

A FACTOR ANALYSIS OF ITEMS ON THE MMPI PSYCHOPATHIC DEVIATE SCALE¹

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PREVIOUS papers (1, 2, 3) have reported results of factor analyses of items on the Hypochondriasis, Depression, and Hysteria scales of the *Minnesota Multiphasic Personality Inventory* (4). The most important factor in the Hs scale, Poor Physical Health, was used to suggest items for a new scale entitled "Health Concern." The most important new factor in the D scale analysis was called "Neuroticism" and a scale based on this factor was suggested. Both these factors were again isolated in the Hy scale analysis along with two other factors judged to be of sufficient clarity and importance to warrant scale construction. These two factors were called "Shyness" and "Cynicism." For neither of these two factors were sufficient items present on the Hy scale to provide an adequate scale.

The current analysis, continuing the series of analyses for the important abnormal MMPI scales, is devoted to the 50 items from the Psychopathic Deviate (Pd) scale plus three additional dichotomized variables, Age, Sex, and Hospitalization. Although more procedural details are given in the first article (1), the main steps will be mentioned here. The sample was about equally divided among men and women, hospital patients and normals, and 77 per cent were of age 25 or more. The hospital patients were of random psychiatric diagnosis and almost all from the Los Angeles

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Veterans' Administration Hospital. Most of the normals were education students selected for a broad age range, although 80 "normal" cases were individuals who had sought psychological help.

Phi coefficients were computed for the 53 variables and are given in Table 1.² Phi was preferred to phi over phi max and the tetrachoric r because analyses with these two latter coefficients proved to be somewhat unsatisfactory (1). Thirteen factors were extracted using the complete centroid method. The last factor had values of $-.20$ and $.17$ for the two highest loadings. Factor XII was no more imposing and actually no loading in excess of $.3$ occurred after factor IV. Analytic orthogonal rotations were carried out using Kaiser's Varimax method (5). This method tends to maximize the variance of the extended vector loadings over pairs of columns through an iterative procedure in which each factor is rotated with each other factor until an acceptable degree of convergence occurs. No hand adjustments have been made to any of the factors in this solution. The rotated factor loadings plus communalities are given in Table 3. Centroid factor loadings and the proportions of "yes" responses for each item are given in Table 2.

Five of the thirteen factors were of minor or negligible importance. Factor VII had no loading of $.3$ or more. Factor IX had two loadings of $.34$ and $.32$, respectively, for items "My hardest battles are with myself," and "My conduct is largely controlled by the customs of those about me." Factor X has a loading of $.42$ for "Age" and one of $.3$ for "I have been disappointed in love." Since the latter is often regarded as an inevitable consequence of the former, the factor seems meaningful despite its lack of prominence. Actually, Age appeared as the dominant variable on a minor factor in the previous analyses. Factor XI has only a loading of $.35$ for "I am against giving money to beggars." Finally, Factor XIII is like a residual factor found in previous analyses and called "Hospitalization." Loadings were $-.49$ for "I am neither

²Tables 1, 2, and 3 have been deposited with the American Documentation Institute. Order Document No. 5444 from the ADI Auxiliary Publications Project, Photoduplication Service, Library of Congress, Washington 25, D. C., remitting in advance \$1.25 for 35 mm microfilm or \$1.25 for 6 x 8 in. photocopies readable without optical aid. Make check payable to Chief, Photoduplication Service, Library of Congress.

gaining nor losing weight" and .36 for "Hospitalization." Also present was a loading of .30 for "At times I have very much wanted to leave home." The relative importance of the two major variables was reversed in the appearance of a similar factor in the analysis of Hs scale items.

Eight factors were of sufficient importance to warrant individual treatment and naming. Following each factor name, the number of loadings between $-.1$ and $.1$ will be given in parentheses as an indication of hyperplane density. Loadings of $.3$ or more will be presented for each factor together with the MMPI items involved. In the case of items with extreme values for p , the factor loadings may be expected to be somewhat lower than they would be with tetrachorics, since there is an artificial restriction on ϕ (1).

