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Bodily Concern: Assessment and Personality Variables

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BODILY CONCERN: ASSESSMENT AND
PERSONALITY VARIABLES

being

A thesis presented to the Graduate Faculty
of the Fort Hays Kansas State College in
partial fulfillment of the requirements for
the Degree of Master of Science

by

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ABSTRACT

The purpose of this study was to investigate the relationship between bodily concern and certain personality variables. Four measures of bodily concern were correlated with the scales of the Edwards Personal Preference Schedule.

Three hypotheses were checked in the study of bodily concern.

- I. There is a positive relationship between bodily concern and the EPPS scale of Preference.
- II. There is a negative relationship between bodily concern and the EPPS scale of Autonomy.
- III. There is a positive relationship between bodily concern and the EPPS scale of Exhibition.

The hypotheses were not supported by the results. In regard to the testing of hypothesis II, no significant correlations were found. In regard to hypotheses I and III, significant correlations in the opposite direction from those predicted were obtained. Thus significant negative correlations at or beyond the .05 level of confidence were obtained between at least one bodily concern scale and the variables of the EPPS of Preference and Exhibition.

The significant correlations between the bodily concern scales and the other EPPS variables were discussed and certain recommendations were made with regard to the possibility of further research in this area.

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CHAPTER I

INTRODUCTION

The speculation which surrounds bodily concern is considerably greater than the empirical findings in this area. There are a host of personality variables in the speculative literature which are associated with bodily concern. The purpose of this study is to investigate the validity of a portion of this speculation. Before proceeding, however, a definition of the primary term, bodily concern, is necessary.

Definition

Bodily concern is usually viewed as a primary symptom of hypochondriasis where it is manifested as a

...preoccupation with or fear or anxiety about, ones body and its functions.

We shall distinguish between the hypochondria which occurs with anxiety and pure hypochondria in which no anxiety or fear is found, but only a tremendous absorption with the bodily processes (Maslow and Mittelmann, 1941, p. 443).

The patient may complain of pain in the back, or stomach, uncomfortable sensations in the back of the head, the chest, the genitals, or for that matter anywhere. There may be a lack of complaints, but instead a cheerful, interested preoccupation with the digestive processes (Maslow and Mittelmann, 1941, p. 443).

This definition of bodily concern tends to restrict the concept of bodily concern to a specific diagnostic category, that of neurotic hypochondriasis. Other individuals have been

found to exhibit high bodily concern. The person with a peptic ulcer, neurodermatitis, asthma, and the whole host of diseases usually thought of as psychosomatic can be included as examples of individuals who use their bodies as a basis of symptom formation. Freeman (1950) found that individuals with illness's commonly considered as psychosomatic evidenced high bodily concern. Conversion hysterics, usually manifesting a paralysis of part of the body or an involvement of the sensory processes with symptoms of hysterical blindness or deafness, may also manifest high bodily concern.

The basic term, bodily concern, as defined for use in this paper refers to the tendency of the individual to possess fear or anxiety about, or to give excessive attention to, the body and its functions. The possibility of bodily concern being a symptom of other diagnostic categories, such as psychosomatic disorders or conversion hysteria, should not be overlooked.

Review of the Literature

By necessity and accident, society deals with physical illness in such a way as to enhance the possibility of the development of bodily concern as a need satisfier. When a child becomes ill his family gives him more attention, he receives special food, is not expected to do things which he does not want to do, and he escapes responsibility. O'Kelly (1949) presents an example of the effectiveness of this special attention in the creation of behavioral reactions. He tells

of a dog, which while a pup, was hit by a car and suffered a bruise on one front paw, which produced a limp. She was smothered with sympathy, allowed to break regulations, fed at irregular hours with things which often had more taste than food value, and was accorded a favored position. For two years after the incident she would resort to a pronounced limp, holding her forepaw in the air every time she was disciplined. The technique which had brought sympathy and special care continued as a part of her behavior.

A child who has immediate attention paid to his every pain and discomfort learns to use this mechanism of sympathy to achieve certain goals. Sympathy "gives social status to weakness" (O'Kelly, 1949, p. 526). The mechanism is akin to egocentricity because it involves an attempt to attract attention to the self (O'Kelly, 1949).

Young (1952) attributes bodily concern to a host of causes and defenses.

Protection against anxiety by exaggeration of need for bodily care: struggle for goals. . . Oversolicitude of mother. . . regarding child's illness may lay a groundwork for use of this means to get attention, express hostility, identify with loved one, compensate for loss of love, and rationalize failure (p. 546).

Maslow and Mittelmann (1941) describe the role that symptom development plays in the hypochondriac.

The patient solves his problems by increasing his social detachment; a compensatory increase in interest in himself endows him and his organs with an increasing significance, which gives him a certain pleasure and feeling of protection.

Second, the symptoms are in part very direct and bald expressions of suffering. That is, they are, in effect, pleas for attention, help, love, and respect. Third, they are, in part, self punishment and expressions of guilt, arising perhaps from masturbation, from the patient's unconscious hatred for others, from his perception of his own selfishness, or from other sources (p. 443).

O'Kelly (1949) states that the use of bodily symptoms may take place for the first time later in life as a result of exposure to sympathetic care. He illustrates by giving the example of a tuberculin patient who at the onset of his care professed his dislike of being waited on and being on bed rest. However, after continued exposure to total care the individual began to develop a systematic hypochondriasis, complaining first of one symptom and then another. It was later discovered that the patient was wrongly diagnosed as having tuberculosis and when released from the hospital he attended a series of psychotherapeutic sessions.

The possibility of the arousal of hypochondriacal symptoms in later life is discussed by Dunbar (1954). Dunbar reports an article written by Higer (1928) which discusses a type of hypochondriasis in which the physician is the etiological factor in the illness. Higer contends that this state may result from the doctors inconsidered diagnosis of incurable disease, or the use of popular phrases by the physician to hide his ignorance. Higer lists 11 types of hypochondriasis which he feels could arise from the suggestion of the doctor.

Many writers seem to agree that in the individual evidencing

high bodily concern and symptom development, the symptoms are manifestations of dependency needs, and that these symptoms represent pleas for love. Gayden (1958) investigated the variables "feeling of being unloved", "narcissism", and "guilt feelings" in relationship to neurotic hypochondriasis. Patients were assigned to the hypochondriacal group by using the Hypochondriasis Scale of the MMPI. The LNG Card Sort, which is a sixty item Q sort used in conjunction with card 8 GF of the TAT, and Blacky Pictures were used as measures of the three independent variables. There was an observed positive relationship between hypochondriasis and the variables "feeling of being unloved", and "guilt feelings", while no significant relationship was found between Hypochondriasis and "Narcissism".

Usually the group which receives the most emphasis in a study of bodily concern is the group which evidences the most bodily concern. Secord (1953) worked with the opposite end of the continuum and speculated that the low scoring individuals on his Homonym Scale, a word association test purporting to measure bodily concern, seemed to be overcontrollers, i.e., they rid themselves of anxious feelings by means of a self denial mechanism, and thus avoid giving bodily responses.

