

Phyllis R. Sweet Kathleen M. Johnson University of Lowell

# METHOD

This study is part of an effort aimed at developing a reliable and valid paper and pencil test of attitude toward health and pain. The study is correlative in nature involving the administration, correlation and analysis of data from a series of survey instruments.

Four questionnaires were administered in two sessions to 120 students. Out of one hundred and twenty sets of questionnaires, only fifty-five were complete.

Sample. Fifty-five undergraduate students, enrolled in either psychology or sociology courses at the University of Lowell, completed all inventories used in this study. (One hundred twenty students completed some of the instruments used). Only 14.5% students were psychology or sociology majors. None of the students had undergone any psychiatric treatment. There are 23.7% females and 76.3% males. The average age is 20 years, 5 months. Foreign students made up 5.5% of the sample.

## INVENTORIES USED

Personality Instruments. Two personality inventories were used: (1) The Edwards Personal Preference Schedule, (EPPS) and (2) selected scales of the Minnesota Multi-Phasic Personality Inventory, (MMPI). Both personality inventories are fixed-alternative questionnaires. The EPPS consists of 220 questions yielding 16 scales. The inventory derived from the MMPI consisted of 171 questions yielding 10 scales.

Pain Perception Inventory. A two page, 30 item index was used to measure the perception of pain and related health attitudes. This form of the 30 forced choice items inventory, yielded two derived scales described on the basis of apparent meaning, as follows:

(1) The Intellectualization-Suppression (I-S) Scale contrasts the respondent's belief in regard to the cause of pain with expected or experienced behavioral manifestations of the individual when faced with pain. High scores on this scale represent a tendency toward projection and intellectualization in the analysis by the respondent of the causality of pain. Low scores reveal a tendency to deny to act in a dependent manner and/or to isolate oneself when in a painful condition.

(2) The Anti-Professional Attitude (APA) Scale appears to reflect antagonism toward professional help. The high scoring individual exhibits chronic complaint behavior, sees no need to seek help for emotional pain and does not like doctors.

Personal Information Survey. Each subject was asked to fill out an optional personal information survey. From this sheet, information pertaining to age, sex, family income, extent of psychiatric care, and academic major was ascertained. Fifty-three respondents completed this form.

Hypotheses. Through analysis of prior studies and content analysis of the personality instruments used, a series of 151 hypotheses were developed. These hypotheses were intended as an exploratory test of the construct validity of the PPI-Form II as a paper and pencil measure of the perception of pain and of attitudes toward health.

These hypotheses were tested by correlational analysis. Pearson correlations, omitting missing data, were performed on all data from the 55 subjects. Sixty-eight null hypotheses were upheld.

TABLE I  
REJECTED NULL HYPOTHESES RELATING PERSONALITY VARIABLES AND PPI ITEMS AND SCALES  
( $r \geq \pm 0.30$ )

PERSONALITY VARIABLES	PPI ITEMS/SCALES NUMBER	PPI ITEMS/SCALES STATEMENT	PEARSONIAN CORRELATION(r=)	PROBABILITY LEVEL (p=)
EPPS-Intracception	P5	Pain may be a physical sensation.	-.377	.002
	P18	Certain types of pain are a physical sensation.	-.353	.004
EPPS-Abasement	P13	Pain is not only physical.	0.336	.006
	P25	I would never seek help for emotional pain.	-.306	.011
EPPS-Achievement	P28	Pain is only mental.	-.299	.013
EPPS-Nurturance	P16	Pain may be an emotional sensation.	0.334	.005
EPPS-Affiliation	P16	Pain may be an emotional sensation.	0.448	.001
EPPS-Aggression	P16	Pain may be an emotional sensation.	-.314	.010
	P25	I would never seek help for emotional pain.	0.410	.001
EPPS-Exhibition	P23	I tend to complain about even the smallest ache or pain.	0.297	.014
EPPS-Order	P3	People usually cause physical but not emotional pain.	0.408	.001
EPPS-Consistency	P12	I only seek help for check-ups.	-.333	.006
	P13	Pain is not only physical.	-.347	.005
	P24	Pain may be a physical and emotional sensation.	0.318	.009
MMPI - L Scale	P29	Pressure to succeed can cause emotional pain.	-.311	.010
MMPI - K Scale	P29	Pressure to succeed can cause emotional pain.	-.442	.001
MMPI - F Scale	P8	I have had no experience with physical pain.	0.310	.013
	P23	I tend to complain about even the smallest ache or pain.	0.298	.014
	P27	I would never seek help for physical pain.	0.301	.013
MMPI-Hysteria (Hy)	P11	Pain cannot be endured	0.334	.006
	PPI-1	PPI-Form II-Scale 1	0.334	.006
MMPI-HS (K) Scale	P18	Certain types of pain are a physical sensation.	-.303	.012
	P29	Pressure to succeed can cause emotional pain.	-.362	.003
MMPI-Admission of Symptoms	PPI 1	PPI-Form II-Scale 1	0.326	.007
MMPI-Denial of Symptoms	P29	Pressure to succeed can cause emotional pain.	-.314	.010

