuli. The results were interpreted by the cited authorities as demonstrating the role of different ego defenses in the perception of ego-threatening stimuli.

Voth[6] reported a series of investigations on the choice of defenses. A significant relationship was discovered between autokinetic test differences and a

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[1]Charles Eriksen, "Defense Against Ego-Threat in Memory and Perception," Journal of Abnormal and Social Psychology, XXXXVII (April, 1952), 230.

[2]Charles Eriksen and Thayer Brown, "An Experimental and Theoretical Analysis of Perceptual Defense," Journal of Abnormal and Social Psychology, LII (March, 1956), 230.

[3]Sonia Osler and Peter Lewinsohn, "The Relation Between Manifest Anxiety and Perceptual Defense," The American Psychologist (August, 1954), p. 446.

[4]Anne Mathews and M. Werthemimer, "A Pure Measure of Perceptual Defense Uncontaminated by Response Suppression," Journal of Abnormal and Social Psychology, LVII (1958), 375.

[5]S. H. Kurland, "The Lack of Generality in Defense Mechanisms as Indicated in Auditory Perceptions," Journal of Abnormal and Social Psychology, XXXXIX (April, 1954), 173.

[6]Harold Voth, Robert Cancro, and Morton Kissen, "Choice of Defense," Archives of General Psychiatry, (January, 1968), 36.

variety of behaviors. The autokinetic test purported to measure the relationship between varying amounts of apparent motion of a pinpoint of light in a totally dark room during a ten minute period. Voth found normal persons who experienced little autokinesis tended to rely more upon projection, denial, repression, acting and flights than did those who experienced greater autokinesis. Those persons who recorded extensive autokinesis tended to use daydreaming of a fantastic nature, withdrawal, intellectualization, and isolation.

Freud believed that persons selected certain defense mechanisms according to certain tendencies and dispositions from which they had been endowed, and because of these constitutionally based dispositions, he saw no reason . . . "to dispute the existence and importance of primary congenital variations of the ego."[1]

Several theories have been proposed to account for the differences in the use of defense mechanisms in relation to family environment. Some of the theorists believe that defense mechanisms remain relatively fixed aspects of the adult character structure.[2] Few studies have been conducted on the subject. Most studies conducted on family environmental influences have usually raised more questions than could be answered, even

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[1]Sigmund Freud, Analysis Terminable and Interminable, in Collected Papers, ed. by J. Strachey (New York: Basic Book, Inc., 1959), p. 343.

[2]Allan R. Weinstock, "Family Environment," p. 67.

though much relating to family environment has been explained.

In order to study the effects of family environment upon the development of defense mechanisms, Weinstock[1] conducted a longitudinal study of thirty-nine males associated with the University of California Guidance study. The psychological, mental, and physical development of the subjects were studied intensively at twenty-one months, and close contact followed and endured until the subjects reached the age of eighteen. The subjects received the final series of long intensive interviews at the age of thirty. Copious notes were recorded and given to two psychologists who worked independently in reading the entire mass of material on each subject. They rated each subject in the use of twenty defense and coping mechanisms.

The purpose of the study by Weinstock was to explore the relationship between a large number of variables which described the childhood environment and ratings of several defense and coping mechanisms in order to delineate the family antecedents of specific mechanisms. The study was used also to clarify the role of imitative behavior in the development of ego mechanisms and to elicit general principles about the

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[1] Ibid.

way in which family environment influenced the formation of character.

Findings of the study indicated that behavior of the parents was an important factor in determining the defense and coping mechanisms used by their sons. The subjects were not only influenced by the parents and environment, but also tried actively to master social situations in similar ways. Weinstock stated that a child exposed to considerable family conflict during adolescence became better able to deal with both their own and external impulses in adulthood. The subject's level of cognitive functioning at the time of family difficulties played important part in determining which ego mechanism became a permanent part of the subject's character structure. The immature ego reacted to conflict by rigid imitation of parents, while more mature egos learned to confront conflicts and deal with them in an adaptive way.

Thelen[1] conducted a study of fifty teenage males and their natural parents to determine if there were commonalities of defense preference within families and within sex groups. The Blacky Defense Preference Inventory was administered to determine these factors. Five statements were ranked and the differences were

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[1]Mark H. Thelen, "Similarities of Defense Preference Within Families and Within Sex Groups," The Journal of Projective Techniques and Personality Assessment, XXIX (December, 1965), 461.

determined between father and son, between the son and all the different fathers, and between mother and son. The results supported the hypothesis that male adolescent subjects were more similar to their father than nonrelated males. It could not be established that sons were more similar to mothers than to nonrelated females. There was a lack of evidence to indicate that sons prefer father's similarities over their mother's similarities. Thelen stated that one of the more intriguing findings of the study was that males tended to vary more in their defense preferences than females. Such a finding was attributed to the fact that males are considered to have more freedom and more alternatives for behavior than females.

Since the introduction of the concept of projection as a defense mechanism over seventy years ago, the term has described one of the most widely used defense mechanisms in the field of psychology and personality study. Projection is one of the most difficult terms to define because of the various ways it has been viewed by the psychologists.[1] This variation has caused great difficulty when one attempts to interpret theoretical discussions or research findings; no less than sixteen descriptive types of projection have

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[1]Bernard I. Murstein, "Studies in Projection: A Critique," Journal of Projective Techniques, XXI (June, 1957), 129.

been revealed. Holmes[1] presented differences in theories of projection with regard to two major points: (1) whether the individual projects his own or a different trait, and (2) whether the individual is aware or unaware of possessing the trait. Evidence revealed that subjects projected their own trait if they were aware of possession of the trait.

Similar investigations with similar outcomes have been conducted when the subjects received fraudulent, incompatible, and dissonant information about themselves.[2, 3, 4, 5] The interactive effects of ease of denial of possession of such negative traits and the attribution of that characteristic to a greater degree to a member of his own social category was considered by the above authors.

Many studies have been conducted in relation to defensive mechanisms, but most experiments dealing

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[1]David S. Holmes, "Dimensions of Projection," Psychological Bulletin, LXIX (1968), 248.

[2]Lewis W. Mondy, "A Failure to Obtain Defensive Projection," Psychological Reports, XX (1957), 1009.

[3]Dana Bramel, "A Dissonance Theory Approach to Defensive Projection," Journal of Abnormal and Social Psychology, LXIV (1962), 121.

[4]Donald W. Edlow and Charles A Kiesler, "Ease of Denial and Defensive Projection," Journal of Experimental Social Psychology, II (1966), 56.

[5]Dana Bramel, "Selection of a Target for Defensive Projection," Journal of Abnormal and Social Psychology, LXVI (1963), 318.

were administered by the clinical psychologists; scoring involved other qualified personnel. Subjects were assigned to high, medium, and low groups on the basis of the Rorschach ratings. The results revealed subjects in the middle range showed coping functions for tolerance of ambiguity, regression, and the service of the ego and free expressive coping. Those ranking in the high and low ranges tended to react defensively.