Low scorers exhibit constriction, lack of reaction to color, etc., in keeping with the expectations for controllers. An interesting finding which also supports the latter interpretation consists of the low homonym scores made by those failing to fill in blanks for age and sex on the homonym test form. Failing to fill in blanks may be interpreted as an avoidance response which in this instance is a generalized

reaction to the whole test situation, but which might be expected to include the body. Eight persons who failed to fill in these items had a mean homonym score of 9.25, well below the mean of 15.81 for the whole group (p. 492).

Weinstein and Kahn (1953) compared 28 brain damaged patients who denied their illness with 28 similar individuals who did not deny their illness. They discovered that premorbidly the former had exhibited a drive for prestige and esteem that precluded an acceptance of any inadequacies.

A related area to bodily concern is the study of body cathexis. Secord and Jourard (1953) define body cathexis as "the degree of feeling of satisfaction or dissatisfaction with the various parts or processes of the body" (p. 343). Secord and Jourard studied the hypotheses: (1.) that feelings about the body are commensurate with feelings about the self, when the two are measured by similar scales, (2.) that negative feelings about the body are associated with anxiety, in the form of undue autistic concern as measured by the Homonym Scale, and (3.) that negative feelings about the body are associated with feelings of insecurity involving the self.

A scale for the determination of the degree of cathexis towards various aspects of the body was designed and administered to groups of college females and males, along with a similar scale for aspects of the self, and the Homonym Test.

The hypothesis that feelings about the body are commensurate with feelings about the self was supported by significant correlations between the two parts of the scale. (Body

Cathexis and Self Cathexis)

The hypothesis that low body cathexis is associated with anxiety in the form of undue autistic concern with pain, disease, or bodily injury was upheld by the demonstration of significant relationships between low body cathexis as determined by the scale and by the Homonym Test.

The hypothesis that low body cathexis is associated with insecurity was sustained by the demonstration of a correlation between the Body Cathexis Scale and the Maslow Test (p. 347).

Johnson (1956), in another study of body and self cathexis, found that there was a positive relationship between body cathexis and self cathexis and that there was an inverse relationship between body cathexis and symptom formation, as measured by the Garnell Medical Index. The latter finding indicated that as positive feelings for the body increased in his group the number of symptoms reported decreased.

The popularity of the MMPI in clinical work has fostered the use of the Hypochondriasis Scale to a rather great extent. Guthrie (1952) tested 1,104 patients with the MMPI and attempted to obtain information concerning factors which occur together. He found 142 individuals with Hs as the high score and in 53 of the cases the next high score was on the Depression scale. Sixty of the 142 scored next high on the scale of Hysteria. In studying the Hypochondriasis-Depression group and the Hypochondriasis-Hysteria group Guthrie found they used the symptoms to such an extent that they were difficult to treat. "The results of the item analyses show that these patients obtain their elevated scores primarily from the enumeration of their symptoms.

They picture themselves in terms of their symptoms. . . ."

(Guthrie, 1952, p. 143).

Drake and Oetting (1954) in their codebook for the use of the MMPI concluded that the Hs Score indicates more than bodily concern in analysis of certain patterns.

Scale 1 (Hs) coded low may, for the women as for men, appear to intensify certain problems suggested by the high codings (of other scales). If a high coding of Scale 1 suggests a tendency to use physical symptoms as a defense, a low coding may suggest infrequent use of this kind of defense and a more frequent occurrence of other kinds of behavior (p. 16).

Cowden and Brown (1956) report a case history of a schizophrenic patient which exemplifies the foregoing. They attempted to replace the psychotic symptoms of the schizophrenic patient with a physical symptom. The patient had previously suffered a back injury. Thus they focused on this as the physical symptom. For three months the staff which had contact with the patient emphasized his previously injured back. He was convinced that his troubles were as a result of this back injury and "was free of psychotic symptoms" (Cowden and Brown as cited in Eysenck, 1961, p. 779).

Stanton and Rutledge (1955) in their work with the MMPI used as subjects repeaters and non-repeaters at a university infirmary. Each group was given the MMPI and a breakdown of the groups performance was given.

The women's scores were the most significant. The women repeaters differed significantly from the non-repeaters on the

scales; Hs at the .01 level, and Psychopathic Personality at the .05 level.

Hanvik (1951) discovered that individuals with presumed psychogenic backache scored higher on the Hs Scale of the MMPI than individuals with backache due to a herniated intervertebral disc. He also maintained that judges using his developed profile pattern could "distinguish the profiles of members of the two groups in a manner significantly better than chance" (p. 353).

In an attempt to experimentally reproduce hypochondriasis, Sweetland (1948) administered the MMPI to a group of 15 college students under two conditions. In one condition the group underwent a normal testing situation and in the other condition they were under hypnosis with instructions to attempt to change their personality. The hypochondriacal instructions were:

You will have no change in your personality other than a general concern about your health. In general you will be abnormally concerned about your health. Indirectly, this concern may arise from an unconscious need for sympathy, but this idea of sympathy-need will remain vaguely in the background of your mind. You will be the kind of person who when he sees a tuberculosis prevention advertisement, wonders if he might not have T.B. Or if someone talks of cancer, wonders if he might have cancer, and an Ex-lax or an Alka-Seltzer ad starts you worrying about your health and so on with other situations (p. 94).

A significant change, in the expected direction, at the .01 level, was evidenced in the Hs Scale. The induced neurotic individuals noticed concern over health.

"I had a pain in my arm and chest area, a prickly hard

cold pain, across the top of my head. Every time I had a question that had to do with the body I'd get a pain. They'd come anyway, whether I told myself not to bother."

"I wanted to sleep. I felt sick. My head hurt and my eyes were tired, people were always after me because I was sick."

"I worried a bit about how I felt. I wondered if I was feeling all right part of the time or not."

Sweetland noted that the greatest change in behavior occurred in those individuals who developed the deepest hypnotic state.

In summary, several factors appear consistently in the literature relating to bodily concern. Increased concern for the body and its functions appears to be an attempt to satisfy certain needs. These as reported by authorities in the field are the need for affection, sympathy, approval, the satisfaction of dependency needs, and the removal of anxiety by social withdrawal and isolation. Symptom formation also gives the individual a basis for rationalization of failure. Low scoring individuals on a bodily concern scale were classified by Secord (1953) as being "overcontrollers" who displayed constriction.

CHAPTER II

STATEMENT OF THE PROBLEM

The purpose of this study is to investigate some relationships between bodily concern and personality factors. Murray states in formulating his motivational analysis of personality that ". . . the most important thing to discover about an individual . . . is the superordinate directionality (or directionalities) of his activities, whether mental, verbal, or physical" (Murray, 1951, p. 276). A scale based on some of these "directionalities" as put forth by Murray was chosen as the measuring instrument of personality in this study. This personality inventory, the Edwards Personal Preference Schedule, hereafter called the EPPS, is based on 15 of Murray's needs which he formulated in his motivational analysis of personality. The applicability of the EPPS to the subjects in this study and the ability of certain scales within the EPPS to measure certain personality factors which appear consistently in the bodily concern literature were other important factors in the choice of this instrument.

