Anxiety and Body Image in Tattooed and Nontattooed Military Prisoners

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Anxiety and Body Image in Tattooed and Nontattooed Military Prisoners

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Presented to the
Department of Psychology
and the
Faculty of the Graduate College
University of Nebraska at Omaha

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Terry L. Habeger
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Accepted for the faculty of The Graduate College of the University of Nebraska at Omaha, in partial fulfillment of the requirements for the degree Master of Arts.

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A final thank you to my wife Nancy who gave me support and a push now and then over the months needed for completion.

T.L.H.
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Tattooing has evolved into something less than an art, particularly in western cultures, and has lost its original dignity and original significance as well (Abramson, 1931). As a result, there has been a great deal of conjecture concerning the psychodynamics of tattooing (Edgerton & Dingman, 1963; Hamburger, 1966; Hamburger & Lacovara, 1963). The present study was an attempt to investigate the psychodynamics of tattooing through the use of one measure of anxiety and two measures of body image with tattooed and nontattooed individuals. The techniques employed were the Secord (1953) Homonym Word Association Test, the Secord-Jourard (1953) Body Cathexis Scale, and the Taylor (1953) Manifest Anxiety Scale.

Secord's homonym test is seen by the author as a measure of body concern. Responses to stimulus words are scored as body or nonbody responses. To the stimulus word "colon", for example, a body response would be "intestine" and a nonbody response would be "comma". Body concern is operationally defined as the number of body responses to the stimulus words on the test.

The homonym test constructed by Secord consists of 100 words, 75 stimulus words and 25 neutral words. Four hundred words were originally selected from standard word lists and more than half of these were eliminated because they were easily misunderstood when spoken, difficult to score or produced disruptive associations.
ation coefficients between each homonym and the total body score were computed for the remaining 175 words. The 75 stimulus words selected had biserial correlation coefficients ranging from .22 to .70. Twenty-five neutral words were distributed among the 75 stimulus words to prevent the development of a set.

The homonym test was validated through the comparison of individual Rorschach protocols and the number of body responses to the homonym test (Secord, 1953). It did not seem likely that a simple correspondence between homonym content and Rorschach content would be found, but this comparison was made first. If this relationship existed, individuals producing a large number of body responses on the homonym test would be expected to have a proportionately large number of body-content responses on the Rorschach. The usual Rorschach anatomical category was expanded to include any references to parts of the body, excepting faces and profiles. This direct relationship between Rorschach body-content scores and the number of body responses to the homonym test was not significant.

In depicting the homonym test as a measure of body concern, Secord characterized excessive body concern, a high score, as resulting from anxiety about one's body or love for one's body. Secord believed the majority of high scorers were in the anxious category. These individuals were seen as abnormally concerned with their body parts or processes, fearing pain, injury or disease, and
feeling that their bodies were ugly and shameful. Low scoring individuals were seen as overcontrollers who rid themselves of anxious feelings by means of a self-denial mechanism, and thus give few body responses.

From these interpretations Secord specified signs which were expected to occur on the Rorschach protocols of high scorers. Using these signs, Secord and an independent rater made a prediction for each individual, stating whether he was a high or low scorer on the homonym test. The two raters successfully predicted high and low scorers at the .002 and .03 levels of significance, respectively.

Split-half reliability coefficients for the homonym test, corrected by the Spearman-Brown formula, proved inconsistent and at times not satisfactory. In the 1949 and 1951 studies, split-half reliability coefficients of .81 and .73, respectively, were obtained (Secord, 1953). In a later study, coefficients of .63 and .66 were reported for a male and female sample, respectively (Secord & Jourard, 1953).

