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**A COMPARISON OF THE ANXIETY MEASURES AND MATCH PERFORMANCE
EVALUATIONS OF HIGH SCHOOL WRESTLERS**

BY

RICHARD EDWARD NEWMAN

**A thesis submitted
in partial fulfillment of the requirements for the
degree Master of Science, Major in
Physical Education, South Dakota
State University**

1967

A COMPARISON OF THE ANXIETY MEASURES AND MATCH PERFORMANCE
EVALUATIONS OF HIGH SCHOOL WRESTLERS

Abstract

RICHARD EDWARD NEWMAN

Under the supervision of Associate Professor Glenn Robinson

The purpose of this investigation was to determine if an individual high school wrestler's anxiety measures would serve as an indicator of his match performance.

The subjects were thirty-one varsity wrestlers who were in attendance at Brookings High School, Brookings, South Dakota, during the academic year 1966-1967.

The top twenty-four wrestlers, as determined by weekly competitive challenge matches, received alternate forms of the IPAT 8-Parallel-Form Anxiety Battery forty minutes prior to the "A" and "B" teams' competitive performances in all home wrestling matches. These tests were administered in order to measure the anxiety levels of subjects in a stress situation.

Each subject's performance was independently evaluated immediately upon the termination of his match by a panel of three wrestling judges. The mean of these judges' ratings served as the subject's match performance evaluation.

A base line anxiety measure in a non-stress situation was secured by administering Form F of the IPAT 8-Parallel-Form Anxiety Battery to the subjects.

The data collected during these testing periods were scored and/or recorded and analyzed to determine the degree of relationship existing between the subjects' anxiety measures and their match performance evaluations. The statistical procedures employed on data of individual subjects dealt only with those subjects who wrestled a minimum of five of the seven matches investigated.

There were no statistically significant findings on any of the correlations in the data analyzed.

These results would tend to indicate that for the purposes of this study, the anxiety measures as employed were unreliable methods for the prediction of competitive performance.

**A COMPARISON OF THE ANXIETY MEASURES AND MATCH PERFORMANCE
EVALUATIONS OF HIGH SCHOOL WRESTLERS**

... to Professor ... and to Instructor
William V. ... for their guidance
throughout this study.

... approved to the ... High
School ... for its interest and aid in

This thesis is approved as a creditable and independent investigation by a candidate for the degree, Master of Science, and is acceptable as meeting the thesis requirements for this degree, but without implying that the conclusions reached by the candidate are necessarily the conclusions of the major department.

Thesis Advisor _____ / Date

head of Physical Education Department _____ / Date

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Chapter I

INTRODUCTION

Background for Study

The motor skills which are employed in various competitive sports are extremely complex, and success in execution of these physical skills is interwoven with many other facets of the whole athlete--his intelligence, personality and emotional status, and socio-economic background. However, athletic coaches, because they work closest with the purely physical, mechanical aspects of sports, too often assume that success in competitive performance is almost a pure function of a single process, the physical actions.

Interscholastic athletics, via the very nature of their competitiveness, seemingly produce within their participants varying degrees of manifest anxiety. It may well be that knowledge of this component, anxiety within the competitor, will provide the athletic coach with a crucial key to an understanding of athletic psychology. The answer to why two athletes of similar physical structure and athletic ability fail to perform comparably may possibly be found through an investigation of the effects of their psychic and social climate. Langer and Nelson¹ state that

¹Philip Langer and Dale O. Nelson, "Getting To Really Know Your Players," The Athletic Journal, September, 1963. p. 39.

"maximum performance in the final analysis is not a simple thing to obtain, especially where championship caliber is the objective." However, previous statements were not meant to imply that the physical attributes of athletes are not important factors in their performance. But, according to Langer and Nelson,² "physical ability is not perfectly

²Philip Langer and Dale O. Nelson, "Comments on the Athlete's Playing Performances and His Anxiety," Coach and Athlete, December, 1965. p. 12.

correlated with performance" and this concept suggests that the psychological variables of athletic performance may contribute to competitive success. To this extent, anxiety measurement may prove to be of significance to both coaches and athletes alike.

Statement of Problem

The purpose of this study was to determine if an individual high school wrestler's anxiety measures would serve as an indicator of his match performances.

Limitations

The results of this study were limited by the following conditions:

1. Only members of the Brookings High School, Brookings, South Dakota varsity wrestling teams were used as subjects.

2. Scores on the Institute for Personality and Ability Testing 8-Parallel-Form Anxiety Battery depended upon the frank responses of the subjects.

3. The Institute for Personality and Ability Testing 8-Parallel-Form Anxiety Battery was the only psychological instrument employed in this study.

Definitions

For purposes of this study the following definitions will be used:

1. Anxiety--Defined by Ogilvie³ as "a general

³Bruce Ogilvie, "Future Contributions of Motivational Research in Track," The Journal of Technical Track and Field Athletics, September, 1963. p. 388.

state of apprehension or an uneasiness based upon an undifferentiated fear, or objectless fear."

2. Acute Anxiety--Pre-match or stress anxiety.

3. Chronic Anxiety--General or non-stress anxiety.

4. The Institute for Personality and Ability Testing 8-Parallel-Form Anxiety Battery--This test battery is a psychometric instrument, with eight comparable forms, designated by letters A through H, designed to provide

repeated measurement of acute anxiety fluctuations over time in adults and young adults. Throughout the remainder of this study the Institute for Personality and Ability Testing 8-Parallel-Form Anxiety Battery will be referred to as the IPAT 8-Parallel-Form Anxiety Battery.

5. Base Line Measure--This anxiety level measurement, obtained by administering Form F of the IPAT 8-Parallel-Form Anxiety Battery after completion of the 1966-1967 competitive wrestling season, served as a point from which to compare changes in anxiety levels from a non-stress to a stress situation.

6. Varsity Wrestling Teams--The top twenty-four Brookings High School wrestlers as determined by weekly competitive challenge matches.

7. "A" Team--The team consisting of the number-one wrestlers in each of the twelve respective high school weight divisions, as determined by weekly competitive challenge matches.

8. "B" Team--The team consisting of the number-two wrestlers in each of the twelve respective high school weight divisions, as determined by weekly competitive challenge matches.

Chapter II

REVIEW OF RELATED STUDIES

Introduction

Only recently has limited research been conducted into the personality characteristics of athletes, with specific reference to the anxiety phase and its relationship to athletic performance. Studies in this area are of particular importance to athletic coaches since a competitive contest creates a stressful situation for the contestant.

Report of Pertinent Findings

Ryan,⁴ commenting on the relationship between

⁴Dean Ryan, "What Does Psychology Have To Offer Coaches and Trainers?" PROCEEDINGS National College Physical Education Association for Men, January, 1965. p. 38.

anxiety and performance, states:

. . . there appears to be an inverted-U-shaped relationship between anxiety or stress and performance. If the performer is completely lethargic performance is poor. As anxiety or the stress of the situation increases, performance will improve up to a point. Beyond this point an increase in stress or anxiety tends to impair performance.

The implications for the coach are obvious. The high-strung or overly anxious performer should be calmed down prior to competition, while the more lethargic

individual must be motivated in order to improve and/or avoid decrement in performance.