Hann[1] conducted another study in which ratings of coping and defense mechanisms were made on the basis of intensive interview. The California Personality Inventory and the Minnesota Multiphasic Personality Inventory were administered and analyzed by contrasting the responses based upon ego-mechanism ratings. The items found to characterize the coping and defense mechanisms were intercorrelated with the standard scales of the two personality inventories. The correlations found were low and insignificant.

Wiener, Carpenter, and Carpenter[2] made an attempt to devise a technique that would allow the kinds of defense mechanisms used by individuals in various

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[1]Norma Hann, "Coping and Defense Mechanisms Related to Personality Inventories," Journal of Counsulting Psychology, XXIX (1965), 373.

[2]Morton Wiener, Bruce Carpenter, and Janette T. Carpenter, "Determination of Defense Mechanisms for Conflict Areas from Verbal Material," Journal of Counsulting Psychology, XX (1956), 215.

areas of conflict to be specified. The testing allowed comparisons of mechanisms used in several conflict areas, but the general theory was not supported.

Hunter and Goodstein[1] elected to investigate the relationship of ego strength and defense mechanisms of rationalization and denial and one coping mechanism. They discovered that subjects with low ego strength utilized rationalization more than did the subjects with high ego strength. King and Schiller[2] discovered that in a situation conducive to the elicitation of defensive behavior, the level of ego strength was possibly related to the greater use of rationalization than either denial or projection.

Summary

Regardless of the number of mechanisms utilized during a number of different emotional conflicts, all have one factor in common; they are techniques used unconsciously to reduce a threat in the mind of a person when confronted with problems of the ego or personality which are encountered daily. Defense mechanisms are modes of adjustments relieving anxieties arising

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[1]Clorinda G. Hunter and Leonard D. Goodstein, "Ego Strength and Types of Defensive and Coping Behavior," Journal of Counsulting Psychology, XXXI (1967), 432.

[2]Gerald F. King and Marvin Schiller, "Ego Strength and Type of Defensive Behavior," Journal of Counsulting Psychology, XXIV (1960), 215.

CHAPTER III

PROCEDURES FOLLOWED IN THE DEVELOPMENT OF THE STUDY

The present investigation entailed a study of the comparison of the use of four specific defense mechanisms among twenty-four women athletes and twenty-four women non-athletes enrolled in Southern State College in Magnolia, Arkansas.

In this chapter, the investigator will discuss sources of data, methods of collecting data, and procedures followed in the development of the study. The procedures will be reported under these headings: preliminary procedures, criteria for the selection of the test, selection and description of the test, scoring procedures, selection of subjects, procedures followed in the collection of data, organization and treatment of data collected, and preparation of the final written report. This chapter concludes with a brief summary.

Sources of Data

Both human and documentary sources were utilized in the development of the present study. The human sources included forty-eight undergraduate women enrolled in the

Southern State College in Magnolia, Arkansas, during the academic year of 1968-1969. Another human source enlisted was Dr. Eva Goodenough, Professor of Psychology at Southern State College.

The documentary sources consisted of books, periodicals, theses, dissertations, and other reports of research related to aspects of the study.

Methods of Collecting Data

The data upon which the present investigation was based were obtained through a thorough study of available documentary materials and the administration of the Emo Questionnaire.

Procedures Followed in the Development of the Study

Preliminary Procedures

Prior to the actual collection of data, a series of preliminary procedures were necessary. The procedures included surveying, studying, and assimilating all literature pertinent to the study; securing permission from the Chairman of the Health and Physical Education Department at the Southern State College in Magnolia, Arkansas, to conduct the proposed study; developing and presenting a tentative outline of the study at a Graduate Seminar of the College of Health, Physical Education and Recreation at the Texas Woman's University in Denton, Texas; revising the outline in accordance with the suggestions offered by members of the thesis committee, and filing a prospectus of the ap-

proved study in the Office of the Dean of Graduate Studies.

Criteria for the Selection of the Test

Prior to the selection of the test, criteria for the selection were established. A survey of authoritive sources--Willgoose,[1] Bovard,[2] and Scott and French[3]--indicated that a test should meet the following minimum criteria: validity, reliability, objectivity, and administrative feasibility.

The stress situation was determined through consultation periods with Dr. Eva Goodenough, Professor of Psychology at Southern State College, Magnolia, Arkansas. It was established that the final examination period following a semester of work would be the situation most apt to present the same type of stress to all individuals subjected to the Questionnaire.

Selection and Description of the Test

The Emo Questionnaire was selected as the testing implement for this investigation because it was the only test discovered in which more than one defense mechanism

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[1]Carl E. Willgoose, Evaluation in Health Education and Physical Education (New York: McGraw-Hill Book Co., Inc., 1961), p. 24.

[2]John F. Bovard, Frederick W. Cozens, and E. Patricia Hagman, Tests and Measurement in Physical Education (Philadelphia: W. B. Saunders Co., 1949), p. 327.

[3]M. Gladys Scott and Esther French, Measurement and Evaluation in Physical Education (Dubuque: Wm. C. Brown Co. Publishers, 1959), p. 19.

could be tested. The Questionnaire is a paper pencil test consisting of 140 items, each describing some experience, such as doing poor work so someone else could excel or playing sick to get out of something. Subjects responded by placing a check mark under an appropriate column heading opposite each statement.

If the experience did NOT happen during the past month, the subject:

Checked "NO."

If the experience DID happen during the past month, the subject:

Checked "PLEASED"

Checked "NOT AFFECTED"

Checked "TROUBLED A LITTLE"

Checked "TROUBLED VERY MUCH"

The scores of many tests of emotional health reflect only the frequency of responses to particular groups of items. If ten items dealt with rationalization, for example, and a person checked three of them her score would be three. The Emo Questionnaire measures the frequency and intensity of the response. The intensity shows how strongly a subject felt about each experience.[1]

Experimental investigation indicated that frequency and intensity of response were not necessarily closely associated. In the original form of the Emo Questionnaire,

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[1]Baehr and Baehr, Emo Questionnaire, p. 2.

the frequency and averaged intensity were found to have about nine per cent of their variance in common. Validation procedures for the present form of the Questionnaire have shown that the intensity scores are more satisfactory diagnostic measures than the frequency scores. The intensity scores are, in fact, among the most diagnostic of the several indices obtained from the Questionnaire.[1]

The scores from the Questionnaire may be represented in a profile of three categories: 1) ten diagnostic categories which include depression, fear and anxiety, hostility, inferiority feelings, organic reaction, projection, rationalization, sex, unreality, and withdrawal; 2) two composite vector scores consisting of N, which is a combination of rationalization, inferiority feelings, and fear and anxiety, and Z, which is a combination score of depression, projection, unreality, and withdrawal; and 3) a buffer category which differs from the other items in that they describe normally non-disturbing everyday events.[2] They are included to counteract the predominantly "maladjusted" tone of the other items and as a potential scoring category. They become important as a scoring category if the subject indicated she was "troubled very much" by these normally non-disturbing events.[3]

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[1] Ibid. [2] Ibid. [3] Ibid., p.6.