The Secord-Jourard Body Cathexis (BC) Scale is viewed by its authors as a measure of body satisfaction (Secord & Jourard, 1953). Forty-six body characteristics are rated on a scale ranging from one (have strong feelings and wish change could some how be made) to five (consider myself fortunate). Body satisfaction is operationally defined as the scale ratings on the BC Scale, with higher scale ratings indicating increases satisfaction with one's body.
The BC Scale is the result of much preliminary work in which previous forms were tried out on college students (Secord & Jourard, 1953). Items difficult to understand, difficult for the S to assign a meaningful rating, or which resulted in little variability among Ss were generally eliminated, provided they did not leave out an important part of the body. Organs pertaining to sexual or excretory functions, however, were omitted because of the possibility that they would cause an evasive manner which would transfer to the rest of the test. Acceptable split-half reliabilities, corrected by the Spearman-Brown formula, of .78 and .83 were obtained for male and female samples, respectively.

A review of the literature with respect to the homonym test and the BC Scale produces some conflicting results. In the 1953 study, Secord found a significant negative correlation between the homonym test scores and the total BC Scale scores. When the items pertaining to body build were taken as a BC Scale subtest and compared with the homonym test an even larger more significant negative correlation was found. In the Secord & Jourard (1953) study no significant relationship was found for a male sample, though a significant negative correlation was found for a female sample. In a more recent study, Mosher, Oliver and Dolgan (1967) administered a shortened version of the homonym test and the BC Scale, as well as a number of other measures to tattooed and nontattooed prisoners.
The two groups of Ss were selected from medical records with the requirement that the tattooed Ss have two or more tattoos which were professionally applied before entering the reformatory. Ss had similar criminal histories and socio-economic backgrounds. The shortened version of the homonym test consisted of 21 words which were selected from Secord's list of 75 homonyms. The words were judged to elicit responses that were frequently related to body narcissism. The tattooed and nontattooed prisoners differed significantly on the BC Scale score, indicating that the tattooed prisoners had more positive feelings about the various parts of their body than did the nontattooed prisoners. There was a trend for tattooed prisoners to give more body responses on the homonym test than the nontattooed prisoners. These results would indicate a positive relationship between the two measures, though the shortened homonym test was used.

The Taylor Manifest Anxiety Scale (TMAS) is viewed by its author as a measure of the overt or manifest symptoms of anxiety (Taylor, 1953). Items for the scale were from the Minnesota Multiphasic Personality Inventory (MMPI). With Cameron's description of chronic anxiety reactions as a base, five clinicians were asked to designate the items indicative of manifest anxiety. Sixty-five items were selected on which there was 80 per cent agreement or better. After several modifications, the scale was
reduced to the present 50 items. Manifest anxiety is operationally defined as the number of responses by scored as "anxious" from the 50 items.

Numerous validation studies for the TMAS have been reported where individuals, rated or judged as being highly anxious, also scored high on the TMAS (Shatin, 1961; Taylor, 1953). Moss and Waters (1960), for example, in an extensive longitudinal study obtained this result with hospitalized juveniles. Hoyt and Magoon (1954) found the same correspondence with college students as did Kendall (1954) with patients undergoing active treatment for pulmonary tuberculosis.

Reliability of the TMAS has been shown to vary between .81 and .96, and hence adequate reliability has been shown (Hilgard, Jones & Kaplan, 1951; Rosenbaum, 1950; Spence & Taylor, 1951; Taylor, 1951).

The rationale for the introduction of an anxiety scale in this study follows primarily from the thinking of Secord in his development of the homonym test (Secord, 1953). In Secord's original work with the homonym test, anxiety as displayed in individual Rorschach protocols contributed greatly to the eventual predictions of high or low homonym scorers. High scorers were those individuals who gave a large number of body responses to the homonym stimulus words. Secord then theorized that primarily two types of individuals obtained high scores on the homonym test.
These were the narcissistic and the anxious person, though Secord believed that most of the individuals were in the anxious category. In line with Secord's theory one would expect a high anxiety score from the individual who scored high on body concern yet scored low on body satisfaction. It seems likely that this person would seem anxious because he is dissatisfied with his body while also being very concerned about it. To test further the relationship between body concern and body satisfaction, Secord and Jourard (1953) derived an "anxiety-indicator" score. This score was obtained by summing the ratings for each individual on the 11 BC Scale body characteristics most negatively rated by the group. These sums were divided by 11 to yield an "anxiety-indicator" score for each individual. A significant negative correlation was found between the "anxiety-indicator" score and the homonym test score for both male and female Ss.