One of the most important factors affecting sports performance, in many instances, is the personality make-up or emotional aspects of the participants. Langer and Nelson⁵ state:

⁵Langer and Nelson, op. cit., p. 88.

There is little doubt that coaches recognize in an informal untutored way that players' emotional commitments to a game do make a difference, but the ingredient they often lack is objectivity regarding the nature of these psychological variables and their potency in athletic competition.

Langer and Nelson⁶ further suggest that coaches:

⁶Ibid.

. . . utilize an old ally, psychology, and apply more of what this organized body of knowledge has to offer to athletics. In other words, learn more about the psychological aspects of sports performance, use the tools available, and in the final course of events, do a better job of teaching our participants.

In one of the first attempts to measure the emotional impact of impending athletic competition, Johnson⁷

⁷Warren R. Johnson, "A Study of Emotion Revealed in Two Types of Athletic Sports Contests," Research Quarterly, March, 1949. pp. 72-79.

used a subjective questionnaire and the physiological tests of pulse rate, blood pressure, and blood sugar level. The tests were administered to fifteen football players and five wrestlers a few days before, a few hours before, just prior to, and immediately after a contest. Johnson's interpretation of the data suggested that the measures were possible indicators of emotional stress and that wrestlers were more affected emotionally than were football players.

Johnson, Hutton, and Johnson⁸ analyzed the

⁸Warren R. Johnson, Daniel C. Hutton, and Granville B. Johnson, "Personality Traits of Some Champion Athletes As Measured By Two Projective Tests: The Rorschach and H-T-P," Research Quarterly, December, 1954. pp. 485-486.

results of a Rorschach and the House-Tree-Person projective tests given to a group of twelve outstanding national caliber athletes. The analysis suggested that these athletes were characterized by a high level of self-assurance, extreme aggressiveness, high and generalized anxiety, and the ability to express extreme aggressiveness freely. The sample included two wrestlers, but no detailed analysis of the separate sports was presented.

Langer and Nelson⁹ have completed considerable

⁹Langer and Nelson, op. cit., p. 89.

research involving the use of varying anxiety measuring instruments. The subjects, in their initial study, were

members of the Utah State University freshman and varsity basketball squads. By employing the Taylor Manifest Anxiety Scale, they found some athletes to have extremely high scores indicating an unusually high drive level which frequently adversely interfered with their physical abilities in competition. Others were found to be low in their scores, and thus had little drive. These individuals were not likely to go all-out, nor to possess the needed competitiveness for top-flight performance.

Utilizing a second anxiety test, the Sarason Autobiographical Survey, in this same study, Nelson and Langer¹⁰ extracted the Test Anxiety and General Anxiety

¹⁰Ibid.

questions of the Sarason test and administered them a second time in the dressing room before a varsity game. This portion of the study revealed that game anxiety, if not too high, appears to be good, whereas general anxiety can, and often does, interfere with performance.

Recently, Scheier and Cattell¹¹ developed the IPAT

¹¹Ivan H. Scheier and Raymond B. Cattell, Handbook and Test Kit for the IPAT 8-PARALLEL-FORM ANXIETY BATTERY, p.1.

8-Parallel-Form Anxiety Battery. This psychometric instrument is designed to provide repeated measurement of anxiety

fluctuations over time in adults and young adults.

Langer and Nelson¹² administered the IPAT

¹²Langer and Nelson, op. cit., p. 12.

8-Parallel-Form Anxiety Battery to members of the Utah State University football team periodically during the 1964 football season. Form A was administered to the team members two weeks prior to the opening game of the season in order to establish an anxiety base line from which to compare changes in anxiety levels. Forms B and C were then administered to these same athletes during the pre-game meals preceding their first and fourth games of the season. In addition, each participant's performance, during these two contests, was evaluated by the Utah State University football coaching staff.

Two important findings were noted almost immediately.¹³

¹³Ibid., p. 23.

1. Anxiety was responsible for a very significant part of player performance in the first game with decreasing relatedness in later games.

2. Secondly, players whose anxiety level was extremely high or extremely low at the pre-game meal (Form B or C) tended to perform rather poorly. On the other hand, if a player shifted from the pre-season score to a higher game score or

dropped from a very high pre-season score to a lower score at the pre-game meal, his performance tended to be good. In other words, if it had been high for the pre-season score (Form A) and dropped to a lower score before the game (Form B or C), or if he moved from a very low score at the pre-season testing to a higher game score, he tended to do better.

Langer,¹⁴ in a more recent study, tested the 1964

¹⁴Philip Langer, "Some Psychological Implications of Varsity Football Performance," Coach and Athlete, September, 1966. p. 30.

Utah State University football team over a full season. The IPAT 8-Parallel-Form Anxiety Battery was again the psychometric instrument selected for use in this study. Some of the relationships revealed from this study between the direct measures of anxiety and performance were:¹⁵

¹⁵Ibid., p. 35.

1. The pre-game anxiety score was negatively related to performance. The lower the anxiety score, the better the performance. This closely parallels findings in psychology which indicate that for complex motor activities high anxiety is negatively related to performance.

2. Secondly, they noted a positive relationship in the shift from anxiety as measured in the pre-season testing (Form A) and the anxiety score obtained at the pre-game meal for each game. More precisely, the better players seem to shift from relatively low anxiety in a non-stress situation to higher pre-game

anxiety; but at the same time, and this is critical, the anxiety never got out of control. The poorer players showed either (1) a high anxiety in both the stress and the non-stress testing situations, and/or (2) allowed their anxiety to get out of control before the game.

3. Third, the average anxiety score for the season was positively related to game performance. This anxiety measure, we suggest, is a consistency measure. Over and over again we noted that the better players showed certain predictable patterns of stress prior to each game. Indeed, if these patterns were missing prior to game one could suspect the adequacy of the player performance for that game.

Summary

These studies seem to suggest that psychometric instruments and/or measurements may yield a considerable amount of important, objective information on the athlete which can be used to predict, guide, and cope with competitors in teaching and competitive situations.

Chapter III

PROCEDURE FOR OBTAINING DATA

Introduction

The description of the subjects, instrument for obtaining information, and details of procedure are included in this chapter.

Subjects

The subjects for this study were varsity wrestlers who were in attendance at Brookings High School, Brookings, South Dakota, during the academic year of 1966-1967. Thirty-one varsity wrestlers participated in the study. Of these thirty-one participants, five were freshman, four sophomores, seven juniors, and fifteen were seniors. They ranged in age from fourteen to eighteen years.

Brookings High School and seven South Dakota high schools of similar size comprise the Eastern South Dakota Conference. Brookings High School's wrestling team was undefeated in dual meet competition, won the Eastern South Dakota Conference Wrestling Tournament, and won both the Sectional and the 1967 State wrestling championship.

Instruments for Obtaining Information

The Institute for Personality and Ability Testing 8-Parallel-Form Anxiety Battery was the only psychometric instrument employed in this study.

This test consists of eight equivalent forms, identified by letters A through H, of a paper and pencil, multiple choice anxiety questionnaire developed from a large factor analytic study.