Several scales of the EPPS would seem on a a priori basis to relate to bodily concern. One variable which appears consistently in the literature on bodily concern is the variable of dependency. Bernardin (1957) has reported in a study of the EPPS that Autonomy and Deference, two scales

on the EPPS, differ significantly in relation to two measures of dependency. Bernardin studied 110 subjects by administering the EPPS and taking those subjects which scored high on Deference and low on Autonomy as the independent group. Three experiments were performed, each measuring a different property of dependency. The dependency variables were: reliance on others for approval, reliance on others for help, and group conformity.

The difference between the Independence-Dependence groups was statistically significant in the expected direction for the variables "reliance on others for approval" (at the .05 to .01 level), and "reliance on others for help" (at the .01 level), but no statistical difference was found between the two groups for the variable of group conformity. Zuckerman (1958) obtained similar results in a study of the relationship of the variable "Dependency-Rebelliousness" in relation to the scales of Deference and Autonomy.

It is expected that if the scales of Deference and Autonomy are measures of the independence-dependence variable there should be a relationship between them and bodily concern, since many authors speculate that the symptoms manifested by the high bodily concern group are attempts to satisfy certain dependency needs (Maslow and Mittelman, 1941; Young, 1952; O'Kelly, 1949). The overcontrollers, a term used by Secord (1953) to refer to individuals who display very little bodily

concern, seem to evidence characteristics of the independent group.

O'Kelly (1949) has reported that a high degree of bodily concern is akin to egocentricity because it involves an "attempt to attract attention to the self" (O'Kelly, 1949, p. 52). Thus on the EPPS scale of Exhibition, which purports to measure the need of the individual to attract attention to himself, (Edwards, 1954), there would be an expected positive relationship to bodily concern.

In the present study the following hypotheses were tested.

- I. There is a positive relationship between bodily concern and the EPPS scale of Deference.
- II. There is a negative relationship between bodily concern and the EPPS scale of Autonomy.
- III. There is a positive relationship between bodily concern and the EPPS scale of Exhibition.

An exploratory analysis was conducted on the remaining scales of the EPPS in an attempt to generate hypotheses for further study.

CHAPTER III

PROCEDURE

Subjects

The subjects for this study were drawn from the women's dorms at Fort Hays Kansas State College. An attempt was made to test the entire population of both dorms, about 350 girls. The majority of the girls tested were classified as freshman or sophomore. The age range of the girls tested was from 18 to 20.

Measuring Apparatus

The bodily concern variable was measured by the use of four techniques.

A. The Hypochondriasis Scale of the MMPI (Hs)

The Hypochondriasis Scale as it appears in the Minnesota Multiphasic Personality Inventory purports to measure hypochondriacal bodily concern. The test as it appears in Appendix A is the same design as the rest of the MMPI, i.e., of a true-false nature. The items generally relate to the body, e.g., "I do not tire quickly," or they relate directly to physical symptoms.

Fifty individuals diagnosed as "pure, uncomplicated hypochondriasis" (Welsh and Dahlstrom, 1956, p. 64) were

included in the validation proceedings for the first scale for hypochondriasis (H-Ch). The control group was composed of 109 males and 153 females between the ages of 26 and 43, and 256 college students, mainly entering freshmen. (Welsh and Dahlstrom, 1956).

This H-Ch scale was the first scale derived to measure hypochondriasis on the MMPI. The Ch was entered originally as a correction aid. This refinement was judged to be inadequate in some respects so the Hs Scale was developed as an "improved revision of the original H-Ch Scale" (Hathaway and McKinley, 1951, p. 19).

McKinley and Hathaway state that the "Hs scale is a measure of amount of abnormal concern about bodily functions" (p. 19).

The Hs scale is fairly well accepted and widely used by psychologists. In the validation studies, the scale significantly differentiated between normals and hypochondriacs. The test-retest reliability reported by Hathaway and McKinley (1951) was .80 using the individual form for both administrations, with intervals of three days to more than one year between testing.

B. The P.S. Functional Behavior Test

This is a paper and pencil test entitled "P.S. Functional Behavior Test", including a sub heading, "Health Inventory". The test appears in Appendix B. The symptoms which make up

the test are arranged as to intersperse psychiatrically classified psychosomatic symptoms among established organic symptoms. Included in the list are fourteen items which, although presented as symptoms, are in actuality personality reactions, e.g., excessive worry, fear of being alone in the dark, and frequent forgetfulness (Freeman, 1950).

The instructions are important as the test should not be perceived as a list of symptoms to which the subject responds if he has ever experienced the symptoms. Rather the individual should respond as per instruction and check the ailments from which he suffers "frequently" or "constantly". The definition of these terms and the decisions as to cutting points are left up to the individual taking the test. Thus the individual's evaluation of his health status is reported, not necessarily his health status.

In the validation of the test, Freeman (1950) submitted that:

The psychosomatic patient shows particular constellations of somatic symptoms and personality traits capable of being experimentally measured and established as a distinct clinical entity. In other words, these symptoms occur together with sufficient frequency to constitute what would appear to be a psychosomatic syndrome (p. 229).

The subjects used for the psychosomatic group were obtained from the psychiatric wards of three hospitals. Sampling of the normal population came from college classes, private industry, and the non-psychiatric wards of the three hospitals. One thousand individuals were tested in the whole validation. Of

the 34 organic symptoms the psychosomatic cases identified themselves with only 15. Fifty-six of the 71 total symptoms were significant at the .01 level. There were three highly significant symptoms which are not ordinarily classified as psychosomatic: head colds, ear aches, and intermittent fevers. The author explains this as the result of possible confusion of symptoms on the part of the psychosomatic patients, (Freeman, 1950) but it can also be attributed to the instructions given the patients and the increased concern that this type of patient would show toward bodily illness.

In administering the test to the hospital psychosomatic group and the hospital non-psychosomatic group, there was a trend toward a lack of differentiation. Fifty-one of the items significantly differentiated between the hospital normal and psychosomatic groups.

The variable of sex did not seem to constitute an important factor in the test. Thus the test should be able to differentiate equally well for males or females.

Of major consequence is the finding that 80% of the Psychosomatic cases exceed the critical (integral) score of four. This suggests the conclusion that when a case presents psychosomatic involvement, it presents not merely a limited number of psychosomatic symptoms but a cluster of them. The statistical evidence shows that 70% of the normal cases present three symptoms or less, and 60% register only two symptoms or less (p. 241).

A reliability study was performed on a new group of 100 non-hospital normal subjects consisting of 17 salesmen, 20 fraternity applicants, and 63 students. The reliability

reported by this study was .81 (Freeman, 1950).

In a further validation, 30 hospital Psychosomatic and 100 non-psychosomatic cases were tested. The P.S. Functional Behavior Test discriminated significantly between the groups with a resultant chi square of 21.89, well beyond the .01 level.