## RESULTS

Of the 83 null hypotheses which were rejected, 25 showed correlations of + 0.30, relationships of moderate or greater magnitude, (see Table 1). The items which showed moderate correlations may be viewed as clusters in relation to the personality scales with which they correlate. This study may be viewed as reflecting the personality structure of people, who, although not in pain, are responding to questionnaires within the confines of "what if I were ill, in pain, etc."

The EPPS Scale, Intracception, relates to observation, analysis and understanding of others motives, feelings and problems. The magnitude and direction of the correlation of this scale with items 5 and 18 indicate respondents expand the meaning of pain beyond the physical. These items may thus be seen as reflecting the individual's empathetic understanding of the meaning of pain.

The EPPS scale, Abasement, reflects the tendency of the individual to accept blame and to feel guilty when things go wrong. The implication behind the relationship of this scale and items 13 and 25 seems to be that the respondent is accepting an emotional component to pain. Further, if one accepts the correlation as evidence of related meaning, it appears that the emotional component brings with it a feeling of shame or guilt which is not present if one denies that pain expands beyond a physical sensation.

The EPPS scale, Achievement, relates to the effort to do one's best, to accomplish tasks requiring skill and effort. Once again, there is a relationship to item 28, which denies the unidimensionality of the pain experience. Here, the high achiever denies that pain is only mental.

The EPPS scale, Nurturance, relates to being supportive of others. Affiliation relates to loyal participation in groups. Aggression involves attacking contrary viewpoints. These three scales are all correlated with item 16. The apparent meaning is that supportive friendly individuals accept the likelihood that pain may have emotional component. To the more aggressive individual, the emotional component of pain is denied, both in item 16 and in the additionally correlated item 25.

The EPPS scale, Exhibition, involves the need to have others notice one. The PPI item 23 involves the same need, within the health context. Like the trait, exhibitionism, the complaint behavior admitted can be too extensive.

The EPPS scale, Order, involves being neat and orderly and making plans in advance. This scale is correlated with item 3 indicating that the orderly individual tends to blame others for inflicting physical pain but not for the emotional aspects of pain.

The EPPS scale, Consistency, is a measurement device intended to determine the seriousness with which an individual completes the questionnaire. If we can extend this attitude from one instrument in a set to another, then consistency may also be measured by items 12 and 13 being answered positively. Thus, content aside, we can assume that there is a serious attempt by the respondent to relate information if these 3 items are answered according to the formula above.

The three validity scales of the MMPI, F, L and K Scales, represent additional measurement devices. High F Scale scores represent confused or careless answers. High L Scale scores represent the attempt to avoid answering frankly and honestly. High K Scale scores represent defensiveness in answering questions. Under the same reasoning as given above for the EPPS Consistency Scale, agreement with items 8, 23 and 27 represent confused or careless answers (see especially item 8). Disagreement with item 29 would represent both high L and K Scale scores showing an attempt to maintain privacy.

The MMPI Scale, Hy (Hysteria), is described as one in which persons who score highly use physical symptoms as a means of solving difficult conflicts or of avoiding mature responsibility. This scale correlates positively with item 11 and with the PPI I-S Scale. The content of both the item and the scale do project the picture of acting out when faced with the pain experience, as would be consistent with the described personality scale.