Kjeldergaard¹⁶ gave the following brief de-

¹⁶Paul M. Kjeldergaard, The Sixth Mental Measurements Yearbook, p. 263.

scriptions of the seven subtests comprising each of the eight equivalent forms:

(a) questionnaire items (10 items)
 ----the usual personality inventory type item with trichotomous choices, e.g., true, false, or in between;

(b) susceptibility to annoyance (7 items)----a list of events to be rated on a three-point scale as to how irritating the respondent would find them;

(c) lack of confidence in untried skills (7 items)----the respondent first rates the frequency with which he has had certain types of experiences and then judges his competence to handle such situations, only those situations with which he has had little experience being scored;

(d) readiness to confess common faults (7 items)----dichotomous responses to a list of "human frailties";

(e) emotionality of comment (4 items) ----trichotomous choice responses to "newspaper items";

(f) anxiety-tension symptom self-checklist (8 items)----respondents utilize a three-point scale to rate themselves in comparison to others as to the degree to which they possess certain behavioral characteristics, e.g., conceit, or the frequency of certain somatic symptoms, e.g., rapid pulse;

(g) susceptibility to embarrassment (7 items)----respondents rate situations on a three-point scale as to the degree of embarrassment the situation would arouse.

The writer received permission from the Brookings High School Athletic Director and the wrestling coaches to administer the IPAT 8-Parallel-Form Anxiety Battery to the high school varsity wrestling teams. Reproduction rights to the test battery were obtained from the Institute for Personality and Ability Testing by purchasing the IPAT 8-Parallel-Form Anxiety Battery Handbook and Test Kit.

In the writer's attempt to measure the anxiety levels of the subjects in a stress situation, alternate forms of the IPAT 8-Parallel-Form Anxiety Battery were administered to the "A" and "B" team members forty minutes prior to their competitive performances in all home wrestling matches. Two separate testing situations were required since the "B" team competed prior to the "A" team

matches. However, all "B" or "A" team members completed their test simultaneously during this period. Thus an individual wrestling in an upper division weight class would have taken his test more than forty minutes prior to his actual competition.

IPAT 8-Parallel-Form Anxiety Battery Forms A and H were omitted from the battery of tests administered to the "B" team participants. These two forms possessed the lowest validity and reliability coefficients of the eight equivalent forms. The remaining six forms were used, through counterbalancing of order of administration among forms, to establish the anxiety measures of "B" team subjects in a stress situation. Form F was utilized to establish the "B" team post-season base line measure in a non-stress situation.

Form H of the IPAT 8-Parallel-Form Anxiety Battery was omitted from the battery of tests administered to the "A" team participants, while Form F was withheld for the establishment of the post-season base line measure in a non-stress situation. The remaining six forms were used, through counterbalancing of order of administration among forms, to establish the anxiety measure of "A" team subjects in a stress situation.

The differences in administrative procedure of forms between the "A" and "B" teams were employed in the interest of the test publishers.

The investigator supplied each subject with the proper test form for each match, and the subjects completed their tests in the dressing room prior to their pre-match warm-up period. The tests were untimed and each full form required no more than ten to fifteen minutes for its completion. The actual test administrative procedures and instructions were outlined in the Handbook and Test Kit for the IPAT 8-Parallel-Form Anxiety Battery.¹⁷

¹⁷Scheier and Cattell, op. cit., p. 2.

Prior to the competition of the subjects, a panel of three competent wrestling judges was furnished with a form listing the wrestler's name, weight class, and a five-point scale for evaluative purposes. The numerical value of five designated a "Good" performance, and performance could be scaled downward to a rating of one, which indicated a "Poor" performance.

Immediately upon termination of each subject's match, the judges independently evaluated the subject's performance by circling the designated numeral of the rating scale which, in their opinion, best coincided with the subject's performance.

Through a search of the literature and by utilizing the advice of experts in the wrestling field, the standards involved in match performance evaluations included:

The physical attributes and ability level of each wrestler and his opponent; basic fundamentals or skills utilized in participation; and the aggressiveness and perseverance with which the wrestler engaged in performance. In the writer's opinion, the use of these factors in performance evaluations permitted a more valid establishment of a wrestler's total match performance than match score results alone would have indicated.

The investigator used the standardized test scoring methods provided in the IPAT 8-Parallel-Form Anxiety Battery Handbook and recorded the scores of each subject's form on an accumulative performance rating sheet. The writer also recorded the average of each subject's match performance evaluations on this same accumulative performance rating sheet.

A base line anxiety measure in a non-stress situation was secured by administering Form F of the IPAT 8-Parallel-Form Anxiety Battery to the subjects one month after completion of the 1966-1967 competitive wrestling season. This test administration date was chosen because the investigator received the IPAT 8-Parallel-Form Anxiety Battery material from the publishing company too late to secure a pre-season, non-stress base line measure and this period seemed to provide a suitable time when these subjects were

not competitively involved with training or with competition in a spring sport.

Discussion

The statistical analysis of the data collected during the investigation is presented in this chapter.

Reliability of Data

Reliability of the 100 Yard Dash

The scores of the three judges' ratings followed the same pattern in all the matches. The mean of the three judges' ratings was the best performance evaluation and in this investigation.

Reliability of the 100 Yard Dash

The test scores of the IAAF 5-Parallel-Dash Society Battery were checked for all subjects and no correction or change was necessary. Only the test scores of subjects who completed 4 minutes or five of the seven matches were included.

Reliability of Data

As reported by Kautler and Cattell,¹⁰ the inter-form

¹⁰Kautler and Cattell, 1957, p. 7.

Chapter IV

ANALYSIS OF DATA

Introduction

The statistical analysis of the data collected during this investigation appears in this chapter.

Scoring of Data

Match Performance Evaluation

The subject received three judges' ratings following each of his wrestling matches. The mean of the three judges' ratings was the match performance evaluation used in this investigation.

Anxiety Measure

The raw scores of the IPAT 8-Parallel-Form Anxiety Battery forms were obtained for all subjects and no conversion of these scores was necessary. Only the raw scores of subjects who wrestled a minimum of five of the seven matches were investigated.

Reliability of Data

According to Scheier and Cattell,¹⁸ the inter-form

¹⁸Scheier and Cattell, loc. cit., p. 2.

Battery ranged from +.36 to +.67 and averaged about +.60 for the three or four best forms. Individual form reliability coefficients for the IPAT 8-Parallel-Form Anxiety Battery¹⁹

¹⁹Ibid.

are found in Appendix A. However, Bendig,²⁰ in more recent

²⁰A. W. Bendig and Gail Bruder, "The Effect of Repeated Testing on Anxiety Scale Scores," Journal of Consulting Psychology, August, 1962. p. 392.

research dealing with this battery, found inter-form reliabilities ranging from +.60 to +.85 and averaging +.75. These discrepancies, according to Kjeldergaard,²¹ are ex-

²¹Kjeldergaard, op. cit., p. 263.

plained by differences in procedure and intervals between administration. The latter results are thought to be more appropriate for the usual application of these instruments.