C. The Homonym Test

This test is quite different in content and theoretical background in comparison to the previous tests. This test can be seen in appendix C. The Homonym test was constructed as a list of homonyms which had meanings pertaining either to bodily parts or processes, and which have in addition common non-body meanings. "The words colon, graft, and tablet are illustrative. Three bodily responses might be: colon-intestine, graft-skin, tablet-aspirin, while three non-body responses might be: colon-comma, graft-politics, or tablet-paper (Secord, p. 481-82). In Secord's validation of the scale the words were read aloud to the subjects who were instructed to write down the first word occurring to them as each homonym was read.

The Homonym Scale was given to a group of 149 students and the 15 subjects who made the highest scores, i.e., responded the most with bodily responses, and the 15 making the lowest scores on the scale were given the Rorschach. The high scoring individuals showed anxiety over and concern for their bodily parts and functions while low scoring individuals seemed to be overcontrollers, i.e., they rid themselves of anxious feelings

by means of a self denial mechanism, and thus avoid giving bodily responses (Secord, 1953).

In the present study the Homonym Scale was presented in paper and pencil form to the subjects. The method of presentation differs from the manner in which Secord presented the scale in that the words were not read to the subject, rather the subjects were required to read each word and to write their response. This scale was given as the first of the series in order to obviate the possibility of the Homonym Scale being influenced by the other scales.

A check on scorer reliability was obtained on a random sample of the completed Homonym Scales. A correlation was obtained between the author's scoring of the random sampled scales and another psychology graduate student's scoring. Both of the scorers followed the outline for scoring provided by Secord.

D. Bodily Concern Rating Scale

This is a one item rating scale which was used by the counselors in the dorms. The scale is presented in Appendix F.

The counselors obtained the scale in a group meeting where the scale was explained to them. They filled out the rating scale for only those girls who had been residents of the dorm the previous semester. This was necessary since some new girls moved into the dorm the second semester and the counselors were not acquainted with them. The dorm counselors filled

out a rating scale only on those girls for whom they were responsible. The raters had been acquainted with the girls they rated for at least one semester.

In the first presentation of the scale no mention was made as to the distribution of the girls among the categories. The resulting curve was decidedly skewed toward the "Very High" side, with a preponderance of girls being placed in the "Low" category. The rating scale was presented again with instructions to place 17% of the girls in each of the categories 1 and 4, and about 33% in each of the categories 2 and 3, thus producing a symmetrical distribution. It was necessary to obtain a symmetrical distribution to compute the Pearson product-moment correlation.

The personality variables were measured by the EPPS. The scales for which direct hypotheses were made are the scales Autonomy, Deference, and Exhibition. The remaining scales Achievement, Order, Affiliation, Intraception, Succorance, Dominance, Abasement, Nurture, Change, Endurance, Heterosexuality, and Aggression were investigated in relation to bodily concern.

The EPPS differs from the usual personality inventory in that it consists of pairs of statements relating to personality traits. These statements in the entire inventory have been empirically rated as to social desirability. After the rating, two items from different scales which have the same social

desirability ratings are paired. Thus when the choice of the individual is made as to which item of the pair "is more characteristic of himself, it may be argued that the factor of social desirability will be of much less importance in determining the response than in the case of a 'yes-no' type of inventory" (Edwards, 1954, p. 6).

Only those individuals who obtained a consistency score of 10 and above on the EPPS were used in the sample from which the correlations were computed. The consistency score as it appears in the EPPS is a measure of an individual's consistency in marking his answers. The score is determined by the number of times an individual makes identical choices in two identical pairs of items. There are 15 such identical pairs of items in the EPPS, thus the highest possible score would be 15, i.e., a score of 15 indicates that on all 15 pairs the individual answered the items in the same manner on both presentations. The mean consistency score which would be obtained by chance marking would be 7.5. The probability of obtaining a score of 10 or more identical choices by chance is approximately .15.

The scales, other than the peer rating were administered in a group setting. Both dorms were tested at the same time. The girls did not sign their names to their papers but instead placed their post office box numbers on their papers for identification.

CHAPTER IV

RESULTS

All the tests were scored and Pearson product-moment correlations were computed. The correlations appearing in Table I are those between the bodily concern scales and the EPPS scales. Intercorrelations of the variables measured by the EPPS appear in Appendix E. It should be noted that the correlations presented in Table I and Appendix E are based on varying N's. The sample size varied from 156 to 206. The varying size of the sample was the result of incorrectly marked answer sheets, papers without identifying numbers, and the use of only those girls who had been in the dorms the Fall semester as subjects for the Peer ratings. Appendix D contains the N's used for computing each of the correlations in Table I and Appendix E.

The services of the computing center at Kansas State University, Manhattan, Kansas were utilized to compute the correlations.

In determining the level of significance of the obtained correlations the significance table as presented by Guilford (1956, pp. 538-539) was used. This table presents the coefficients of correlation, for varying degrees of freedom, which are significant at the .05 and .01 level of confidence when a two tail test of the null hypothesis is used. The

TABLE I

Correlation Of Bodily Concern Scales With The EPPS Variables

Bodily Concern Scales				
EPPS	Hom.S.	Pecc	R. P.S.	Hs
Achievement	.12	.14	.09	.12
Deference	-.10	.06	-.03	-.16*
Order	-.03	-.09	-.07	-.16*
Exhibition	.13	.05	-.19*	.00
Autonomy	.08	-.13	.00	.01
Affiliation	.04	.06	-.02	-.10
Intracception	-.01	.00	-.10	-.11
Succorance	.01	.14	.19*	.18*
Domination	.12	.00	.08	.20**
Abasement	-.15*	.05	.16*	.06
Nuturance	-.14	.05	.06	.05
Change	-.08	-.06	-.20**	-.12
Endurance	-.11	-.05	-.18*	-.20*
Heterosexuality	.09	-.12	.05	.04
Aggression	.01	-.01	.16*	.21**
Consistency	-.04	.00	.03	.07

* Significant at the .05 level

** Significant at the .01 level

null hypothesis being, in this case, that the correlation obtained does not differ significantly from that expected by chance alone.

The results were examined with respect to these three hypotheses. Hypothesis I: There is a positive relationship between bodily concern and the EPPS scale of Deference.

As can be seen in Table I, only one measure of bodily concern correlated significantly (at the .05 level) with the scale of Deference, and the relationship was in the opposite direction from the result predicted by this hypothesis (-.16). The significant correlation indicates that the score on the Hs Scale tends to increase as the score on the Deference Scale decreases. The correlations ranged from -.16 to +.06.

Hypothesis II: There is a negative relationship between bodily concern and the EPPS scale of Autonomy.

No significant relationship was found between the bodily concern scales and the scale of Autonomy. The correlations between the two scales ranged from -.12 to +.03.

Hypothesis III: There is a positive relationship between bodily concern and the EPPS scale of Exhibition.

One significant correlation (at the .05 level) related to the testing of this hypothesis was found. This significant correlation was between the P.S. Functional Behavior Test and Exhibition scale. This correlation (-.19) was in the opposite

direction from the result predicted by the hypothesis. This correlation indicates that as the score on the P.S. Functional Behavior Test increases there is a tendency for the score on the Exhibition scale to decrease. The correlations ranged from .13 to -.19.