It is hypothesized that the tattooed prisoners will produce more body responses on the homonym test and higher anxiety scores on the TMAS than the two control groups. Since research evidence is contradictory for the BC Scale, prediction of differences is not made.

Method

Subjects. The three matched samples (n=12) used were tattooed prisoners (TP), nontattooed prisoners (NTP) and
nontattooed military personnel (NTMP). The samples were matched on the variables of intelligence, education and socio-economic status with an age range limitation of 19 to 24 years. The prisoner samples were further matched with respect to type of offense, civilian or military, and length of sentence.

The prisoner sample was selected from the population at the U.S. Disciplinary Barracks at Fort Leavenworth, Kansas, a confinement facility for military personnel who have committed a civilian and/or military offense. The two prisoner samples were chosen from the population entering the institution from approximately February through May, 1970. All prisoners were tested at the Directorate of Mental Hygiene within the first two weeks of confinement. Names of tattooed prisoners were gathered when they entered the Directorate for group psychological testing. The prisoners were asked at this time if they had tattoos. Relevant matching information was collected for the approximately seventy names obtained.

The names for the NTM sample were chosen from a prisoner roster so that the entrance dates corresponded closely with the TP. The roster was listed in order of the prisoner's register number, a number which increased numerically as prisoners entered the institution. Every fourth prisoner on the roster was selected and relevant information was checked. An administrative file which showed "identifying
marks" was used to eliminate those selectees who had tattoos. Others were eliminated because they were not Caucasians, not within the age limit, or had very little sentence remaining. Relevant matching data was collected on the approximately fifty prisoners remaining.

The NTMP sample was drawn from the enlisted men's population assigned to the U.S. Disciplinary Barracks at that time. Names for the NTMP sample were selected from Military Personnel files. The selectees were Military Police with a variety of duties in the institution and the Company of military personnel. The selection was based primarily on education, age and intelligence. The father's occupation and education were not included in the file. All files were examined and approximately fifty names with relevant information resulted.

Matching information for all Ss was obtained from military files. The Army General test (GT) score was the intelligence indicator. Three factors used to determine socio-economic background were father's occupation, family income and father's education. No prisoners reported prior civilian offenses. All Ss were Caucasian.

The TP, NTP and NTMP had average ages of 21.2, 21.8 and 20.2, respectively. The three samples were matched on intelligence so that 6 Ss had GTs of greater than 100 and 6 Ss had GTs of less than 100. The average GT for the TP, NTP and NTMP were 97.4, 102 and 98, respectively. The
range of GTs for TP, NTP and NTMP were 65-118, 67-124 and 74-118, respectively. The samples were matched with respect to education so that 6 Ss had 11 or more years and 6 Ss had less than 11 years of education. The average number of years of education for TP, NTP and NTMP was 10.2, 10.2 and 10.4, respectively. One S from each group had a father with a college degree. All remaining Ss had fathers or stepfathers with a high school education or less and working as skilled or unskilled labor. Several Ss were unsure of the exact number of years of education for fathers or stepfathers. The TP, NTP and NTMP reporting precise years of education for fathers and stepfathers resulted in averages of 8.4, 8.6 and 10.1, respectively. Family income was difficult for the Ss to estimate and imprecise in personal histories and was thus used little when selecting Ss.

The prisoner samples were matched so that 5 Ss had sentences of over 12 months and 7 Ss had sentences of 12 months or less. The average sentences for TP and NTP were 15.166 and 17.083 months, respectively. The same samples were matched for offense, civilian or military, with 4 Ss from each group in the civilian category and the remaining 8 Ss in each group in the military category. Military crimes were primarily AWOL. Civilian crimes included larceny, sale and possession of drugs, assault and forgery.

The prisoner Ss selected for the matched samples were scheduled for an interview at the Directorate of Mental
Hygiene and asked if they would participate in a research project. It was made clear that they did not have to participate, though all readily agreed. A reward of either a bottle of pop or a good on-the-spot report was promised for participation. The NTMP were contacted by E at work or in the barracks and asked to participate in the project. A reward of two dollars was promised for participation. A monetary reward for prisoner participation was prohibited. All Ss were told that three tests would be administered.