Validity of Data

The validity coefficients for the 8-Parallel-Form Anxiety Battery, based upon the correlation of the test with an anxiety factor (a pool of 600 anxiety measure items) ranged from +.50 to +.68 with a median coefficient of +.54. Although technically these are part-whole correlations, the proportion of test items included in the criterion measure

was so small that this is not a serious limitation.²² Indi-

²²Ibid.

vidual form validity coefficients for the IPAT 8-Parallel-Form Anxiety Battery²³ are recorded in Appendix A.

²³Scheier and Cattell, loc. cit.

Judges and Ratings

The judges employed in this investigation were competent and knowledgeable wrestling personnel. In addition, the judges had adequate opportunities to observe the subjects prior to rating the subjects in competitive situations.

The investigator attempted to eliminate the element of subjectivity of the judges' ratings by providing the judges with a checklist containing the factors to be judged and a scale for standardizing the ratings. An evaluation form, containing standards and procedures, is presented in Appendix B.

Analysis of Data

The rank-difference coefficient of correlation method, as described by Garrett,²⁴ was employed in order to

²⁴Henry E. Garrett, Elementary Statistics, pp. 90-92.

determine if there was any statistical relationship between the following variables:

- A. Subject's individual IPAT 8-Parallel-Form Anxiety Battery scores, ranked in order from high to low, with corresponding rank ordered match performance evaluations.
- B. Subjects' individual average IPAT 8-Parallel-Form Anxiety Battery scores, ranked in order from high to low, with their corresponding rank ordered average match performance evaluations.
- C. Individual "A" and "B" team subjects' average IPAT 8-Parallel-Form Anxiety Battery scores, ranked in order from high to low, with their corresponding rank ordered average match performance evaluations.
- D. Team IPAT 8-Parallel-Form Anxiety Battery scores, ranked in order from high to low, with corresponding rank ordered match performance evaluations.
- E. Team total IPAT 8-Parallel-Form Anxiety Battery scores, ranked in order from high to low, with corresponding total rank ordered match performance evaluations.
- F. Team average IPAT 8-Parallel-Form Anxiety Battery scores, ranked in order from high to low, with corresponding rank ordered average match performance evaluations.

A technique for the calculation of product-moment correlation coefficients directly from ungrouped scores, as described by Garrett,²⁵ was employed in order to determine

²⁵Ibid., p. 93.

if there was any statistical relationship between the following variables:

- A. Deviations of a subject's IPAT 8-Parallel-Form match anxiety scores, from his particular form's standard mean score, and his corresponding match performance evaluations.
- B. Deviations between a subject's base line and IPAT 8-Parallel-Form match anxiety scores and his corresponding match performance evaluations.

The writer chose to employ the .05 level of significance for use in this investigation. A method for determining the significance of coefficients of correlations, as described by Garrett,²⁶ was then utilized to evaluate

²⁶Ibid., pp. 104-105.

the significance of the obtained correlation coefficients. On this basis, the null hypothesis ($r = 0.00$) was then either accepted or rejected.

Findings

The data from this investigation were analyzed statistically and are reported in this section. The statistical procedures employed on data of individual subjects dealt only with those subjects who wrestled a minimum of

five of the seven matches investigated.

Individual Rank-Difference

Table I shows a summary of the individual rho rank-difference correlation coefficients. Correlation coefficients were found to range from $-.73$ to $+.70$, with a mean correlation coefficient of $+.04$. The null hypothesis was accepted.

Individual Average Rank-Difference

A rho correlation coefficient of $-.02$ was obtained when using as variables the subjects' average IPAT 8-Parallel-Form Anxiety Battery scores and average match performance evaluations. The null hypothesis was accepted.

Individual "A" and "B" Rank-Difference

Rho correlation coefficients of $+.22$ for the "A" squad, and 0.00 for the "B" squad, were found when comparing the teams as separate squads. The null hypothesis was accepted.

Team Rank-Difference

Table II shows a summary of the "A" and "B" team rho rank-difference correlation coefficients. "A" team correlation coefficients were found to range from $-.39$ to $+.63$, with a mean correlation coefficient of $+.11$. Correlation coefficients for the "B" team ranged from $-.64$ to

TABLE I

Individual Rank-Difference Coefficients of Correlation

Subject	Rho Rank-Difference
3	+.17
4	+.20
5	+.07
6	+.35
7	+.07
8	-.50
9	-.14
10	+.21
11	-.26
12	+.15
13	+.07
14	-.21
15	+.17
16	-.20
17	+.22
18	.00
19	+.60
20	-.73
21	+.70
22	-.02
23	+.40
24	-.54
25	+.12

TABLE II

Team Rank-Difference Coefficients of Correlation

Match	"A" Team Rho Rank-Difference	"B" Team Rho Rank-Difference
Lincoln High School	-.39	+.05
Yankton High School	+.21	+.28
Watertown High School	+.11	+.19
Aberdeen High School	-.31	-.64
Mitchell High School	+.08	+.75
Madison High School	+.63	-.01
Pierre High School	+.41	-.06

+0.75, with a mean correlation coefficient of +0.08. In both cases the null hypothesis was accepted

Team Total Rank-Difference

Team total anxiety scores and match performance evaluations yielded rho correlation coefficients of +0.14 for the "A" team and +0.11 for the "B" team. The null hypothesis was accepted.

Team Average Rank-Difference

Team average anxiety scores and match performance evaluations yielded rho correlation coefficients of -0.11 and +0.46 for the "B" and "A" teams respectively. The null hypothesis was accepted.

Deviations from the Standard Mean Score

Table III shows a summary of the product-moment correlation of coefficient data. Correlation coefficients were found to range from -0.61 to +0.74, with a mean correlation coefficient of +0.19. The null hypothesis was accepted.

Deviations from Base Line

Table IV shows a summary of the product-moment correlation of coefficient data. Correlation coefficients were found to range from -0.66 to +0.67, with a mean correlation coefficient of -0.04. The null hypothesis was accepted.

TABLE III

Correlation Coefficients Derived from Deviations from the Standard Mean Score of Individual IPAT 8-Parallel-Form Anxiety Scores and Corresponding Match Performance Evaluations

Subject	Product-Moment Correlation Coefficient	Subject	Product-Moment Correlation Coefficient
3	+.74	15	+.39
4	+.31	16	+.46
5	+.26	17	+.27
6	+.17	18	-.34
7	+.41	19	+.21
8	-.15	20	+.24
9	-.29	21	+.30
10	-.07	22	+.55
11	-.61	23	+.53
12	-.10	24	+.34
13	-.07	25	+.39
14	+.48		

TABLE IV

Correlation Coefficients Derived from Deviations Between Base Line and Individual Match Anxiety Scores and Corresponding Match Performance Evaluations

Subject	Product-Moment Correlation Coefficient	Subject	Product-Moment Correlation Coefficient
3	+.19	15	+.23
4	+.07	16	-.66
5	-.07	17	-.13
6	-.04	18	+.28
7	+.27	19	+.45
8	-.30	20	-.38
9	-.30	21	+.37
10	-.03	22	+.19
11	-.57	23	-.51
12	+.08	24	+.67
13	+.02	25	-.27
14	-.37		

Summary of Findings

In this investigation all rank difference correlation coefficients indicated neither a significant positive nor negative relationship between anxiety measures, as determined by the IPAT 8-Parallel-Form Anxiety Battery, and match performance evaluations, as determined by a panel of three competent wrestling judges.