The MMPI Scale, Hs (Hypochondriasis) with K correction, represents persons with the stereotyped pictures of hypochondriasis. These individuals show abnormal concern for their bodily functions. They are egocentric and immature. The K correction controls for a person covering up for his true response. The correlations between this scale and items 18 and 29 indicate a generalized, physically based view of pain.

The MMPI derived Scale, Ad (Admission of Symptoms) is a scale derived from the Hy Scale and composed of all the items related to somatic complaints. The higher the score, the greater the number of complaints. This scale correlates positively with the PPI I-S Scale. Since it is a derivation of the Hy Scale, it is likely that the correlation between Scale 1 and Hy accounts for the correlation between PPI Scales and the Ad Scales. However, it should be noted that the Dn Scale (described below) was also derived from Hy and there is no significant relationship between Dn and the PPI I-S Scale. In either case, the construct measured by the Ad scale is consistent with the tendency of the individual scoring high on the PPI toward intellectualization in the form of somatic symptoms.

The MMPI derived Scale, Dn (Denial of Symptoms) is also derived from the Hy Scale. It correlates negatively with the Ad Scale. The higher an individual's score, the more denial or problems relating to inadequacies, basic self control and empathy. This scale is negatively correlated with item 29 indicating a denial of the emotional effects of pressure.

In all, significant moderately high correlations appear to support the construct validation of 14 items of the 30 item PPI as well as of the first factor scale. However, the constructs against which the items and scales are judged themselves modify the meanings assumed under conditions of face validity. These modifications are discussed below:

#### DISCUSSION

This attempt to validate the PPI - Form II as a paper and pencil test of attitude toward health and pain, may be considered as relatively successful.

Hypothetical relationships between various selected personality variables and both the items and scales of the PPI were tested. Of the initial 151 hypotheses, no relationship was found for 68 in this sample, using the selected personality instruments. Fifty-eight correlations reached the level of significance, but the magnitude of these correlations (less than  $\pm 0.30$ ) did not reach the standard chosen for validation purposes. The remaining 25 hypotheses are herein accepted as construct validation of the relevant items and scales.

An internal validity scale of 7 items can be identified. These items, 8, 12, 13, 23, 24, 27 and 29, with appropriate responses can be taken as a measure of a serious, open and careful attempt to respond to the questionnaire. Since further tests of these items have not been undertaken, their use as a validity scale must presently be of "all or nothing" nature. A score of 7 would yield a valid questionnaire, a score of 0 would yield an invalid one, all other scores are more or less questionable.

Ten items, including three which are also part of the validity scale, may be said to be construct validated. Nine of these items make up part of the 26 item PPI I-S Scale. The remaining item falls on the 4 item PPI APA Scale. As indicated above, these items, in the process of construct validation, are also subject to some modification of meaning.

Eight of the validated items, 3, 5, 11, 13, 16, 18, 28 and 29 are, on the face of it, concerned with definitional aspects of pain. However, this study expands this meaning to include a component best described as one which addresses the question, "How do you know?" For each of these items, respondents indicate, through their responses in regard to the personality variables, that they have learned through observation of others than pain is multi-

dimensional. Their view of the pain experience is mediated by their experiences within groups as loyal and supportive members. There is further an evident ability to put oneself in the place of one feeling pain which joins with a kind of egocentrism that relates all experiences to oneself, thus helping to define the experience.

The remaining two items, 23 and 25 relate to the seeking of care for painful experiences. On the one hand, these items indicate a reticent, intrapunitive and submissive attitude about pain. On the other hand, the individual is shown to be exhibitionistic, extrapunitive, impatient and a demanding subject.

Finally, the meaning of the PPI I-S Scale is, through this study, somewhat modified from that given above. The PPI I-S Scale may be viewed as one in which the high scoring individual uses pain as a way of avoiding responsibility for his own actions. Additionally, the scale may reflect somatic complaints which, although not part of the overt content of the scale, appears to underline the scale.

This attempt at validation should be viewed as exploratory, limited and subject to questions relating to sample generalizability and selections of validating standards. The latter questions can be answered in reference to the literature. The scales selected are consistent with those used in the studies reviewed. The former question can only be addressed by a series of replicatory studies using different age, educational and geographic background at the least. Even with these reservations, this study appears to be an appropriate beginning.