Procedure. The tests were administered to Ss individually with the order of presentation of the tests counterbalanced. The TP and NTP were completed first. Testing was completed in a five day period, with different samples tested on consecutive days. On one day an equal number of TP and NTP were tested. The NTMP were completed in the following four day period.

On each test Ss were asked to read the printed instructions while E read them aloud. The homonym test was completed in E's office with E present. The stimulus words for the homonym test were presented by a tape recorder at the rate of one word per five seconds. The MMPI and BC Scale were completed in a vacant conference room. After completion each S was questioned to determine the father's occupation, family income and parent's education. The NTP and NTMP were asked if they had tattoos. Ss were given the appropriate reward but were not told the nature of the study. The NTMP
were later given a brief description of the study.

Results

Split-half reliability coefficients, corrected by the Spearman-Brown formula, were computed for the homonym test, the TMAS and the BC Scale. Obtained coefficients were .79, .91 and .95, respectively. All coefficients were acceptable in light of studies noted earlier.

A single-factor analysis of variance was used to analyze data from each test. The prediction that the TP would score higher on the homonym test and the TMAS than the two controls was not supported. The three samples did not differ significantly on the homonym test ($F=2.265$, $df=2,33$, $p<.15$), the TMAS ($F<1$) or the BC Scale ($F<1$). The difference, though not significant, resulting on the homonym test was further analyzed using the Tukey(a) procedure. The largest difference, between the TP and NTP, was found not to be significant ($T_3-T_1=59.52$, $df=3,33$, $q_{.95}=72.87$). Means and standard deviations for all tests and groups are presented in Table 1.

Insert Table 1 about here

The MMPI profiles for the three groups were very similar. The psychopathic deviate (Pd) and the hypomania (Ma) scales were the high points for all three groups. Generally the NTMP sample's profile was less elevated than the two prisoner samples. A single-factor analysis of variance
was used to analyze elevation differences among the three groups on the Pd and Ma scales, where the largest elevation differences occurred. The groups did not differ significantly on either scale ($F<1$), ($F=1.680$, df$=2,33$, $p<.05$), respectively. The average MMPI profile for each group is shown in Figure 1.

The three groups did not differ on the number of unanswered items on the TMAS ($F=1.336$, df$=2,33$, $p<.05$).

The Pearson product-moment correlation coefficient was used to analyze the relationship between the "anxiety-indicator" and the homonym test. Secord and Jourard (1953) had found a significant negative correlation between these measures. A nonsignificant negative correlation of -.203 was found in this study when the scores of all samples were combined. The individual samples differed widely in the direction and magnitude of the relationship. The NTP produced a nonsignificant positive correlation of .230 and the NTMP produced the largest though nonsignificant negative correlation of .519 (see Table 2). The nonprisoner sample thus produced results most similar to those of Secord and Jourard (1953).

The relationship between the "anxiety-indicator" and the TMAS was also analyzed. No significant correlations were obtained for either combined samples or individual samples.
The "anxiety-indicator" score, as defined by Secord and Jourard (1953), was a derivative of the BC Scale and hence it did not seem unusual that the relationship between the "anxiety-indicator" and the TMAS was similar to the relationship between the BC Scale and the TMAS (see Table 2).

The correlation coefficient was also used to analyze the relationship between the remaining measures (see Table 2). No significant correlation was found between the homonym test and the BC Scale when data from the combined samples was analyzed ($r=-.208$). This result contrasts with studies mentioned earlier. When the same relationship was tested for individual samples, only the TP produced a significant negative correlation ($r=-.623, p<.05$). That is, body concern and body satisfaction as defined by Secord (1953) and Secord and Jourard (1953), respectively, were negatively correlated for the tattooed prisoner sample.

Data from the TMAS was correlated with the homonym test and the BC Scale. No significant correlations resulted for either the combined samples or the individual samples (see Table 2).