The Questionnaire has a wide range of application. As a screening device it has been used for all levels of industrial personnel. In clinical practice, it has been used with private patients, with out-patients in clinics, and with persons who were hospitalized because of the seriousness of their emotional disorder.[1]

Scoring Procedures

A score sheet that corresponded to the answers on the test booklet was provided for all subjects. A scale value of "1" through "4" was written in the columns marked "Pleased," "Not Affected," "Troubled a Little," and "Troubled Very Much" on the test booklet respectively. The lines of the score sheet were aligned with the corresponding lines of the test booklet and the subject's responses were recorded according to the scale value code. The response for each situation from page three in the test booklet was recorded in the "P3" column on the score sheet. For example, if a subject responded by checking the "Pleased" column for the first situation, the number "1" was recorded opposite that number on the score sheet. If a subject responded by checking the "Troubled Very Much" column on the test booklet, then the number "4" was recorded on the score sheet opposite

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[1] Ibid., p. 3.

that situation. This procedure was conducted for each situation on each page of the test booklet.

The frequency for each group of items was recorded by counting the number of times the scale value "1" was used for each group of items on the score sheet and recording this number in a column labeled "nv1" for line one or for each group of items. The same procedure was conducted for the number of times that the other scale values were used. These totals were placed in the corresponding "nv2", "nv3", and "nv4" columns for line one or each group of items respectively. This procedure was repeated for each group of items. The total frequency score for each defense mechanism was obtained by totaling the "nv1", "nv2", "nv3", and "nv4" scores and recording it in a "Sn" column for that line.

A combined frequency score for all four defense mechanisms began by obtaining the total of all numbers for each mechanism in column "nv1" and recording it in the "nv1" column opposite "Total R + P + U + W" (total combined frequency for rationalization, projection, unreality, and withdrawal). Totals for all mechanisms for "nv2", "nv3", and "nv4" were obtained similarly. These four totals were summed for the grand total number of frequencies for all mechanisms combined.

To obtain the intensity for each mechanism,

each number in the "nv" columns was multiplied by its code value and the total placed in the column labeled "Sv" for that line. i.e., The entry in "nv1" was multiplied by one; the entry in "nv2" was multiplied by two; the entry in "nv3" was multiplied by three; and the entry in "nv4" was multiplied by four. The total of these four numbers for each group of items was recorded in the "Sv" column for that line. The combined intensity procedure was the same as the combined frequency procedure with the multiplication exception. After the "nv" numbers were totaled and placed in their respective boxes for the combined frequency scores, the combined intensity score was obtained by multiplying each of these totals by their code value. The combined total of these four numbers was representive of the combined intensity score for all defense mechanisms and recorded in the "Sv" column opposite the Total R + P + U + W.[1]

The individual raw scores and the combined raw scores for frequency and intensity will be tabulated statistically. A copy of the test booklet and score sheet may be found in the appendix.

Selection of Subjects

The following criteria were established for use

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[1] Ibid., pp. 27-29.

in the selection of subjects. Each subject should be (1) enrolled in the required physical education program at Southern State College in Magnolia, Arkansas, during the academic year of 1968-1969, or (2) an active participant in one of three varsity sports, swimming, basketball, and tennis, offered for women at Southern State College. Thirty subjects were drawn randomly from a group of numbers of students enrolled in the required physical education classes who had never participated in nor tried out for a varsity sport at any time during enrollment in either high school or college. Twenty-four of these subjects participated in the test administration following a stress situation. Twenty-five women athletes participated in the test administration, but one was rejected due to an emotional crises brought about by forces beyond those under the normal stress situation.

Procedures Followed in the Collection of Data

The Emo Questionnaire was administered to the women varsity athletes and to the women non-athletes following final examinations. All data were collected between a period from January 16, 1969, to May 22, 1969. The participants from the swim team and basketball team completed their testing following the final examination period of the fall semester, January 16, 1969. The participants from the tennis team and

all non-athletes completed their testing following the final examination period of the spring semester, May 22, 1969. The data collected from each student were tabulated by the investigator.

Organization and Treatment of Data Collected

The procedures which follow include those related to studying the statistical evidence for the tests employed, selecting the statistical techniques, and treating the data. The investigator tabulated the data collected with respect to the raw scores yielded by the Emo Questionnaire.

The investigator then reviewed the purposes of the study as set forth in the hypotheses. To test the differences between groups, a one-way analysis of variance was utilized. The .05 level of confidence was accepted by the investigator as requisite to the rejection of the null hypotheses. The table of F was referred to for interpretations of ratios computed through the formula. The eight hypotheses of the investigation were tested through the application of a test of significance--analysis of variance for unequal groups.

Preparation of the Final Written Report

Upon completion of the statistical treatment of the data, the investigator summarized the report, stated a conclusion to the study, and discussed implications of the study. The final procedures included making recom-

mendations for further studies, compiling a bibliography, and developing an appendix.

Summary

The investigator outlined the procedures followed in the development of the study. These procedures included those which were related to sources of data, methods of collecting data, and those which were preliminary to the collection of data. Preliminary procedures involved the selection of instruments and the selection of subjects.

The instrument selected for use in the study was the Emo Questionnaire. Subjects for the study were forty-eight undergraduate students enrolled in the required physical education program at Southern State College in Magnolia, Arkansas, during the academic year of 1968-1969. Undergraduate women who were active participants in one of three varsity sports, swimming, basketball, and tennis, offered for women at Southern State College were compared with women sho had no athletic experience.

Procedures for analyzing the data consisted of selecting appropriate statistical techniques to treat the data. A one-way analysis of variance for unequal groups was selected to test the significance of the differences between each group. The .05 level of confidence was accepted as the point for the rejection of

the null hypotheses. The final procedures included those related to summarizing and writing the final report.

Chapter IV includes the presentation of the findings.

CHAPTER IV

PRESENTATION OF THE FINDINGS

In this chapter an analysis of the data is presented, and the significant findings interpreted. Twenty-four subjects enrolled in the required physical education program and twenty-four participants of three varsity sports, swimming, basketball and tennis, participated in the study.

Comparisons of the Scores Between Athletes and Non-Athletes, Team and Individual Sports Participants on the Defense Mechanism Projection

Frequency Scores of the Defense Mechanism Projection Between Athletes and Non-athletes

Scores of the two groups on the frequency with which they used the defense mechanism of projection were compared through the application of a one-way analysis of variance for equal groups. Based upon the data collected, at the assigned confidence level of .05, there was no significant difference between the athletes and non-athletes with respect to scores on the use of projection. The mean for the athletes was 1.7916, the standard deviation was 1.7316, and the variance was 3.1287. The mean for the non-athletes was 2.0416, the standard deviation was 1.7436, and the vari-

ance was 3.1722. Table 1 presents a summary for the one-way analysis of variance with respect to projection frequency scores.