Pearson product-moment correlation coefficients revealed no statistically significant relationship between either a subject's deviations from his base line measure or deviations from his standard mean score and his corresponding match performance evaluations.

Discussion of Findings

From the results obtained during this investigation it would appear that anxiety measurements, as determined solely by the IPAT 8-Parallel-Form Anxiety Battery, do not seem to be highly valid or reliable predictors of an individual's competitive performance.

While the psychometric instrument employed by the writer in this study was selected because of its eight comparable forms, the low validity and reliability of the measuring tool may have had an intervening influence on the results of this investigation.

The writer did not wish to venture beyond this point of discussion, since he realizes the need for extreme caution and conservatism in drawing conclusions from a psychological investigation of this nature.

The purpose of this investigation was to determine if an individual who is... (faded text)

The subjects were... (faded text)

The subjects were... (faded text)

The subjects were... (faded text)

The subjects were... (faded text)

Chapter V

SUMMARY

Problem

The purpose of this investigation was to determine if an individual high school wrestler's anxiety measures would serve as an indicator of his match performances.

Data

The subjects were thirty-one varsity wrestlers who were in attendance at Brookings High School, Brookings, South Dakota, during the academic year 1966-1967.

The top twenty-four wrestlers, as determined by weekly competitive challenge matches, received alternate forms of the IPAT 8-Parallel-Form Anxiety Battery forty minutes prior to their competitive performances in all home wrestling matches. These tests were administered in order to measure the anxiety levels of subjects in a stress situation.

Each subject's performance was independently evaluated immediately upon the termination of his match by a panel of three judges. The mean of these judges' ratings served as the subject's match performance evaluations.

A base line anxiety measure in a non-stress situation was secured by administering Form F of the IPAT 8-

Parallel-Form Anxiety Battery to the subjects one month after completion of the competitive wrestling season.

The data collected during these testing periods were scored and/or recorded and analyzed to determine the degree of relationship between the subjects' anxiety measures and match performance evaluations. In order to determine if there was any statistical relationship existing between these variables, rank order and product-moment correlation coefficient methods were applied to the differing variables involved. These correlation coefficients were then evaluated as to their significance at the .05 level of significance.

Findings

The results obtained in this investigation are as follows:

1. All rank difference correlation coefficients indicated neither a significant positive nor a negative relationship between anxiety measures, as determined by the IPAT 8-Parallel-Form Anxiety Battery and match performance evaluations.

2. Pearson product-moment correlation coefficients revealed no statistically significant relationship between either a subject's deviations from his base line measure or deviations from his standard mean score and his

corresponding match performance evaluations.

Conclusions

There were no statistically significant findings on any of the correlations in data analyzed.

These results would tend to indicate that for the purposes of this study, the anxiety measures employed were unreliable methods for the prediction of competitive performance.

No further conclusions are warranted on the basis of this investigation since the writer felt he was not competently qualified in the areas of human behavior or psychological evaluation.

Recommendations for Further Study

The investigator proposes the following recommendations for further study:

1. That a similar study be undertaken over an entire wrestling season.
2. That a similar study be undertaken employing various physiological tests to validate anxiety measurement.
3. That a similar study be completed with emphasis on anxiety levels following matches lost.
4. That similar studies be completed in non-combative athletics.

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APPENDIX A

Construct Validity (Correlation with Anxiety Factor) and Inter-Form Reliabilities
for the 8-Parallel-Form Anxiety Battery

Form	Construct Validity: Correlation* with Anxiety Factor	Inter-Form Reliability: Average Correlation* with Other Seven Forms**
A	+ .56	+ .46
B	+ .54	+ .53
C	+ .53	+ .53
D	+ .64	+ .50
E	+ .51	+ .53
F	+ .68	+ .57
G	+ .53	+ .51
H	+ .50	+ .41

LEGEND

*Pearson product-moment correlation coefficients.

**The twenty-eight possible correlations between forms ranged from +.36 to +.67,
and averaged about +.60 for the three or four best forms.

APPENDIX B

Evaluation Standards and Procedures

Each wrestler will be independently rated by a panel of three competent wrestling judges. The rating will take place immediately following the conclusion of the wrestler's match performance.

In order to record match evaluation ratings, each judge will be furnished with a form listing the wrestler's name, weight class, and a five-point rating scale for evaluative purposes. The numerical value of five (5) designates a "Good" performance, and performance may be scaled downward to a rating of one (1), which indicates "Poor" performance. The following is an example of the previously described rating form:

Name	Weight Class	Match Evaluation Rating Scale				
_____	_____	5	4	3	2	1

Immediately upon termination of each wrestler's match, the judges will individually evaluate performance by circling the designated numeral of the rating scale which, in their opinion, best coincides with the wrestler's performance.

Through a search of the literature and by utilizing the advice of experts in the wrestling field, the standards involved in match performance evaluations include: the physical attributes and ability level of each wrestler and his opponent; basic fundamentals or skills utilized in participation; and the aggressiveness and perseverance with which the wrestler engages in performance. In the writer's opinion, the use of these factors in performance evaluation will permit a more valid establishment of the wrestler's total match performance than match score results alone would indicate.

APPENDIX C

**Subjects' Individual IPAT 8-Parallel-Form Anxiety Scores and
Corresponding Match Performance Evaluations**

"A" Team

Weight Class	Lincoln H. S.				Yankton H. S.				Watertown H. S.				Aberdeen H. S.			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
95	16	D	5.03	5.0	16	C	6.88	4.3	16	B	7.16	4.6	16	A	7.48	4.3
103	12	B	6.19	3.3	12	A	6.56	5.0	12	G	6.17	3.3	12	E	7.40	3.0
112	14	G	7.80	4.6	14	E	7.21	3.6	14	D	7.40	4.3	14	C	5.99	4.6
120	5	A	7.11	4.0	10	B	5.98	4.6	10	A	4.64	4.3	10	G	4.74	4.6
127	10	C	6.66	5.0	21	G	8.32	5.0	21	E	8.88	4.6	21	D	8.28	3.0
133	13	E	9.13	3.3	13	D	6.17	4.3	13	C	6.62	2.6	13	B	7.87	3.6
138	20	E	6.49	4.6	20	D	7.43	4.3	20	C	6.28	5.0	20	B	6.09	4.6
145	18	G	5.46	4.3	18	E	6.10	4.0	18	D	5.28	4.6	18	C	6.07	3.0
154	11	C	5.94	4.6	11	B	5.26	5.0	11	A	6.42	3.0	11	G	4.49	4.6
165	7	D	6.46	4.6	7	C	5.68	2.6	15	B	6.54	4.0	15	A	6.32	5.0
180	17	A	7.75	3.6	17	G	6.32	3.6	17	E	5.70	3.6	17	D	6.42	5.0
Hwt	19	B	6.14	5.0	19	A	7.04	5.0	19	G	6.55	4.3	19	E	7.39	5.0