Several scales of the EPPS correlated significantly with the various measures of bodily concern as evidenced by Table I. Caution should be used in interpreting these correlations for in accepting the .05 level of confidence one would expect three of these 60 correlations to be significant by chance alone.

The intercorrelations of the bodily concern measures can be viewed in Appendix E. The relatively low (.13) correlation between the Homonym Scale and Peer Rating, coupled with the non-significant relationship of the Homonym Scale with the P.S. Functional Behavior test and the Hs Scale indicates that the Homonym Test is measuring something quite different from that of the other bodily concern scales.

There was a high positive correlation (.73) between the P.S. Functional Behavior test and the Hs Scale, while the Peer Ratings correlated .26 and .27 respectively with these two scales.

The scorer reliability on a random sampling of the Homonym Scales (N61) was .88. This figure was less than that reported by Secord (.99); however, it did indicate considerable scorer reliability.

The intercorrelations of the EPPS variable are essentially in agreement with those published in the manual (Edwards, 1954, p. 12). The intercorrelations can be seen in Appendix E.

CHAPTER V

DISCUSSION

The hypotheses put forth in this study were not confirmed by the results obtained. Significant tendencies in the opposite direction from those predicted in hypotheses I and III were obtained. Hypothesis I predicted that an increase in bodily concern would be commensurate with an increase on the EPPS scale of Deference. A significant tendency in the opposite direction would indicate that a rise in bodily concern would tend to be followed by a decrease on the Deference scale. It should be noted that the trend was not evidenced in both the Hs Scale and the P.S. Functional Behavior test, even though these two tests are highly correlated. In regard to hypothesis III only one measure of bodily concern correlated significantly with the Exhibition scale, the P.S. Functional Behavior test correlated negatively (-.19) with the Exhibition scale.

At least three possible explanations of the obtained results can be made. The first explanation is based on the assumption that the findings were the result of chance fluctuations. The second explanation is based on the assumption that the speculation regarding the relationship of bodily concern to the variables of dependency and exhibition is false, that there is no true significant relationship between the variables. In making this assumption it is necessary to place considerable

emphasis on the tests as indicators of the relative strength of the variables involved. Evidence indicates that the instruments involved do possess some degree of validity as measures of the variables, but there is room for error. While the validity of the Hs scale and the P.S. Functional Behavior test appears to be fairly well established by empirical findings, comparable data is non-existent, to the authors knowledge, in regard to the Exhibition scale of the EPPS. The third possible explanation is that the speculation is true but that the measures of the variables involved are not sufficiently sensitive to detect the relationship. The previous comments in regard to the validity of the measures used in this study apply equally well in evaluating this hypothesis.

The intercorrelations of the bodily concern scales exhibit considerable variation. The Homonym scale appears to have the least in common with the other measurements. It is possible that the lack of agreement between the Homonym scale as a measure of bodily concern and the other scales purporting to measure bodily concern lies in the method in which this scale was presented to the group. In his standardization of the scale Secord read the items to the subjects at a fixed rate and the subjects wrote their associations to the words. Secord found that a large number of subjects failed to respond on a considerable number of the words. He thus introduced a correction formula for omitted items. The correction

formula took into account the number of bodily responses on those words responded to, and projected it to obtain a score for the entire group of words. The formula is: $H_c = \frac{H - B}{H} H$, where H_c = the corrected homonym score, H = the original homonym score, and B = the number of blanks (Secord, 1955, p. 482).

In the present study the Homonym scale words were presented to the subjects printed on paper with a space beside the words to write the associations. It is thus possible that the method and formula used by Secord are very significant determiners of the final score of the individual. Further study of the Homonym scale is necessary to determine the effect of this procedural change on the Homonym scale's resulting score and consequently its validity.

The Peer ratings when correlated with the Hs scale and the P.S. Functional Behavior test yielded significant correlations (.27 and .26). The magnitude of these two correlations indicates that the peer ratings are measuring something quite different from the other two scales. The high positive correlation (.73) between the P.S. Functional Behavior test, a scale which requires the individual to enumerate his symptoms, and the Hs scale lends weight to the finding by Guthrie (1952) that those individuals in his group with a high score on the Hs Scale obtained their elevated score "primarily from the enumeration of their symptoms" (p. 145). This correlation is quite outstanding when the reliability of the two measures

are taken into account. The reliability of the Hs scale as reported in the MMPI manual was .81. The reliability of the P.S. Functional Behavior test as reported by Freeman (1950) was also .81. The correlation when corrected for attenuation is .90. This is the correlation which would be obtained if the variables were measured by perfectly reliable instruments.

Nine correlations between the bodily concern scales and the scales of the EPFS were significant and merit further attention. The Hs scale and the P.S. Functional Behavior test correlated .18 and .19 respectively (at the .05 level) with the EPFS scale of Succorance. Edwards describes the manifest need associated with the scale.

Succorance: To have others provide help when in trouble, to seek encouragement from others . . . to have others be sympathetic. . . , to be helped by others when depressed, to have one feel sorry when one is sick, to have a fuss made over one when hurt.

From this description of the items it appears that the Succorance scale is a measure of the need for sympathy. O'Kelly (1949) dwells quite heavily on the need for sympathy as a prime dynamic in the life adjustment of the hypochondriac. It would seem profitable, therefore, to study this relationship further.

Until adequate construct validation of the EPFS variables is obtained, caution must be used in interpreting the scales in regard to the description as presented by Edwards. Two correlations illustrate the necessity of being cautious

in the interpretation of the relationship of the bodily concern measures with the scales of the Edwards. The Hs scale correlated significantly in a positive direction (.20 at the .01 level) with the Dominance scale, while the P.S. Functional Behavior test correlated significantly (.16 at the .05 level) with the Abasement scale. From the description of these two scales as presented by Edwards the picture obtained as a result of the first correlation is somewhat dissimilar from that presented by the second correlation. The positive correlation between bodily concern, as measured by the Hs scale, and the EPPS scale of Dominance indicates that an individual with high bodily concern tends to:

. . . argue ones point of view, to be a leader in a group. . . , to make group decisions, to settle arguments and disputes. . . , to supervise and direct others . . . (Edwards, 1954, p. 5).

The positive correlation between bodily concern as measured by the P.S. Functional Behavior Test and scale of Abasement indicates that an individual with high bodily concern tends to:

. . . accept blame when things do not go right . . . , to feel better when giving in and avoiding a fight than when having one's own way . . . , to feel timid in the presence of superiors, to feel inferior to others in most respects (Edwards, 1954, p. 5).

It would seem that the picture of a dominant, aggressive leader in the one case and the timid, passive, follower in the other would lead to confusion in the study of the "basic" behavior pattern of the individual with high bodily concern. A possible

explanation of these findings is that both patterns do exist in relation to bodily concern. It should be noted that the correlation between the scales of Dominance and Abasement is only $-.30$. This indicates that the scales are not as opposite in nature as the description would seem to indicate. It should also be remembered that bodily concern is a symptom of several diagnostic categories thus it is possible that various dynamic patterns may surround its manifestation in these diagnostic categories. More definite conclusions are dependent on further validation of the EPPS scales. This speculation should be investigated by further study of the relationship of bodily concern to personality variables, with specific attention being paid to the possibility of non-linear relationships between the variables.