TABLE 1

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF PROJECTION FREQUENCY SCORES OF ATHLETES AND NON-ATHLETES

Source	SS	df	ms	F
Between Groups	0.7499	1	0.7499	0.2380
Within Groups	144.9168	46	3.1503	
Total	145.6667	47		

F (1,46) (.05) = 4.05

Intensity Scores of the Defense Mechanism Projection Between Athletes and Non-athletes

The one-way analysis of variance for equal groups was used to compare the scores of projection intensity between the two groups. There was no significant difference between the intensity of response between the athletic and non-athletic groups. The mean for the athletes was 4.4166, the standard deviation was 4.7777, and the variance was 23.8191. The mean for the non-athletes was 4.9563, the standard deviation was 4.5044, and the variance was 21.1722. Table 2, page 36, presents a summary for the one-way analysis of variance with respect to scores based upon the intensity of projection between the two groups.

TABLE 2

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF PROJECTION INTENSITY SCORES OF ATHLETES AND NON-ATHLETES

Source	SS	df	ms	F
Between Groups	3.5207	1	3.5207	0.1565
Within Groups	1034.7918	46	22.4954	
Total	1038.3125	47		

F (1,46) (.05) = 4.05

Frequency Scores of the Defense Mechanism Projection Between Team and Individual Sports Participants

Frequency of the use of projection as a defense mechanism was compared between participants in the team sport of basketball, and the participants in the individual sports of swimming and tennis by means of application of the one-way analysis of variance for unequal groups. At the assigned confidence level of .05 and based upon the data collected, the investigator found no significant difference in the use of projection between the team and individual sports participants. The mean for the team sport group was 1.1538, the standard deviation was 1.666, and the variance was 1.4744. The mean for the individual sport group was 2.5454, the standard deviation was 1.9709, and the variance was 4.2728. Table 3, page 37, presents the summary for the one-way analysis of variance for scores for the frequency of the use of projection between participants in team and individual sports.

TABLE 3

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF PROJECTION FREQUENCY SCORES OF TEAM AND INDIVIDUAL SPORTS PARTICIPANTS

Source	SS	df	ms	F
Between Groups	11.5387	1	11.5387	4.2015
Within Groups	60.4197	22	2.7463	
Total	71.9584	23		

F (1,22) (.05) = 4.30

Intensity Scores of the Defense Mechanism Projection Between Team and Individual Sports Participants

Scores of projection intensity were compared through application of one-way analysis of variance for unequal groups. Based upon the data collected at the assigned confidence level of .05, there was no significant difference between team sport and individual sport participants with respect to projection intensity scores. The mean for the team sport participants was 2.6923, the standard deviation was 2.7283, and the variance was 8.0641. The mean for the individual sport participants was 6.4545, the standard deviation was 5.7740, and the variance was 36.6730. Table 4, page 38, presents a summary for the one-way analysis of variance with respect to scores of the intensity of projection between the two groups.

TABLE 4

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF PROJECTION INTENSITY SCORES OF TEAM AND INDIVIDUAL SPORT PARTICIPANTS

Source	SS	df	ms	F
Between Groups	84.3368	1	84.3368	4.0030
Within Groups	463.4966	22	21.0680	
Total	547.8334	23		

F (1,22) (.05) = 4.30

Comparisons of the Scores Between Athletes and Non-Athletes, Team and Individual Sports Participants on the Defense Mechanism Rationalization

Frequency Scores of the Defense Mechanism Rationalization Between Athletes and Non-athletes

Scores of the two groups on frequency of the use of the defense mechanism of rationalization were compared through the application of a one-way analysis of variance for equal groups. Based upon the data collected, at the assigned confidence level of .05, there was no significant difference between the athletes and non-athletes with respect to scores on frequency of the use of rationalization. The frequency mean for athletes was 4.7500, the standard deviation was 2.0258, and the variance was 4.2826. The frequency mean for non-athletes was 4.000, the standard deviation was 1.5000, and the variance was 2.3478.

Table 5 presents a summary for the one-way analysis of variance with respect to rationalization frequency scores among athletes and non-athletes.

TABLE 5

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF RATIONALIZATION FREQUENCY SCORES OF ATHLETES AND NON-ATHLETES

Source	SS	df	ms	F
Between Groups	6.7500	1	6.7500	2.0360
Within Groups	152.5000	46	3.3152	
Total	159.2500	47		

F (1,46) (.05) = 4.05

Intensity Scores of the Defense Mechanism Rationalization Between Athletes and Non-athletes

The one-way analysis of variance for equal groups was used to compare the scores of rationalization intensity between the two groups. There was no significant difference between the intensity scores between the athletes and non-athletes. The intensity mean score for the athletes was 14.2083, the standard deviation was 6.1304, and the variance was 39.2160. The intensity mean score for the non-athletes was 12.2083, the standard deviation was 4.9748, and the variance was 25.8247. Table 6, page 40, presents a summary for the one-way analysis of variance with respect to scores based upon the intensity of rationalization between the two groups.

TABLE 6

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF RATIONALIZATION INTENSITY SCORES OF ATHLETES AND NON-ATHLETES

Source	SS	df	ms	F
Between Groups	47.9999	1	47.9999	1.4760
Within Groups	1495.9168	46	32.5199	
Total	1543.9167	47		

F (1,46) (.05) = 4.05

Frequency Scores of the Defense Mechanism Rationalization Between Team and Individual Sports

Frequency of the use of rationalization was compared between team sport and individual sport participants by way of application of the one-way analysis of variance for unequal groups. At the assigned significance level of .05 and based upon the data collected, the investigator found a significant difference in the use of rationalization between team sport and individual sports participants as evidenced by the following scores. The mean frequency score of the team sport group was 3.7692, the standard deviation was 1.7609, and the variance was 3.3591. The mean frequency score for the individual sport group was 5.9090, the standard deviation was 1.6766, and the variance was 3.0915. Table 7, page 41, presents the summary for the one-way analysis of variance of scores for the rationalization fre-

quency between team and individual sports.

TABLE 7

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF RATIONALIZATION FREQUENCY SCORES OF TEAM AND INDIVIDUAL SPORTS PARTICIPANTS

Source	SS	df	ms	F
Between Groups	27.2832	1	27.2832	8.4282
Within Groups	71.2168	22	3.2371	
Total	98.5000	23		

F (1,22) (.05) = 4.30

F (1,22) (.01) = 7.94

It may be observed that the individual sport group tended to rely upon the defense mechanism of rationalization somewhat more than the team sport group. Owing to the inability to obtain evidence to support the reasons for the use of the mechanisms, these data appear to negate a number of speculative conclusions.