LEGEND

- A = Subjects**
- B = IPAT 8-Parallel Anxiety Battery Forms. Counterbalancing of test battery forms.**
- C = IPAT 8-Parallel Anxiety Battery Form Scores. Higher score indicates higher anxiety level.**
- D = Mean Match Performance Evaluation by Judges. Higher score indicates better performance.**

APPENDIX C (Continued)

Weight Class	Mitchell H. S.				Madison H. S.				Pierre H. S.			
	A	B	C	D	A	B	C	D	A	B	C	D
95	16	G	6.92	4.6	16	E	7.34	5.0	16	D	6.31	5.0
103	12	D	6.05	3.3	12	C	5.30	3.3	12	B	6.42	5.0
112	14	B	8.61	3.3	14	A	7.73	4.6	14	G	8.86	4.3
120	10	E	5.31	4.0	5	F	5.90	3.0	10	D	6.64	3.6
127	27	C	7.61	4.6	4	F	8.40	5.0	27	A	10.11	5.0
133	13	A	7.15	5.0	27	B	9.24	5.0	13	G	5.31	3.3
138	20	A	6.55	2.6	20	G	5.72	5.0	20	E	6.92	4.0
145	18	B	5.48	4.0	18	A	7.58	5.0	18	G	6.26	4.0
154	11	E	6.51	4.6	11	D	5.17	4.3	11	C	6.42	2.6
165	15	G	6.50	5.0	15	E	5.69	4.3	15	D	6.27	4.0
180	17	C	6.65	3.6	17	B	6.68	4.3	17	A	6.23	4.3
Hwt	19	D	5.88	4.6	19	C	6.71	Forfeit	19	B	7.45	5.0

A = Points

B = IJOF B-Skilled Auxiliary Battery Form, Composite Average of Test Battery Form.

C = IJOF B-Skilled Auxiliary Battery Form Score. Higher score indicates higher auxiliary level.

D = Team Match Performance Evaluation by Judges. Higher score indicates better performance.

APPENDIX D

Subjects' Individual IPAT 8-Parallel-Form Anxiety Scores and
Corresponding Match Performance Evaluations

"B" Team

Weight Class	Lincoln H. S.				Yankton H. S.				Watertown H. S.				Aberdeen H. S.			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
95	6	B	6.73	3.6	6	G	7.79	4.0	6	F	8.31	2.6	6	E	9.43	2.0
103	25	C	6.19	2.3	25	B	5.72	Forfeit	25	G	6.44	3.3	25	F	7.03	3.0
112	31	B	7.40	4.6	31	G	7.74	4.3	31	F	9.26	5.0	31	E	8.60	2.6
120	30	E	6.73	2.3	2	D	5.62	3.6	5	C	5.74	3.0	5	B	6.23	4.6
127	26	E	7.10	2.0	4	D	6.39	5.0	4	C	7.58	4.0	4	B	7.28	4.3
133	27	D	6.70	2.6	3	C	5.48	1.6	3	B	6.02	2.3	3	G	4.48	2.6
138	8	F	8.98	4.3	8	E	7.44	2.3	8	D	6.35	4.6	8	C	7.63	1.3
145	29	C	6.38	3.0	23	B	9.26	5.0	23	G	6.87	3.3	23	F	8.21	2.6
154	9	F	8.84	3.0	9	E	7.85	2.3	9	D	6.67	3.0	9	C	7.29	4.3
165	28	G	6.85	4.6	15	F	7.38	4.6	7	E	6.06	4.6	7	D	5.89	5.0
180	22	D	8.13	2.6	22	C	6.63	2.6	22	B	7.68	5.0	22	G	5.63	5.0
Hwt	24	G	5.54	5.0	24	F	7.57	4.6	24	E	7.79	2.3	24	D	6.22	5.0

LEGEND

- A = Subjects
- B = IPAT 8-Parallel Anxiety Battery Forms. Counterbalancing of test battery forms.
- C = IPAT 8-Parallel Anxiety Battery Form Scores. Higher score indicates higher anxiety level.
- D = Mean Match Performance Evaluation by Judges. Higher score indicates better performance.

APPENDIX D (Continued)

Weight Class	Mitchell H. S.				Madison H. S.				Pierre H. S.			
	A	B	C	D	A	B	C	D	A	B	C	D
95	1	E	6.67	2.0	6	C	9.46	4.3	6	B	9.83	4.3
103	6	D	8.94	4.6	25	D	8.09	5.0	25	C	8.58	2.3
112	2	D	4.76	2.6	2	C	6.21	Forfeit	2	E	7.68	5.0
120	5	G	5.75	3.3	30	F	5.69	4.6	30	E	8.83	3.6
127	4	G	7.89	4.3	26	F	7.28	3.3	4	E	7.09	3.6
133	3	F	4.04	1.6	3	E	5.33	3.3	3	D	4.34	2.3
138	8	B	7.17	2.0	8	G	5.99	5.0	8	F	7.44	2.3
145	23	E	8.72	5.0	23	D	8.02	2.6	23	C	7.43	3.6
154	9	B	8.33	5.0	9	G	5.45	4.6	9	F	7.58	3.0
165	7	C	5.78	Forfeit	7	B	7.87	4.6	7	G	5.88	5.0
180	22	F	7.81	5.0	22	E	6.81	4.3	22	D	7.22	4.3
Hwt	24	C	6.04	4.3	24	B	6.78	3.6	24	G	5.38	4.6

APPENDIX E

**Subjects' Individual Average Anxiety Score and Corresponding
Average Match Performance Evaluation**

Subject	Number of Matches Wrestled	Average Anxiety Score	Average Match Performance Evaluation
1	1	6.67	2.00
2	4	6.07	3.73
3	6	4.95	2.28
4	6	7.44	4.37
5	5	6.15	3.58
6	7	8.64	3.63
7	7	6.23	4.40
8	7	7.29	3.11
9	7	7.44	3.60
10	6	5.66	4.35
11	7	5.74	4.10
12	7	6.30	3.74
13	6	7.04	3.68
14	7	7.66	4.19
15	6	6.45	4.48
16	7	6.73	4.69
17	7	6.54	4.00
18	7	6.03	4.13
19	7	6.74	4.82
20	7	6.50	4.30
21	6	8.74	4.53
22	7	7.13	4.11
23	6	8.09	3.68
24	7	6.47	4.20
25	5	7.27	3.18
26	2	7.19	2.65
27	1	6.70	2.66
28	1	6.85	4.66
29	1	6.38	3.00
30	3	7.08	3.50
31	4	8.25	4.13

APPENDIX F

Team Total and Average Anxiety Measures and Corresponding Total
and Average Match Performance Evaluations

"A" Team

Match	Total Anxiety Score	Total Match Performance Evaluation	Average Anxiety Score	Average Match Performance Evaluation
Lincoln H. S.	80.16	51.9	6.68	4.33
Yankton H. S.	78.95	51.3	6.58	4.28
Watertown H. S.	77.64	48.2	6.47	4.02
Aberdeen H. S.	78.54	50.3	6.55	4.19
Mitchell H. S.	79.22	49.2	6.60	4.10
Madison H. S.	81.46	48.8	6.79	4.44
Pierre H. S.	83.20	50.1	6.93	4.18

APPENDIX G

**Team Total and Average Anxiety Measures and Corresponding Total
and Average Match Performance Evaluations**

"B" Team

Match	Total Anxiety Score	Total Match Performance Evaluation	Average Anxiety Score	Average Match Performance Evaluation
Lincoln H. S.	85.57	39.9	7.13	3.33
Yankton H. S.	84.87	40.0	7.07	3.63
Watertown H. S.	84.77	43.0	7.06	3.58
Aberdeen H. S.	83.92	42.3	6.99	3.53
Mitchell H. S.	81.90	39.7	6.83	3.61
Madison H. S.	82.98	45.2	6.92	4.11
Pierre H. S.	87.28	43.9	7.27	3.65

A = Standard Mean IMA 5-Parallel Anxiety Battery Form Scores. Mean values according to Form.