The negative correlation ($-.20$) of the P.S. Functional Behavior test with the EPPS scale of Change was significant at the $.01$ level while the correlation of the Hs scale with Change ($-.12$) approached the $.05$ level of significance. This indicates that as the bodily concern score increases on the P.S. Functional Behavior test there is a tendency in the opposite direction for the Change score. Edwards presents the following description of the manifest need associated with the Change variable.

Change: To do new and different things, to travel, to meet new people, to experience novelty and change in daily routine, to experiment and try new things, . . . to participate in new fads and fashions (Edwards, 1954, p. 5).

High ego-involvement with the body has been interpreted as a defense against anxiety (Secord, 1953 and Young, 1952).

It is possible that the defensive ego-involvement displayed by the high bodily concern group is a factor in their resistance to change. Lepley (1952) discusses the adaptability of variability of behavior and compares it to the behavior of certain character types exhibiting non-variable behavior. He makes reference to the "...compulsions, obsessions, and unshakeable systematic delusions of the psychotic...", and the "rigid, perseverative, compulsive, over-conforming..." (p. 22) behavior of the neurotic. Thus it would be expected that resistance to change would be correlated with a symptom of neurotic behavior.

Both the Hs Scale and P.S. Functional Behavior test correlated positively with the Aggression scale of the EPPS. The correlation of .16 between the P.S. Functional Behavior test and the aggression scale was significant at the .05 level of confidence, while the correlation of .21 between the Hs Scale and the Aggression scale was significant at the .01 level of confidence. Certain psychosomatic symptoms are commonly regarded to be the result of hostility. Such ailments as migraine headaches and peptic ulcer are examples which are frequently given. Symptom formation is often used as a plea for sympathy, as described earlier, which carries certain manipulative power for the individual. The individual may express his hostility by developing symptoms which in some way restrict the activities of the person toward which the hostility is directed. Young (1952) has commented on the expression of hostility as being a factor in symptom

development.

Both of the scales also correlated negatively, $-.18$ in the case of the P.S. Functional Behavior test, and $-.20$ in the case of the Hs Scale, with the variable of Endurance. This scale is associated with the manifest need to:

Keep at a job until it is finished, to complete any job undertaken, to work hard at a task, to keep at a puzzle or problem until it is solved, ...to stick at a problem even though it may seem as if no progress is being made, to avoid being interrupted while at work (Edwards, 1954, p. 5).

If a person registers concern about his body and its functioning, and has a large amount of physical complaints, that he may also feel that he is less able to keep at a task, and persevere in the face of difficulties perhaps as a result of his "frail" condition. This perhaps lends some weight to the speculation that bodily concern is a mechanism for "rationalizing failure" (Young, 1952, p. 546).

The interpretation of the relationships previously mentioned should take into account the low magnitude of the correlations obtained. The highest correlation obtained from the study of the bodily concern scales in relation to the EPPS scales was $.21$ (Hs with Aggression). While this correlation was significant the degree of relationship is rather low. Also since very little work has been performed in an attempt to obtain construct validation of the EPPS scales, the interpretation of the correlations in terms of psychological variables is somewhat difficult.

In any further study it is recommended that an attempt should be made to study more thoroughly the variables of dependence-independence and exhibition. The possibility of curvilinear relationships between the personality measures and the bodily concern variable should also be investigated. To determine the validity of the Homonym scale as a measure of bodily concern it should be further studied by using the method of presentation as outlined by Secord.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this study was to investigate the relationship of bodily concern to certain personality variables. Four measures of bodily concern were obtained from the residents of the womens dorms at Fort Hays Kansas State College. Three of the four measures were paper and pencil tests of bodily concern. One measure was the Hypochondrias scale of the MMPI. The second was the P.S. Functional Behavior test, an inventory which requires the subject to check the illnesses from which he suffers frequently or constantly. The third was the Homonym scale, a word association test which is made up of homonyms which have bodily meanings and non-bodily meanings. The fourth measure of bodily concern was obtained from a four point rating scale. The dorm counselors rated the girls for whom they were responsible on the variable of bodily concern. The personality variables were measured by the Edwards Personal Preference Schedule. This scale is based on 15 of Murray's manifest needs.

Three hypotheses were checked in the study of bodily concern.

- I. There is a positive relationship between bodily concern and the EPPS scale of Deference.
- II. There is a negative relationship between bodily concern and the EPPS scale of Autonomy.

III. There is a positive relationship between bodily concern and the EPPS scale of Exhibition.

The Deference and Autonomy scales were used as measures of the variable of independence-dependence. A high score on Deference being associated with dependency, while a high score on Autonomy being associated with independence.

Pearson product moment correlations were computed between the measures of bodily concern and all 15 variables of the EPPS. Intercorrelations of the EPPS scales were also obtained as were the intercorrelations of the bodily concern measures. Scorer reliability of the Homonym scale was obtained by selecting a random sample of the scales and submitting them to two independent scorers. A Pearson product moment correlation was computed between the scores obtained from the two independent scorers.

The hypotheses were not supported by the results. In regard to the testing of hypothesis II, no significant correlations were found. In regard to hypotheses I and III, significant correlations in the opposite direction from those predicted were obtained. Thus significant negative correlations at or beyond the .05 level of confidence were obtained between at least one bodily concern scale and the variables of the EPPS of Deference and Exhibition.

Significant positive correlations at or beyond the .05 level of confidence were obtained between at least one bodily

concern scale and the variables on the EPPS of Succorance, Dominance, Abasement, and Aggression.

Significant negative correlations at or beyond the .05 level of confidence were obtained between at least one bodily concern scale and the variables of the EPPS of Change, Order, Abasement, and Endurance.

The intercorrelations of the bodily concern measures indicated that the Homonym scale did not correlate significantly with the other bodily concern scales. It was felt that the method of presentation of this scale could possibly have been a determining factor in its lack of relationship with the other bodily concern scales. The peer rating correlated with the Hs scale and P.S. Functional Behavior test yielded correlations which were significant at the .01 level (.26 and .27 respectively). The P.S. Functional Behavior test correlated .73 with the Hs scale. The interscorer reliability coefficient for the Homonym scale was .88.

The various correlations were discussed and certain recommendations were made with regard to the possibility of further research in this area.

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APPENDIX A

This inventory consists of numbered statements. Read each statement and decide whether it is true as applied to you or false as applied to you. If a statement is TRUE or MOSTLY TRUE, as applied to you, place a T in the parenthesis. If a statement is FALSE or NOT USUALLY TRUE, as applied to you, place an F in the parenthesis. Remember to give YOUR OWN opinion of yourself.