I. *Neuroticism* (19). This factor has been previously identified in two analyses of the series (2, 3). It appears to be one of the two most pervasive factors in the MMPI from the results obtained to this point. A scale of items to measure a Neuroticism factor was suggested in the report of the D scale analysis.

TABLE A

Item	Loading	Description
8	-.62	My daily life is full of things that keep me interested.
107	-.58	I am happy most of the time.
67	.57	I wish I could be as happy as others seem to be.
94	.54	I do many things which I regret afterwards. (I regret things more or more often than others seem to.)
106	.50	Much of the time I feel as I have done something wrong or evil.
32	.49	I find it hard to keep my mind on a task or job.
137	-.49	I believe that my home life is as pleasant as that of most people I know.
216	.46	There is very little love and companionship in my family as compared to other homes.
20	-.39	My sex life is satisfactory.
284	.39	I am sure I am being talked about.
84	.35	These days I find it hard not to give up hope of amounting to something.
24	.31	No one seems to understand me.
267	.30	When in a group of people I have trouble thinking of the right things to talk about.

II. *Paranoia* (29). Perhaps the title selected makes too many assumptions about the variance represented on this factor. The individual differences at work here may be to a considerable extent

in the area of real rather than imagined persecution. No judgment is intended at the moment on the extent to which the factor involves only the latter phenomenon. An analysis of the Paranoia scale items may help to resolve this question.

TABLE B

Item	Loading	Description
35	.70	If people had not had it in for me I would have been much more successful.
110	.60	Someone has it in for me.
16	.55	I am sure I get a raw deal from life.
24	.51	No one seems to understand me.
245	.35	My parents and family find more fault with me than they should.
284	.33	I am sure I am being talked about.
33	.31	I have had very peculiar and strange experiences.

III. *Psychopathic Personality* (33). One loading under .3 has been given with this factor because it played a part in the tentative identification. Positive responses to the items could be considered as desirable from many points of view. The fact that the Hospitalization variable had one of its higher loadings here, however, places a somewhat different light on the factor. Actually, the Hospitalization variable is not a very clearcut one in that the normal group contains a substantial number of individuals who had sought psychological help. Many of these persons were disturbed to a considerable degree though not hospitalized. This fact has probably depressed the loadings for the Hospitalization variable. The hypothesis is offered, then, that this factor represents a psychopathic disregard for the ordinarily steadying influence of public opinion.

TABLE C

Item	Loading	Description
170	.50	What others think of me does not bother me.
287	.43	I have very few fears compared to my friends.
289	.37	I am always disgusted with the law when a criminal is freed through the arguments of a smart lawyer.
91	.35	I do not mind being made fun of.
—	.26	Hospitalization vs. Non-Hospitalization.

IV. *Shyness* (23). This same factor previously occurred in the analysis of items on the Hy scale (3). The factor was regarded as being of sufficient importance to warrant development of a separate scale for its measurement.

TABLE D

Item	Loading	Description
180	.65	I find it hard to make talk when I meet new people.
267	.61	When in a group of people I have trouble thinking of the right things to talk about.
201	.53	I wish I were not so shy.
171	.51	It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of things.
82	.46	I am easily downed in an argument.
224	.33	My parents have often objected to the kind of people I went around with.
94	.32	I do many things which I regret afterwards. (I regret things more or more often than others seem to.)

V. *Delinquency* (37). This factor seems to be principally concerned with an early history of delinquent behavior. Since there are few items on the factor, two smaller loadings are given which aid in the identification.

TABLE E

Item	Loading	Description
38	.52	During one period when I was a youngster I engaged in petty thievery.
118	.47	In school I was sometimes sent to the principal for cutting up.
224	.28	My parents have often objected to the kind of people I went around with.
—	.27	Sex (Masculinity vs. Femininity).