One might postulate that those persons involved in individual sports at the college level would be better prepared to meet the tension-producing situations involved in their activity because such persons would have developed adequate strength through their experiences to accept and reject frustrations. Standing alone to face failure or the stresses provided during competitive errors, it would seem reasonable that students involved in individual sports would tend to make excuses less than those in-

volved in the team sport group for their inadequacies. Those who play individual sports may be thought to be more determined to better their ability and to eliminate errors in a search for perfection, rather than make excuses for them. These data do not confirm this presumption but support the opposite viewpoint, that college women involved in individual sports have not accepted a realistic attitude and rationalize away their inadequacies in order to defend the self.

It might be stated then that the cohesiveness of the team sport group during competitive action makes a difference in the use of rationalization. It might be surmised that the persons involved in a team sport are more relaxed because they are not functioning alone. They know someone will be near to assist in accepting the responsibility of winning or losing with them, enabling them to accept the tension-producing situation or frustration. A competitive error may be accepted by others or even masked within a group during competition, whereas it may not be within an individual sport.

Intensity Scores of the Defense Mechanism Rationalization Between Team and Individual Sports Participants

Scores of rationalization intensity were compared through application of one-way analysis of variance for unequal groups. Based upon the data collected at the assigned confidence level of .05, there was

a significant difference between team sport and individual sport participants with respect to the intensity of rationalization as shown in the following mean scores. The mean intensity score for the team sport participants was 10.7692, the standard deviation was 4.7095, and the variance was 24.0260. The mean intensity score for the individual sport participants was 18.2727, the standard deviation was 5.0289, and the variance was 27.8187.

As supported by the scores, it was acknowledged that the individual sport group felt a greater emotional impact from the use of rationalization than did the team sport group. Although the frequency score revealed a significant difference, the intensity scores were even greater, indicating that the persons within the individual sport group were troubled to a greater extent from the use of rationalization following stress situations. Table 8 presents a summary of the one-way analysis of variance with respect to rationalization intensity scores.

TABLE 8

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF RATIONALIZATION INTENSITY SCORES OF TEAM AND INDIVIDUAL SPORTS PARTICIPANTS

Source	SS	df	ms	F
Between Groups	335.4688	1	335.4688	13.0281
Within Groups	566.4896	22	25.7495	
Total	901.9584	23		

F (1,22) (.05) = 4.30

F (1,22) (.01) = 7.94

Comparisons of the Scores Between Athletes and Non-Athletes, Team and Individual Sports Participants on the Defense Mechanism Unreality

Frequency Scores of the Defense Mechanism Unreality Between Athletes and Non-athletes

Scores of the two groups on frequency of use of the defense mechanism of unreality were compared through the application of a one-way analysis of variance for equal groups. Based upon the data collected, at the assigned confidence level of .05, there was no significant difference between the athletes and non-athletes with respect to scores on the frequency of use of unreality. The mean for the athletes was 3.5416, the standard deviation was 2.2170, and the variance was 5.1288. The mean score for the non-athletes was 2.6666, the standard deviationwas 2.4438, and the variance was 6.2320. Table 9 presents a summary for the one-way analysis of variance with respect to the frequency of the use of unreality among athletes and non-athletes.

TABLE 9

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF UNREALITY FREQUENCY SCORES OF ATHLETES AND NON-ATHLETES

Source	SS	df	ms	F
Between Groups	9.1874	1	9.1874	1.6174
Within Groups	261.2918	46	5.6802	
Total	270.4792	47		

F (1,46) (.05) = 4.05

Intensity Scores of the Defense Mechanism Unreality Between Athletes and Non-athletes

The one-way analysis of variance for equal groups was used to compare the scores of unreality intensity scores between the two groups. There was no significant difference between the intensity scores between the two groups. The intensity mean score for the athletes was 8.1250, the standard deviation was 4.9016, and the variance was 25.0706. The intensity mean score for the non-athletes was 6.7083, the standard deviation was 6.5605, and the variance was 44.9114. Table 10 presents a summary for the one-way analysis of variance with respect to scores based upon the intensity of unreality between the two groups.

TABLE 10

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF UNREALITY INTENSITY SCORES OF ATHLETES AND NON-ATHLETES

Source	SS	df	ms	F
Between Groups	24.0833	1	24.0833	0.6882
Within Groups	1609.5834	46	34.9909	
Total	1633.6667	47		

F (1,46) (.05) = 4.05

Frequency Scores of the Defense Mechanism Unreality Between Team and Individual Sports Participants

Frequency of the use of unreality scores was compared between team sport and individual sport participants by way of application of the one-way analysis of variance for unequal groups. At the assigned confidence level of

.05 and based upon the data collected, the investigator found no significant difference in the use of unreality frequency between team sport and individual sport participants. The mean frequency score for team athletes was 3.3076, the standard deviation was 2.3001, and the variance was 5.7311. The mean frequency score for the individual sports participants was 3.8181, the standard deviation was 2.0811, and the variance was 4.7639. Table 11 presents the summary for the one-way analysis of variance of scores for the use of unreality of the team and individual sport participants.

TABLE 11

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF UNREALITY FREQUENCY SCORES OF TEAM AND INDIVIDUAL SPORTS PARTICIPANTS

Source	SS	df	ms	F
Between Groups	1.5527	1	1.5527	0.2934
Within Groups	116.4057	22	5.2911	
Total	117.9584	23		

F (1,22) (.05) = 4.30

Intensity Scores of the Defense Mechanism Unreality Between Team and Individual Sports Participants

Scores of unreality intensity were compared through application of a one-way analysis of variance for unequal groups. Based upon the data collected at the assigned confidence level of .05, there was no significant difference between team sport and individual sports participants with respect to the intensity of unreality. The

mean intensity score of the team sport group was 7.5384, the standard deviation was 5.2714, and the variance was 30.1030. The mean intensity score for the individual sports group was 8.8181, the standard deviation was 4.3238, and the variance was 20.5644. Table 12 presents a summary for the one-way analysis of variance with respect to scores of the intensity of unreality between the two groups.

TABLE 12

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF UNREALITY INTENSITY SCORES OF TEAM AND INDIVIDUAL SPORTS PARTICIPANTS

Source	SS	df	ms	F
Between Groups	9.7578	1	9.7578	0.3786
Within Groups	566.8672	22	25.7666	
Total	576.6250	23		

F (1,22) (.05) = 4.30

Comparisons of the Scores Between Athletes and Non-Athletes, Team and Individual Sports Participants on the Defense Mechanism Withdrawal

Frequency Scores of the Defense Mechanism Withdrawal Between Athletes and Non-athletes

Scores of the two groups on the use of withdrawal as a defense mechanism were compared through the application of a one-way analysis of variance for equal groups. Based upon the data collected, at the assigned confidence level of .05, there was no segnificant difference found between the athletes and non-athletes with respect to

scores on the use of withdrawal. The mean frequency score for the athletes was 3.7916, the standard deviation was 2.7985, and the variance was 8.1723. The mean frequency score for the non-athletes was 4.1666, the standard deviation was 2.3922, and the variance was 5.9713. Table 13 presents a summary of the one-way analysis of variance with respect to withdrawal frequency scores.