- () 1. I have a good appetite.
- () 2. I wake up fresh and rested most mornings.
- () 3. My hands and feet are usually warm enough.
- () 4. I am about as able to work as I ever was.
- () 5. I am very seldom troubled by constipation.
- () 6. I am troubled by attacks of nausea and vomiting.
- () 7. I am bothered by acid stomach several times a week.
- () 8. My sleep is fitful and disturbed.
- () 9. I am in just as good psysical health as most of my friends.
- () 10. I am almost never bothered by pains over the heart or in my chest
- () 11. Parts of my body often have feelings like burning, tingling, crawling, or like "going to sleep".
- () 12. I have had no difficulty in starting or holding my bowel movements.
- () 13. I hardly ever feel pain in the back of the neck.
- () 14. I am troubled by discomfort in the pit of my stomach every few days or oftener.
- () 15. I have little or no trouble with my muscles twitching or jumping
- () 16. There seems to be a fullness in my head or most of the time.
- () 17. Often I feel as if there were a tight band about my head.
- () 18. I have a great deal of stomach trouble.
- () 19. I have never vomited blood or coughed up blood.
- () 20. During the past few years I have been well most of the time.
- () 21. I am neither gaining or losing weight.
- () 22. The top of my head sometimes feels tender.
- () 23. I do not tire quickly.
- () 24. I seldom or never have dizzy spells.
- () 25. I can read a long while without tiring my eyes.
- () 26. I feel weak all over much of the time.
- () 27. I have very few headaches.
- () 28. I have had no difficulty in keeping my balance in walking.
- () 29. I hardly ever notice my heart pounding and I am seldom short of breath.
- () 30. I have few or no pains.
- () 31. I have numbness in one or more regi ns of my skin.
- () 32. My eyesight is as good as it has been for years.
- () 33. I do not often notice my ears ringing or buzzing.

APPENDIX B

Health Inventory

Please place a check mark alongside those ailments from which you suffer frequently or constantly.

- | | |
|---|--|
| <input type="checkbox"/> 1. Tuberculosis | <input type="checkbox"/> 41. Hemorrhoids |
| <input type="checkbox"/> 2. Asthma | <input type="checkbox"/> 42. Colitis |
| <input type="checkbox"/> 3. Kidney trouble | <input type="checkbox"/> 43. Habit of taking sleeping tablets |
| <input type="checkbox"/> 4. Heart trouble | <input type="checkbox"/> 44. Earaches |
| <input type="checkbox"/> 5. Fatigue in the evening | <input type="checkbox"/> 45. Headcolds |
| <input type="checkbox"/> 6. Backaches | <input type="checkbox"/> 46. Unpleasant feelings in the bowels |
| <input type="checkbox"/> 7. Nausea | <input type="checkbox"/> 47. Underweight |
| <input type="checkbox"/> 8. Fatigue in the morning | <input type="checkbox"/> 48. Overweight |
| <input type="checkbox"/> 9. Rheumatism | <input type="checkbox"/> 49. Twitching of the face or hands |
| <input type="checkbox"/> 10. Chest pains | <input type="checkbox"/> 50. Frequent vomiting |
| <input type="checkbox"/> 11. Sinusitis | <input type="checkbox"/> 51. Gas on stomach |
| <input type="checkbox"/> 12. Nearsightedness | <input type="checkbox"/> 52. Hiccoughs |
| <input type="checkbox"/> 13. Hot flushes of the face | <input type="checkbox"/> 53. Difficulty in swallowing |
| <input type="checkbox"/> 14. Spells of dizziness | <input type="checkbox"/> 54. Difficulty in urinating |
| <input type="checkbox"/> 15. Difficulty in falling asleep | <input type="checkbox"/> 55. Bronchitis |
| <input type="checkbox"/> 16. Constipation | <input type="checkbox"/> 56. Being physically "on edge" irritable |
| <input type="checkbox"/> 17. Goiter | <input type="checkbox"/> 57. Feeling of faintness |
| <input type="checkbox"/> 18. Nervous stomach | <input type="checkbox"/> 58. Frequent nosebleed |
| <input type="checkbox"/> 19. Hypothyroidism | <input type="checkbox"/> 59. Being easily startled |
| <input type="checkbox"/> 20. Diarrhea | <input type="checkbox"/> 60. Spells of being hot or cold |
| <input type="checkbox"/> 21. Tonsillitis | <input type="checkbox"/> 61. Convulsions |
| <input type="checkbox"/> 22. Headaches | <input type="checkbox"/> 62. Intermittent fevers |
| <input type="checkbox"/> 23. Ulcer of the stomach | <input type="checkbox"/> 63. High blood pressure |
| <input type="checkbox"/> 24. Hives and rashes | <input type="checkbox"/> 64. Easily disturbed by noises |
| <input type="checkbox"/> 25. Diabetes | <input type="checkbox"/> 65. Hernia |
| <input type="checkbox"/> 26. Frequent urination | <input type="checkbox"/> 66. Throat trouble |
| <input type="checkbox"/> 27. Gall bladder trouble | <input type="checkbox"/> 67. Palpitation of the heart with difficulty in breathing |
| <input type="checkbox"/> 28. Pressure at the back of the neck | <input type="checkbox"/> 68. Apoplexy |
| <input type="checkbox"/> 29. Eye-muscle pain | <input type="checkbox"/> 69. Low blood pressure |
| <input type="checkbox"/> 30. Shooting head pains | <input type="checkbox"/> 70. Inability to feel rested |
| <input type="checkbox"/> 31. Arthritis | <input type="checkbox"/> 71. Feeling of suffocating while in crowds or elevators |
| <input type="checkbox"/> 32. Indigestion | <input type="checkbox"/> 72. Loss of appetite |
| <input type="checkbox"/> 33. Anemia | <input type="checkbox"/> 73. Feeling depressed or miserable |
| <input type="checkbox"/> 34. Pain in the stomach | <input type="checkbox"/> 74. Frequent discouragement |
| <input type="checkbox"/> 35. Epilepsy | <input type="checkbox"/> 75. Much bodily nervous tension |
| <input type="checkbox"/> 36. Ringing or buzzing in ears | <input type="checkbox"/> 76. Physical restlessness |
| <input type="checkbox"/> 37. Various allergies | <input type="checkbox"/> 77. Hurried speech |
| <input type="checkbox"/> 38. Aching of muscles | |
| <input type="checkbox"/> 39. Liver trouble | |
| <input type="checkbox"/> 40. Cold sweat | |

- ()78.Stuttering
- ()79.Daydreaming
- ()80.Being easily disturbed and
frightened
- ()81.Fussiness about food
- ()82.Fear of being alone in the dark
- ()83.Being too easily irritated
- ()84.Being too often exhausted
- ()85.Frequent forgetfulness
- ()86.Frequent mental distraction
- ()87.Frequent fear of death
- ()88.Excessive worry
- ()89.Lack of patience
- ()90.Nervousness
- ()91.Losing temper easily

APPENDIX C

Homonym Scale

Directions

Name: _____

Leave this paper face down on your table. When you turn this paper over you will find a list of words. Read the first word and immediately write down in the space provided the first word that enters your mind. Do this for each of the words. Try to complete the test as quickly as possible. There are No right or wrong answers. Remember, write down the first word that comes to your mind. Are there any questions?