The BC (body build) category, which refers to eleven items selected from the BC Scale that pertain to body build, had previously been found to be more negatively correlated with homonym test scores than the entire BC Scale. In this study the BC Scale was more negatively correlated with the homonym test than was the BC (body build) items ($r=-.208, r=-.139$), respectively.
Discussion

Tattooed prisoners (TP), nontattooed prisoners (NTP) and a nontattooed military personnel control group (NTMP) were found not to differ significantly on measures of body concern, anxiety and body satisfaction. Theoretical and practical implications of these results can be considered, based primarily on a similar study by Mosher, Oliver and Dolgan (1967), and Secord's (1953) theorizing.

Previous inconsistent results concerning the relationship between the homonym test and the BC Scale were not clarified. Secord (1953) found a significant negative correlation and Mosher, Oliver and Dolgan (1967) obtained results which suggested a positive correlation. In this study a nonsignificant negative correlation was obtained for the combined groups and a significant negative correlation was found for the TP sample. The NTP sample, however, produced a nonsignificant positive correlation between the two measures ($r = .273$). Secord had obtained an even larger significant negative correlation between these tests when body build items of the BC Scale were correlated with the homonym test. A similar result was not obtained in this study. Therefore, results concerning the relationship between the two measures were inconsistent and only partially supported Secord's theorizing.

The administration of the TMAS yielded nonsignificant trends in the direction predicted by Secord. Secord had
theorized that the high scorer on the homonym test was primarily an anxious individual. The positive but nonsignificant correlation of .20 found between the homonym test and the TMAS is consistent with this theory. Secord also theorized that the individual with high body concern and high anxiety would also be less satisfied with his body. Of eleven Ss scoring greater than the mean on the TMAS and the homonym test, six Ss scored less than the mean on the BC Scale and five Ss scored greater than the mean on the BC Scale. This would indicate that high scorers on the TMAS and the homonym test did not score consistently high or low on the BC Scale. The interrelationship of these measures as seen by Secord then received only minimal support in the form of nonsignificant trends.

Generally the results of this study seem to conflict with those of the similar study by Mosher, Oliver and Dolgan (1967). The first inconsistency concerned the relationship between the homonym test and the BC Scale. Results concerned with the number of body associations given to the homonym test were also in conflict. Mosher, Oliver and Dolgan reported a nonsignificant trend for the tattooed Ss in which they gave more body associations than the nontattooed Ss. A nonsignificant but opposite trend to that found by Mosher, Oliver, and Dolgan was noted in this study. With reference to the BC Scale, Mosher, Oliver and Dolgan found that tattooed Ss felt significantly stronger and more
positive about their bodies than the nontattooed Ss. No difference between tattooed and nontattooed Ss was obtained in this study.

Several explanations seem possible for the conflicting results in these two studies. First, the nature of the tattoos may have been different. The tattooed Ss in the Mosher, Oliver and Dolgan study were required to have two or more professionally applied tattoos. In this study one tattoo, professionally or nonprofessionally applied, was all that was necessary. The number of tattoos possessed by an individual has been shown to influence results. Taylor (1968) found that girls with seven or more tattoos were significantly more anxious than girls with an average of 2.21 tattoos or those with no tattoos. Taylor also found little significance on any measures used except when the heavily tattooed group was used in the comparison. McKerracher and Watson (1969) found that psychiatric patients with eleven or more tattoos were significantly more often placed in the personality disorder group than patients with less than eleven tattoos. Evidence supporting differences resulting from professional or nonprofessional tattoo application was not found.

The Ss from the two studies were similar with respect to educational level and age, but probably had quite different criminal histories. The TP in the present study reported no prior civilian offenses when they entered the Disciplinary
Barracks, and several were serving sentences for military crimes such as AWOL. Mosher, Oliver and Dolgan's Ss were inmates at a Federal Reformatory and probably represented individuals with more serious criminal behavior.

Different versions of the homonym test were used in the two studies. Mosher, Oliver and Dolgan used 21 stimulus words and found a nonsignificant trend for tattooed prisoners to give more body responses than nontattooed prisoners. The present study found a nonsignificant trend in the opposite direction, i.e., TP gave fewer body responses than the NTP or NTMP. This trend remained when the 21 words used by Mosher, Oliver and Dolgan were analyzed.