TABLE 13

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF WITHDRAWAL FREQUENCY SCORES OF ATHLETES AND NON-ATHLETES

Source	SS	df	ms	F
Between Groups	1.6874	1	1.6874	0.2386
Within Groups	325.2918	46	7.0715	
Total	326.9792	47		

F (1,46) (.05) = 4.05

Intensity Scores of the Defense Mechanism Withdrawal Between Athletes and Non-Athletes

The one-way analysis of variance for equal groups was used to compare the scores of withdrawal intensity between the two groups. There was no significant difference between the intensity scores between the athletes and non-athletes. The mean intensity score for the athletes was 9.2916, the standard deviation was 6.8525, and the variance was 48.9988. The mean intensity score for the non-athletes was 10.1666, the standard deviation was 6.3535, and the variance was 42.1456. Table 14 presents

a summary for the one-way analysis of variance with respect to scores based upon the intensity of withdrawal between the two groups.

TABLE 14

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF WITHDRAWAL INTENSITY SCORES OF ATHLETES AND NON-ATHLETES

Source	SS	df	ms	F
Between Groups	9.1874	1	9.1874	0.2016
Within Groups	2096.2918	46	45.5715	
Total	2105.4792	47		

F (1,46) (.05) = 4.05

Frequency Scores of the Defense Mechanism Withdrawal Between Team and Individual Sports Participants

Frequency of the use of withdrawal as a defense mechanism was compared between team and individual sports groups by application of the one-way analysis of variance for unequal groups. At the assigned confidence level of .05 and based upon the data collected, the investigator found no significant difference between the team and individual sport participants. The mean frequency score for the team sport group was 3.3846, the standard deviation was 2.9230, and the variance was 9.2564. The mean frequency score for the individual sport group was 4.2727, the standard deviation was 2.5616, and the variance was 7.2183. Table 15, page 50, presents the summary for the one-way analysis of variance of scores for the use of withdrawal between team and individual sports.

TABLE 15

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF WITHDRAWAL FREQUENCY SCORES OF TEAM AND INDIVIDUAL SPORTS PARTICIPANTS

Source	SS	df	ms	F
Between Groups	4.6995	1	4.6995	0.5641
Within Groups	183.2589	22	8.3299	
Total	187.9548	23		

F (1,22) (.05) = 4.30

Intensity Scores of the Defense Mechanism Withdrawal Between Team and Individual Sports Participants

Scores of withdrawal intensity were compared through application of a one-way analysis of variance for unequal groups. Based upon the data collected at the assigned confidence level of .05, there was no significant difference found between team and individual sport participants with respect to withdrawal intensity scores. The mean intensity score for the team sport group was 7.6923, the standard deviation was 6.6144, and the variance was 47.3975. The mean intensity score for the individual sport group was 11.1818, the standard deviation was 6.6444, and the variance was 48.5638. Table 16, page 51, presents a summary for the one-way analysis of variance with respect to scores of withdrawal intensity between the two groups.

TABLE 16

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF WITHDRAWAL INTENSITY SCORES OF TEAM AND INDIVIDUAL SPORTS PARTICIPANTS

Source	SS	df	ms	F
Between Groups	72.5527	1	72.5527	1.5138
Within Groups	1054.4057	22	47.9275	
Total	1126.9584	23		

F (1,22) (.05) = 4.30

Comparisons of the Scores Between Athletes and Non-Athletes, Team and Individual Sports Participants on the Combined Defense Mechanisms

Frequency Scores of Four Defense Mechanisms Between Athletes and Non-athletes

Scores of the two groups on the total frequency with which defense mechanisms were used were compared through the application of a one-way analysis of variance for unequal groups. Based upon the data collected, at the assigned confidence level of .05, there was no significant difference between the athletes and non-athletes with respect to total frequency scores. The mean frequency score for the athletes was 13.8750, the standard deviation was 6.6414, and the variance was 46.0271. The mean frequency score for the non-athletes was 12.8750, the standard deviation was 6.4891, and the variance was 43.9402. Table 17, page 52, presents a summary for the one-way analysis of vari-

dividual sports.

TABLE 18

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF TOTAL FREQUENCY SCORES OF TEAM AND INDIVIDUAL SPORTS PARTICIPANTS

Source	SS	df	ms	F
Between Groups	144.8207	1	144.8207	3.4865
Within Groups	913.8043	22	42.5365	
Total	1058.6250	23		

F (1,22) (.05) = 4.30

Intensity Scores of Four Defense Mechanisms Between Athletes and Non-athletes

Scores of total intensity of the four mechanisms were compared through application of one-way analysis of variance for equal groups. Based upon the data collected at the assigned confidence level of .05, there was no significant difference between the two groups. The mean score for the athletes was 36.0833, the standard deviation was 16.7131, and the variance was 291.4722. The mean intensity score for the non-athletes was 34.0000, the standard deviation was 18.2688, and the variance was 348.2608. Table 19, page 54, presents a summary for the one-way analysis of variance with respect to scores of total intensity of all mechanisms between the two groups.

TABLE 19

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF TOTAL INTENSITY SCORES OF ATHLETES AND NON-ATHLETES

Source	SS	df	ms	F
Between Groups	52.0833	1	52.0833	0.1628
Within Groups	14713.8334	46	319.8659	
Total	14765.9167	47		

F (1,46) (.05) = 4.05

Intensity Scores of Four Defense Mechanisms Between Team and Individual Sports Participants

The one-way analysis of variance for unequal groups was used to compare the scores of total intensity between team and individual sport participants. Based upon the data collectd, at the assigned confidence level of .05, a significant difference was found between the team and individual sport participants as indicated by the following scores. The mean intensity score for the team sport group was 28.6923, the standard deviation was 16.1692, and the variance was 283.2310. The mean intensity score for the individual sports group was 44.8181, the standard deviation was 12.6337, and the variance was 175.5676. In the comparison of intensity of use of the four defense mechanisms, the significant difference in the intensity of rationalization appears to be so great that it became the basic reason for the difference in the total intensity score of team and

individual sports. No other conclusion would appear acceptable. Table 20 presents a summary of the one-way analysis of variance with respect to scores of total intensity of all mechanisms between the two groups.

TABLE 20

SUMMARY TABLE FOR ANALYSIS OF VARIANCE OF TOTAL INTENSITY SCORES OF TEAM AND INDIVIDUAL SPORTS PARTICIPANTS

Source	SS	df	ms	F
Between Groups	1549.4277	1	1549.4277	6.6132
Within Groups	5154.4057	22	234.2911	
Total	6703.8334	23		

F (1,22) (.05) = 4.30

Tests of Hypotheses

Upon the basis of the results of the analysis of data through the application of the appropriate statistical test--analysis of variance, the hypotheses stated in the first chapter sere examined. The results of the applied tests are presented below.