B = Deviation of IMA 5-Parallel Anxiety Battery Form Scores from Standard Mean IMA 5-Parallel Anxiety Battery Form Score.

C = Mean Match Performance Evaluation by Judges. Higher score indicates better performance.

APPENDIX H

Deviations From the Standard Mean Score of Individual IPAT 8-Parallel-Form Anxiety Scores and Corresponding Match Performance Evaluations

"A" Team

Weight Class	Lincoln H. S.			Yankton H. S.			Watertown H. S.			Aberdeen H. S.		
	A	B	C	A	B	C	A	B	C	A	B	C
95	6.00	- .97	5.0	6.40	+ .48	4.3	6.40	+ .76	4.6	6.70	+ .78	4.3
103	6.40	- .21	3.3	6.70	- .14	5.0	6.00	+ .17	3.3	6.60	+ .80	3.0
112	6.00	+1.80	4.6	6.60	+ .61	3.6	6.00	+1.40	4.3	6.40	- .41	4.6
120	6.70	+ .41	4.0	6.40	- .42	4.6	6.70	-2.06	4.3	6.00	-1.26	4.6
127	6.40	+ .26	5.0	6.00	+2.32	5.0	6.60	+2.28	4.6	6.00	+2.28	3.0
133	6.60	+2.53	3.3	6.00	+ .17	4.3	6.40	+ .22	2.6	6.40	+1.47	3.6
138	6.60	- .11	4.6	6.00	+1.43	4.3	6.40	- .12	5.0	6.40	- .31	4.6
145	6.00	- .54	4.3	6.60	- .50	4.0	6.00	- .72	4.6	6.40	- .33	3.0
154	6.40	- .46	4.6	6.40	-1.14	5.0	6.70	- .28	3.0	6.00	-1.51	4.6
165	6.00	+ .46	4.6	6.40	- .72	2.6	6.40	+ .14	4.0	6.70	- .38	5.0
180	6.70	+1.05	3.6	6.00	+ .32	3.6	6.60	- .90	3.6	6.00	+ .42	5.0
Hwt	6.40	- .26	5.0	6.70	+ .34	5.0	6.00	+ .55	4.3	6.60	+ .79	5.0

LEGEND

- A = Standard Mean IPAT 8-Parallel Anxiety Battery Form Scores. Mean varies according to form.
- B = Deviation of IPAT 8-Parallel Anxiety Battery Form Scores from Standard Mean IPAT 8-Parallel Anxiety Battery Form Score.
- C = Mean Match Performance Evaluation by Judges. Higher score indicates better performance.

APPENDIX H (Continued)

Weight Class	Mitchell H. S.			Madison H. S.			Pierre H. S.		
	A	B	C	A	B	C	A	B	C
95	6.00	+ .92	4.6	6.60	+ .74	5.0	6.00	+ .31	5.0
103	6.00	+ .05	3.3	6.40	-1.10	3.3	6.40	+ .02	5.0
112	6.40	+2.21	3.3	6.70	+1.03	4.6	6.00	+2.86	4.3
120	6.60	-1.29	4.0	6.20	- .30	3.0	6.00	+ .64	3.6
127	6.40	+1.21	4.6	6.20	+2.20	5.0	6.70	+3.41	5.0
133	6.70	+ .45	5.0	6.40	+2.84	5.0	6.00	- .69	3.3
138	6.70	- .15	2.6	6.00	- .28	5.0	6.60	+ .32	4.0
145	6.40	- .92	4.0	6.70	+ .88	5.0	6.00	+ .26	4.0
154	6.60	- .09	4.6	6.00	- .83	4.3	6.40	+ .02	2.6
165	6.00	+ .50	5.0	6.60	- .91	4.3	6.00	+ .27	4.0
180	6.40	+ .25	3.6	6.40	+ .28	4.3	6.70	- .47	4.3
Hwt	6.00	- .12	4.6	6.40	+ .31	Forfeit	6.40	+1.05	5.0

A = Standard Mean 12AT 5-Parallel Army Battery Pace Scores, may vary according to form.

B = Deviation of 12AT 5-Parallel Army Battery Pace Scores from Standard Mean 12AT 5-Parallel Army Battery Pace Scores.

C = Mean Actual Performance Evaluation by Judges. Higher score indicates better performance.

APPENDIX I

Deviations From the Standard Mean Score of Individual IPAT 8-Parallel-Form

Anxiety Scores and Corresponding Match Performance Evaluations

"B" Team

Weight Class	Lincoln H. S.			Yankton H. S.			Watertown H. S.			Aberdeen H. S.		
	A	B	C	A	B	C	A	B	C	A	B	C
95	6.40	+ .33	3.6	6.00	+1.79	4.0	6.20	+2.11	2.6	6.60	+2.83	2.0
103	6.40	- .21	2.3	6.40	- .68	Forfeit	6.00	+ .44	3.3	6.20	+ .83	3.0
112	6.40	+1.00	4.6	6.00	+1.74	4.3	6.20	+3.06	5.0	6.60	+2.00	2.6
120	6.60	+ .13	2.3	6.00	- .38	3.6	6.40	- .66	3.0	6.40	- .17	4.6
127	6.60	+ .50	2.0	6.00	+ .39	5.0	6.40	+1.18	4.0	6.40	+ .88	4.3
133	6.00	+ .70	2.6	6.40	- .92	1.6	6.40	- .38	2.3	6.00	-1.52	2.6
138	6.20	+2.78	4.3	6.60	+1.14	2.3	6.00	+ .35	4.6	6.40	+1.23	1.3
145	6.40	- .02	3.0	6.40	+2.86	5.0	6.00	+ .87	3.3	6.20	+2.01	2.6
154	6.20	+2.64	3.0	6.60	+1.25	2.3	6.00	+ .76	3.0	6.40	+ .89	4.3
165	6.00	+ .85	4.6	6.20	+1.18	4.6	6.60	- .54	4.6	6.00	- .11	5.0
180	6.00	+2.13	2.6	6.40	+ .23	2.6	6.40	+1.28	5.0	6.00	- .37	5.0
Hwt	6.00	- .46	5.0	6.20	+1.37	4.6	6.60	+1.19	2.3	6.00	+ .23	5.0

LEGEND

- A** = Standard Mean IPAT 8-Parallel Anxiety Battery Form Scores. Mean varies according to form.
- B** = Deviation of IPAT 8-Parallel Anxiety Battery Form Scores from Standard Mean IPAT 8-Parallel Anxiety Battery Form Score.
- C** = Mean Match Performance Evaluation by Judges. Higher score indicates better performance.