There were some problems with the tests themselves. The primary problem with the homonym test was lack of response to stimulus words. However, a correction factor for number of blanks was employed. The effectiveness of the BC Scale was highly suspect because of lack of variability among ratings on the 46 body characteristics.

The homonym test as a measure of body concern is perhaps supported by MMPI data. The Hs scale of the MMPI is seen as a measure of personality characteristics related to the neurotic pattern of hypochondriasis. Persons diagnosed to have this disorder show an abnormal concern for bodily functions (Dahlstrom, Welsh & Dahlstrom, 1972). Based on this similarity between the definitions of the homonym test and the Hs scale of the MMPI, the relationship
was tested. A positive correlation was obtained, which approached though was not significant at the .05 level ($r = .31$, $df = 35$, $p > .05$).

Improvements on this study include the addition of a nontattooed nonmilitary control group or at least a nontattooed nonmilitary police control group. The average MMPI for each group as shown in Figure 1 illustrates the similarity of the three groups used. Gottesman (1969) found a similar though less elevated MMPI profile for police recruits, which differed significantly from "normal" MMPI profiles as defined by Dahlstrom and Welsh (1960). These findings suggest a personality dimension, in terms of MMPI norms, that may be missing and desirable in this study.

A second improvement concerns the BC Scale, which should have been shortened or another scale substituted for it. Secord (1953) had a system whereby Ss' results were eliminated when variability among ratings was not present. However, with the matching procedure this was not practical in this study.

Probably the most important improvement involves the selection of the tattooed sample. Many investigators have carefully categorized tattoos according to their message, such as pseudo-heroic, identification with a group, pornographic and many others (Hamburger, 1966; Ferguson-Rayport, Griffith & Straus, 1955). These categorizations seem to
imply different psychodynamics for different categories. With the nature of the S's tattoos available such implications could be investigated in light of personality or other data. As earlier reported, the number of tattoos an individual possesses can influence research results. This suggests a variable for a future study. If tattooed and nontattooed individuals are again compared, it would seem beneficial to require the tattooed Ss to possess numerous tattoos in order to maximize the contrast between the two groups.
### TABLE 1

Differences Among Samples

On Three Tests

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Mean (M)</th>
<th>SD</th>
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<tr>
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<tr>
<td>TP</td>
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<td>NTMP</td>
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<tr>
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<td></td>
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<tr>
<td>TP</td>
<td>16.42</td>
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<tr>
<td>NTP</td>
<td>18.67</td>
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</tr>
<tr>
<td>NTMP</td>
<td>14.50</td>
<td>6.95</td>
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<tr>
<td><strong>BC Scale</strong></td>
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<td></td>
</tr>
<tr>
<td>TP</td>
<td>169.42</td>
<td>17.30</td>
</tr>
<tr>
<td>NTP</td>
<td>158.33</td>
<td>38.25</td>
</tr>
<tr>
<td>NTMP</td>
<td>168.50</td>
<td>24.21</td>
</tr>
</tbody>
</table>
Figure 1
Figure Captions

Fig. 1. MMPI T-scores for the three matched samples.
TABLE 2

Correlations Between Measures For Combined and Individual Samples

<table>
<thead>
<tr>
<th>Homonym</th>
<th>BC Scale</th>
<th>Anxiety-Indicator</th>
<th>TMAS</th>
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</thead>
<tbody>
<tr>
<td>Combined</td>
<td>-.208</td>
<td>-.203</td>
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<tr>
<td>TP</td>
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<tr>
<td>NTMP</td>
<td>-.435</td>
<td>-.519</td>
<td>.375</td>
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</tbody>
</table>

**TMAS**

<table>
<thead>
<tr>
<th>Homonym</th>
<th>BC Scale</th>
<th>Anxiety-Indicator</th>
<th>TMAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined</td>
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<td>-.073</td>
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<tr>
<td>NTMP</td>
<td>-.487</td>
<td>-.448</td>
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</tr>
</tbody>
</table>

* Significant at .05
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