- | | | |
|---------------------|-------------------|-----------------------|
| 1. acid _____ | 34. lamp _____ | 67. socket _____ |
| 2. actor _____ | 35. layer _____ | 68. soup _____ |
| 3. acute _____ | 36. light _____ | 69. spotted _____ |
| 4. arch _____ | 37. limb _____ | 70. spurt _____ |
| 5. attack _____ | 38. lining _____ | 71. spread _____ |
| 6. back _____ | 39. middle _____ | 72. stain _____ |
| 7. bark _____ | 40. mole _____ | 73. stay _____ |
| 8. bare _____ | 41. nail _____ | 74. still _____ |
| 9. barn _____ | 42. nap _____ | 75. stitch _____ |
| 10. beat _____ | 43. navel _____ | 76. strip _____ |
| 11. blotch _____ | 44. ooze _____ | 77. stump _____ |
| 12. circulate _____ | 45. orchard _____ | 78. swell _____ |
| 13. colon _____ | 46. organ _____ | 79. sweet _____ |
| 14. collie _____ | 47. pair _____ | 80. system _____ |
| 15. condition _____ | 48. part _____ | 81. tablet _____ |
| 16. confine _____ | 49. patient _____ | 82. tan _____ |
| 17. contact _____ | 50. prize _____ | 83. tape _____ |
| 18. continue _____ | 51. probe _____ | 84. tar _____ |
| 19. contract _____ | 52. pump _____ | 85. temperature _____ |
| 20. crisis _____ | 53. quack _____ | 86. tender _____ |
| 21. digit _____ | 54. rain _____ | 87. tent _____ |
| 22. enlarged _____ | 55. rash _____ | 88. tissue _____ |
| 23. extract _____ | 56. rat _____ | 89. treat _____ |
| 24. fiber _____ | 57. red _____ | 90. trench _____ |
| 25. fish _____ | 58. regular _____ | 91. trunk _____ |
| 26. function _____ | 59. run _____ | 92. trial _____ |
| 27. gag _____ | 60. scarlet _____ | 93. twist _____ |
| 28. gall _____ | 61. scrape _____ | 94. vessel _____ |
| 29. game _____ | 62. side _____ | 95. visit _____ |
| 30. gas _____ | 63. sing _____ | 96. vote _____ |
| 31. glassy _____ | 64. sling _____ | 97. vogue _____ |
| 32. graft _____ | 65. smart _____ | 98. waist _____ |
| 33. index _____ | 66. smear _____ | 99. win _____ |
| | | 100. wrench _____ |

APPENDIX D

APPENDIX E

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
	Hom.	P.R.	Con.	P.S.	Hs.	Ach.	Def.	Ord.	Exh.	Aut.	Aff.	Int.	Suc.	Dom.	Aba.	Nut.	Cha.	End.	Het.	Agg.	
1 Homonym	<u>.88</u> ¹	<u>.18</u>	-.04	-.04	-.11	.12	-.10	-.03	.13	.08	.04	-.01	.01	.12	<u>-.15</u>	<u>-.14</u>	<u>-.08</u>	<u>-.11</u>	.09	.01	
2 Peer Ratings			.00	<u>.26</u>	<u>.27</u>	.14	.06	-.09	.05	-.12	.06	.00	.14	.00	.05	.05	-.06	-.05	-.12	-.01	
3 Consistency				.03	.07	.12	.00	-.05	-.12	-.05	<u>-.16</u>	<u>.15</u>	.06	-.03	-.01	-.04	<u>-.15</u>	.04	.08	.03	
4 P.S. Fun. B.					<u>.73</u>	.09	-.08	-.07	<u>-.19</u>	.00	-.02	-.10	<u>.19</u>	.08	<u>.16</u>	.06	<u>-.20</u>	<u>-.18</u>	.05	<u>.16</u>	
5 Hs Scale						.12	<u>-.16</u>	<u>-.16</u>	.00	.01	-.10	-.11	<u>.18</u>	<u>.20</u>	.06	.05	-.12	<u>-.20</u>	.04	<u>.21</u>	
6 Achievement							.04	.02	.07	.05	<u>-.41</u>	-.07	.00	<u>.17</u>	<u>-.28</u>	<u>-.36</u>	<u>-.16</u>	.04	-.09	.12	
7 Deference								<u>.31</u>	<u>-.24</u>	<u>-.23</u>	.03	.17	<u>-.18</u>	<u>-.22</u>	<u>.22</u>	-.08	-.06	<u>.30</u>	<u>-.40</u>	<u>-.37</u>	
8 Order									<u>-.20</u>	-.06	<u>-.16</u>	<u>-.21</u>	-.13	<u>-.16</u>	.04	<u>-.14</u>	<u>-.18</u>	<u>.29</u>	<u>-.21</u>	<u>-.18</u>	
9 Exhibition										<u>.14</u>	-.08	-.12	-.06	<u>.17</u>	<u>-.27</u>	<u>-.18</u>	.05	-.14	.07	.05	
10 Autonomy											<u>-.22</u>	<u>-.21</u>	.06	.06	<u>-.30</u>	<u>-.24</u>	.00	<u>-.26</u>	.09	<u>.31</u>	
11 Affiliation												.03	.08	<u>-.16</u>	.08	<u>.48</u>	<u>.18</u>	<u>-.24</u>	-.13	<u>-.38</u>	
12 Intraception													<u>-.24</u>	-.08	.11	.10	-.07	.08	<u>-.25</u>	<u>-.20</u>	
13 Succorance														<u>-.18</u>	.02	<u>.19</u>	<u>-.32</u>	<u>-.40</u>	<u>.18</u>	.01	
14 Domination															<u>-.30</u>	<u>-.28</u>	-.03	-.01	-.06	<u>.19</u>	
15 Abasement																<u>.20</u>	<u>-.20</u>	.03	<u>-.20</u>	<u>-.19</u>	
16 Nuturance																	<u>-.18</u>	-.12	<u>-.20</u>	<u>-.28</u>	
17 Change																			.00	.07	.08
18 Endurance																				<u>.43</u>	-.12
19 Hetersex .																					<u>.22</u>

 = Significant at the .05 level

 = Significant at the .01 level

¹ = Interscorer reliability

APPENDIX F

Peer Ratings

Name _____

Name _____
The girl you are rating

Draw a circle around the number of the category which best describes the girl you are rating.

1	2	3	4
<u>Very Low</u>	<u>Low</u>	<u>High</u>	<u>Very High</u>

1. Very Low indicates an individual who does not show concern for her health and who tends to deny that she is sick even when she is sick. This girl takes pride in the fact that she is very healthy and never complains of bodily symptoms.
2. Low indicates an individual who tends not to complain of feeling bad or of being ill, much like the girl represented by Very Low. This girl, however, does not tend to deny illness to the extent that a girl characterized as Very Low would. Thus, when this girl is ill she will be more likely to accept it and not attempt to wholly deny it.
3. High indicates a girl who at times complains of being sick and tends to picture herself as being somewhat frail and susceptible to illness. This girl is more like the Very High than the other categories as she complains some of feeling bad. She does not exhibit as much concern for her body and sickness as the Very High girl.
4. Very High indicates a girl who feels she is frail and sickly, and who frequently complains of aches and pains. She worries excessively about her health and appears to be never well.