APPENDIX I (Continued)

Weight Class	Mitchell H. S.			Madison H. S.			Pierre H. S.		
	A	B	C	A	B	C	A	B	C
95	6.60	+ .07	2.0	6.40	+3.06	4.3	6.40	+3.43	4.3
103	6.00	+2.94	4.6	6.00	+2.09	5.0	6.40	+2.18	2.3
112	6.00	-1.24	2.6	6.40	- .19	Forfeit	6.60	+1.08	5.0
120	6.00	- .25	3.3	6.20	- .51	4.6	6.60	+2.23	3.6
127	6.00	+1.89	4.3	6.20	+1.02	3.3	6.60	+ .49	3.6
133	6.20	-2.16	1.6	6.60	+1.27	3.3	6.00	-1.66	2.3
138	6.40	+ .77	2.0	6.00	- .01	5.0	6.20	+1.24	2.3
145	6.60	+2.12	5.0	6.00	+2.02	2.6	6.40	+1.03	3.6
154	6.40	+1.93	5.0	6.00	- .55	4.6	6.20	+1.38	3.0
165	6.40	- .62	Forfeit	6.40	+1.47	4.6	6.00	- .12	5.0
180	6.20	+1.61	5.0	6.60	+ .21	4.3	6.00	+1.22	4.3
Hwt	6.40	- .36	4.3	6.40	+ .38	3.6	6.00	- .62	4.6

A = Deviations between Post-Season and Individual Health Analysis Scores.
 B = Basic Health Performance Evaluation by Judges. Higher scores indicate better performance.

APPENDIX J

Deviations Between Post-Season and Individual Match Anxiety Scores
and Corresponding Match Performance Evaluations

"A" Team

Weight Class	Lincoln H. S.		Yankton H. S.		Watertown H. S.		Aberdeen H. S.	
	A	B	A	B	A	B	A	B
95	-3.23	5.0	-1.38	4.3	-1.12	4.6	- .78	4.3
103	- .87	3.3	- .50	5.0	- .89	3.3	+ .34	3.0
112	- .05	4.6	- .64	3.6	- .45	4.3	-1.76	4.6
120	+ .94	4.0	- .18	4.6	-1.52	4.3	-1.42	4.6
127	+ .50	5.0	-1.38	5.0	- .82	4.6	-1.42	3.0
133	+3.61	3.3	+ .65	4.3	+1.10	2.6	+2.35	3.6
138	+ .68	4.6	+1.62	4.3	+ .47	5.0	+ .28	4.6
145	0.00	4.3	+ .64	4.0	- .18	4.6	+ .61	3.0
154	+ .39	4.6	- .29	5.0	+ .87	3.0	-1.06	4.6
165	- .65	4.6	-1.43	2.6	-2.64	4.0	-2.86	5.0
180	- .08	3.6	-1.51	3.6	-2.13	3.6	-1.41	5.0
Hwt	-1.95	5.0	-1.05	5.0	-1.54	4.3	- .70	5.0

LEGEND

A = Deviations Between Post-Season and Individual Match Anxiety Scores.
B = Mean Match Performance Evaluation by Judges. Higher score indicates better performance.

APPENDIX J (Continued)

Weight Class	Mitchell H. S.		Madison H. S.		Pierre H. S.	
	A	B	A	B	A	B
95	-1.34	4.6	-.63	4.3	-.26	4.3
103	-1.01	3.3	-.79	5.0	-.30	2.3
112	+.76	3.3	-.29	Forfeit	+1.18	5.0
120	-.85	4.0	-1.35	4.6	+1.79	3.6
127	-2.09	4.6	+.38	3.3	+.03	3.6
133	+1.63	5.0	+1.27	3.3	+.28	2.3
138	+.74	2.6	-3.45	5.0	-2.00	2.3
145	-.02	4.0	-.98	2.6	-1.57	3.6
154	+.96	4.6	-1.99	4.6	+.14	3.0
165	-2.68	5.0	+.76	4.6	-1.23	5.0
180	-1.18	3.6	+.29	4.3	+.70	4.3
Hwt	-2.21	4.6	-1.64	3.6	-3.04	4.6

A = Deviations between Post-Season and Individual Season Auxiliary Scores.
 B = Post-Season Performance Deviations by Judges. Higher score indicates better performance.

APPENDIX K

**Deviations Between Post-Season and Individual Match Anxiety Scores
and Corresponding Match Performance Evaluations**

"B" Team

	Lincoln H. S.		Yankton H. S.		Watertown H. S.		Aberdeen H. S.	
Weight Class	A	B	A	B	A	B	A	B
95	-3.36	3.6	-2.30	4.0	-1.78	2.6	- .66	2.0
103	-2.69	2.3	-2.69	Forfeit	-2.44	3.3	-1.85	3.0
112	-2.65	4.6	-2.31	4.3	- .79	5.0	-1.45	2.6
120	- .31	2.3	- .88	3.6	- .43	3.0	+ .06	4.6
127	+ .20	2.0	- .67	5.0	+ .52	4.0	+ .22	4.3
133	+1.98	2.6	+1.42	1.6	+1.96	2.3	+ .42	2.6
138	- .46	4.3	-2.00	2.3	-3.09	4.6	-1.81	1.3
145	+ .39	3.0	+ .26	5.0	-2.13	3.3	+ .79	2.6
154	+1.40	3.0	+ .41	2.3	- .68	3.0	- .15	4.3
165	-1.17	4.6	-1.80	4.6	-1.05	4.6	-1.22	5.0
180	+1.61	2.6	+ .11	2.6	+1.16	5.0	- .89	5.0
Hwt	-2.88	5.0	- .85	4.6	- .63	2.3	-2.20	5.0

LEGEND

- A =** Deviations Between Post-Season and Individual Match Anxiety Scores.
B = Mean Match Performance Evaluation by Judges. Higher score indicates better performance.

APPENDIX K (Continued)

	Mitchell H. S.		Madison H. S.		Pierre H. S.	
Weight Class	A	B	A	B	A	B
95	+ .34	2.0	- .92	5.0	-1.95	5.0
103	-1.15	4.6	-1.76	3.3	- .64	5.0
112	-1.74	2.6	- .12	4.6	+1.01	4.3
120	- .42	3.3	- .27	3.0	+ .48	3.6
127	+ .83	4.3	+1.34	5.0	+ .41	5.0
133	- .02	1.6	- .46	5.0	- .21	3.3
138	-2.27	2.0	- .09	5.0	+1.11	4.0
145	+ .28	5.0	+2.12	5.0	+ .80	4.0
154	+ .89	5.0	- .38	4.3	+ .87	2.6
165	-1.33	Forfeit	-3.49	4.3	-2.91	4.0
180	+1.29	5.0	-1.15	4.3	-1.60	4.3
Hwt	-2.38	4.3	-1.38	Forfeit	- .64	5.0