Hypothesis I

> There is no significant difference in the use of rationalization between college women athletes and non-athletes following a stress situation.

The data collected for this study failed to provide sufficient information for the investigator to reject the hypothesis.

Hypothesis II

> There is no significant difference in the use of projection between college women athletes and non-athletes following a stress situation.

The data collected for this study failed to provide sufficient information for the investigator to reject the hypothesis.

Hypothesis III

> There is no significant difference in the use of unreality between college women athletes and non-athletes following a stress situation.

The data collected for this study failed to provide sufficient information for the investigator to reject the hypothesis.

Hypothesis IV

> There is no significant difference in the use of withdrawal between college women athletes and non-athletes following a stress situation.

The data collected for this study failed to provide sufficient information for the investigator to reject the hypothesis.

Hypothesis V

> There is no significant difference in the use of rationalization between college women participating in team sports and college women participating in individual sports following a stress situation.

The data collected for this study provided sufficient information for the investigator to reject the hypothesis.

Hypothesis VI

> There is no significant difference in the use of projection between college women participating in team sports and college women participating in individual sports following a stress situation.

The data collected for this study failed to provide sufficient information for the investigator to reject the hypothesis.

Hypothesis VII

> There is no significant difference in the use of unreality between college women participating in team sports and college women participating in individual sports following a stress situation.

The data collected for this study failed to provide sufficient information for the investigator to reject the hypothesis.

Hypothesis VIII

> There is no significant difference in the use of withdrawal between college women participating in team sports and college women participating in individual sports following a stress situation.

The data collected for this study failed to provide sufficient information for the investigator to reject the hypothesis.

Summary

In this chapter an analysis of the data was presented. Based upon the findings there was no significant difference in the use of projedtion, rationalization, unreality, or withdrawal between college women

athletes and non-athletes following a stress situation as measured by the Emo Questionnaire. Although there was definitely no significant difference among the athletes and non-athletes in the use of the four mechanisms, it was interesting to note the differentiated outcome indicated between the two groups, even though minute. The frequency and intensity of projection and withdrawal was greater for the non-athletes than the athletes. The athletes revealed a tendency to use rationalization and unreality with the total frequency and intensity slightly greater than the non-athletes. The athletes, then, tended to make excuses and resort to day dreams possibly to recover from stresses, while the non-athletes would cast the blame upone others and avoid certain stresses by withdrawing.

There was no significant difference in the use of projection, unreality, or withdrawal between college women participating in team sports and college women participating in individual sports following a stress situation as measured by the Emo Questionnaire. The results did, however, indicate that the individual sports participants tended to resort to unreality and withdrawal a little more than did the team sport participants. The frequency and intensity of projection among the team and individual sport scores did approach

a significant difference. The F was 4.0030. The scores provided indicated that the individual sport participants used projection more than the team sport participants. The individual sports group was also most affected by its use. The total frequency of all scores between the team and individual sport groups also approached, but did not reach, significance.

Based upon data collected for this study, the null hypothesis comparing the use of rationalization between team and individual sports participants was rejected. Sufficient statistical information supported the fact that individual sports participants significantly made use of rationalization more so than the team sport participants. Although the frequency score revealed a significant difference, the intensity scores for rationalization were even greater, indicating the students within the individual sports group were troubled to a greater extent than the students in the team sport group following stress situations.

The reasons why the defense mechanisms were used could not be measured by the administration of the Emo Questionnaire. Only speculations may be concluded as to the reasons. It has been observed that among groups of athletes and non-athletes in team and individual sport situations, cohesiveness among players appears to be an advantage in the adjustive processes during game and game-like situations. Individual sports persons appear

to be more demanding upon themselves than team sport persons when in error. Within a team, a mistake is usually accepted by the other players much better than the person in error. The acceptance does provide an easier procedure for the person in error to adjust to her mistake, whereas among the individual sports, this cohesiveness and team companionship and compatibility is absent leaving the individual participant to stand alone.

A comparison of a combined total frequency score for all defense mechanisms was made between athletes and non-athletes, and between team and individual sports participants. No significant difference was found in the total frequency score of all mechanisms between athletes and non-athletes. There was no significant difference in the total intensity score of all mechanisms between athletes and non-athletes. A significant difference was found, however, in the total intensity score of all mechanisms between team and individual sports participants at the .05 level of confidence. This is ascribed to the significant difference in rationalization between the two groups.

In chapter V, the summary, conclusion, and recommendations for further studies will be presented.

The purpose of this investigation was to determine if a significant difference existed in the use of four selected defense mechanisms among college women varsity athletes and non-athletes and among college women participating in the team sports and college women participating in the individual sports following a stress situation.

The research design involved a total of forty-eight undergraduate students divided into two main groups: non-participants of varsity sports (non-athletes) and athletes. The group of athletes was sub-divided into thirteen team sport participants and eleven individual sport participants. The Emo Questionnaire was administered following a stress situation. The stress situation used in the study was the final examination period of the 1968-1969 school year. A comparison was made between the groups in relation to frequency of choice and intensity of choice scores in the Emo Questionnaire for each of the four defense mechanisms investigated.

Findings of the Study

The hypotheses that guided the present investigation stated that (1) there would be no significant difference in the use of rationalization, projection, unreality, and withdrawal among college women athletes and non-athletes, and (2) there would

be no significant difference in the use of rationalization, projection, unreality, and withdrawal among college women participating in individual sports or team sports following a stress situation. The investigator failed to reject the hypotheses relating to the use of the four defense mechanisms among college women athletes and non-athletes, as well as the hypotheses relating to the use of projection, unreality, and withdrawal among team sport participants and individual sports participants. The hypothesis relating to the use of rationalization among team sport participants and individual sports participants was rejected.

Conclusion of the Study

Athletes and non-athletes react in similar patterns in the use of the four defense mechanisms considered in this study. Team sport participants and individual sports participants tend to react in similar ways with the exception of the use of the defense mechanism, rationalization, which the individual sports participants use to a much greater degree than the team sport participants.

Recommendations for Further Studies

The following studies have been recommended for further investigation:

A. The differences between the families of athletes and non-athletes in their use of defense mechanisms.

B. The differences between the families of team sport participants and individual sports participants in their use of four selected defense mechanisms as measured by the Emo Questionnaire.

C. The differences between women athletes and non-athletes in their use of four selected defense mechanisms as measured by the Emo Questionnaire following a different, yet more comparable stress situation.