VI. *Euphoria* (32). The two principal variables on this factor were also the defining items for a factor of the same name in the analysis of the D scale items. Loadings were very similar.

TABLE F

Item	Loadings	Description
248	.58	Sometimes without any reason or even when things are going wrong I feel excitedly happy, "on top of the world."
296	.57	I have periods in which I feel unusually cheerful without any special reason.
134	.32	At times my thoughts have raced ahead faster than I could speak them.

VIII. *Anti-Social Behavior* (34). The four variables listed for this factor constitute an interesting quartette describing the life of many an unfortunate individual. The loading for the Hospitalization variable has been added because it probably would be higher for a different dichotomization of the sample.

TABLE G

Item	Loading	Description
215	.57	I have used alcohol excessively.
294	-.54	I have never been in trouble with the law.
—	.32	Sex (Masculinity vs. Femininity).
—	.25	Hospitalization vs. Non-Hospitalization.

XII. *Family Dissension* (33). The loadings on this factor are not very high nor are there too many items upon which to make an identification in such a vague area, but the predominant contest seems to be concerned with a quarrelsome and critical family situation.

TABLE H

Item	Loading	Description
96	-.47	I have very few quarrels with members of my family.
245	.38	My parents and family find more fault with me than they should.
137	-.36	I believe that my home life is as pleasant as that of most people I know.
37	-.35	I have never been in trouble because of my sex behavior.
21	.33	At times I have very much wanted to leave home.
216	.31	There is very little love and companionship in my family as compared to other homes.

Discussion

Results from this analysis agree well with those of the previous analyses. Factors I, IV, and VI have been previously identified. Factors II, III, V, VIII, and XII appear in this analysis for the first time with respect to this series of studies. These new factors were named, respectively, Paranoia, Psychopathic Personality, Delinquency, Anti-Social Behavior, and Family Dissension. Scales have already been recommended for factors I and IV. Neuroticism and Shyness, although in the case of the latter, too few items were available to make up an adequate scale for actual use.

The remaining factors in the present analysis which have been described individually all seem to be of sufficient importance to warrant measurement as separate variables. This includes factor VI, Euphoria, which occurred previously as a minor factor. Again, none of these new factors found here has a sufficient number of items on the Pd scale to make up a usable scale. Scale development procedures will need to be undertaken before their true value in clinical practice can actually be put to test. Factor II, Paranoia, is apt to be more clearly defined in an analysis of items on the Paranoia scale, so scale development for this particular factor might well be postponed until such time as more complete information is available about the general area.

If scales from previous analyses are included plus those suggested by the present work, the list of recommended variables to be measured by appropriate scales includes: Health Concern, Neuroticism, Cynicism, Shyness, Psychopathic Personality, Delinquency, Euphoria, Anti-Social Behavior, and Family Dissension. Other scales in the area of paranoia will very likely be recommended on the basis of further work. As was the case with the previously analyzed scales, the Psychopathic Deviate scale of the MMPI seems to be too heterogeneous in factorial content to be used to maximum advantage as a single scale.

Summary

Thirteen centroid factors were extracted from a matrix of phi coefficients based on the 50 items of the MMPI Pd scale plus the variables Age, Sex, and Hospitalization. A sample of 360 normals and hospital patients of random psychiatric diagnosis was used. The 13 centroid factors were rotated analytically using Kaiser's Varimax method. Five of the factors were minor in nature while the remaining eight could be tentatively identified and were named as follows: Neuroticism, Paranoia, Psychopathic Personality, Shyness, Delinquency, Euphoria, Anti-Social Behavior and Family Dissension. Scales had previously been suggested for Neuroticism and Shyness. Additional scales were recommended for the remaining factors with the exception of Paranoia. Scales in this area would probably better be based on the results of analysis with the MMPI Paranoia scale items.

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