D. The development of a test for measuring defense mechanisms more extensively than the Emo Questionnaire.

FREQUENCY AND INTENSITY RAW SCORES FOR THE DEFENSE MECHANISM RATIONALIZATION

Subject	Athlete		Non-athlete	
	Frequency	Intensity	Frequency	Intensity
S1	4	14	4	12
S2	7	21	2	5
S3	7	21	2	7
S4	6	18	2	5
S5	3	10	4	10
S6	8	29	6	16
S7	6	21	3	10
S8	5	17	3	10
S9	9	22	5	15
S10	5	13	3	9
S11	5	15	3	11
S12	5	17	6	20
S13	5	15	5	17
S14	3	11	5	16
S15	4	12	7	24
S16	6	14	2	7
S17	3	8	2	6
S18	3	7	6	21
S19	1	3	4	12
S20	7	17	6	16
S21	2	6	4	10
S22	1	3	3	9
S23	5	14	4	11
S24	4	13	5	14

	Team Sport Participants		Individual Sports Participants	
S1	5	17	4	14
S2	5	15	7	21
S3	3	11	7	21
S4	4	12	6	18
S5	6	14	3	10
S6	3	8	8	29
S7	3	7	6	21
S8	1	3	5	17
S9	7	17	9	22
S10	2	6	5	13
S11	1	3	5	15
S12	5	14		
S13	4	13		

FREQUENCY AND INTENSITY RAW SCORES FOR THE DEFENSE MECHANISM PROJECTION

Subject	Athlete		Non-athlete	
	Frequency	Intensity	Frequency	Intensity
S1	1	3	0	0
S2	1	3	1	3
S3	3	6	1	2
S4	2	5	3	4
S5	1	3	1	2
S6	1	2	2	4
S7	4	6	0	0
S8	0	0	1	1
S9	6	14	3	8
S10	3	4	0	0
S11	6	20	3	5
S12	1	3	7	16
S13	1	3	2	6
S14	0	0	2	6
S15	2	4	3	7
S16	4	10	1	3
S17	1	3	0	0
S18	1	2	5	15
S19	0	0	1	3
S20	1	2	4	13
S21	0	0	0	0
S22	0	0	2	6
S23	3	6	4	8
S24	1	2	3	7

	Team Sport Participants		Individual Sports Participants	
S1	1	3	1	3
S2	1	3	1	3
S3	0	0	3	6
S4	2	4	2	5
S5	4	10	1	3
S6	1	3	1	2
S7	1	2	4	11
S8	0	0	0	0
S9	1	2	6	14
S10	0	0	3	4
S11	0	0	6	20
S12	3	6		
S13	1	2		

FREQUENCY AND INTENSITY RAW SCORES FOR THE DEFENSE MECHANISM UNREALITY

Subject	Athlete		Non-athlete	
	Frequency	Intensity	Frequency	Intensity
S_1	6	10	1	3
S_2	7	15	0	0
S_3	2	7	1	4
S_4	3	6	3	6
S_5	1	2	3	6
S_6	2	6	5	12
S_7	4	11	2	6
S_8	1	2	0	0
S_9	4	11	8	19
S_{10}	6	13	4	9
S_{11}	6	14	4	9
S_{12}	2	4	4	11
S_{13}	4	10	1	4
S_{14}	5	13	2	5
S_{15}	5	11	1	2
S_{16}	5	11	0	0
S_{17}	4	12	1	2
S_{18}	0	0	3	8
S_{19}	1	2	1	2
S_{20}	7	15	10	29
S_{21}	0	0	0	0
S_{22}	0	0	4	12
S_{23}	5	10	2	3
S_{24}	5	10	4	9

	Team Sport Participants		Individual Sports Participants	
S_1	2	4	6	10
S_2	4	10	7	15
S_3	5	13	2	7
S_4	5	11	3	6
S_5	5	11	1	2
S_6	4	12	2	6
S_7	0	0	4	11
S_8	1	2	1	2
S_9	7	15	4	11
S_{10}	0	0	6	13
S_{11}	0	0	6	14
S_{12}	5	10		
S_{13}	5	10		

FREQUENCY AND INTENSITY RAW SCORES FOR THE DEFENSE MECHANISM WITHDRAWAL

Subject	Athlete		Non-athlete	
	Frequency	Intensity	Frequency	Intensity
S_1	6	10	3	8
S_2	1	3	3	7
S_3	4	12	1	2
S_4	2	5	4	6
S_5	3	8	6	12
S_6	6	19	7	17
S_7	7	19	5	11
S_8	3	10	3	8
S_9	8	16	6	20
S_{10}	7	21	4	8
S_{11}	0	0	1	2
S_{12}	3	6	8	20
S_{13}	6	14	6	15
S_{14}	5	12	1	2
S_{15}	6	15	7	15
S_{16}	1	2	1	2
S_{17}	7	16	2	5
S_{18}	0	0	7	23
S_{19}	0	0	4	12
S_{20}	8	16	7	15
S_{21}	0	0	2	6
S_{22}	0	0	5	15
S_{23}	6	14	0	0
S_{24}	2	5	7	13

	Team Sport Participants		Individual Sports Participants	
S_1	3	6	6	10
S_2	6	14	1	3
S_3	5	12	4	12
S_4	6	15	2	5
S_5	1	2	2	8
S_6	7	16	6	19
S_7	0	0	7	19
S_8	0	0	3	10
S_9	8	16	8	16
S_{10}	0	0	7	21
S_{11}	0	0	0	0
S_{12}	6	14		
S_{13}	2	5		

TOTAL FREQUENCY AND INTENSITY RAW SCORES FOR RATIONALIZATION, PROJECTION, UNREALITY, AND WITHDRAWAL

Subject	Athlete		Non-athlete	
	Frequency	Intensity	Frequency	Intensity
S_1	17	37	8	23
S_2	16	42	6	15
S_3	16	46	5	14
S_4	13	34	12	21
S_5	8	23	14	30
S_6	17	56	20	49
S_7	21	63	10	27
S_8	9	29	7	19
S_9	27	63	22	62
S_{10}	21	51	11	26
S_{11}	17	49	11	27
S_{12}	11	30	25	67
S_{13}	16	42	14	42
S_{14}	13	36	10	29
S_{15}	17	42	18	48
S_{16}	16	37	4	12
S_{17}	15	39	5	13
S_{18}	4	9	21	67
S_{19}	2	5	10	29
S_{20}	23	50	27	73
S_{21}	2	6	6	16
S_{22}	1	3	14	42
S_{23}	19	44	10	22
S_{24}	12	30	19	43

	Team Sport Participants		Individual Sports Participants	
S_1	11	30	17	37
S_2	16	42	16	42
S_3	13	36	16	46
S_4	17	42	13	34
S_5	16	37	8	23
S_6	15	39	17	56
S_7	4	9	21	63
S_8	2	5	9	29
S_9	23	50	27	63
S_{10}	2	6	21	51
S_{11}	1	3	17	49
S_{12}	19	44		
S_{13}	13	30		

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