THE MMPI "CONVERSION V" AMONG 50,000 MEDICAL PATIENTS: A STUDY OF INCIDENCE, CRITERIA, AND PROFILE ELEVATION

MARK S. SCHWARTZ AND NEAL E. KRUPP*

Mayo Clinic and Mayo Foundation

INTRODUCTION

This study considers one of the most frequently encountered Minnesota Multiphasic Personality Inventory (MMPI) profiles in medical and psychiatric settings, the Hs-Hy/Hy-Hs or 1-3/3-1 profile. It has been designated by many as the "conversion V", "psychosomatic V", or "depressive valley". The profile results from a "selective endorsement of somatic items (Hs and Hy obvious) and denial of social anxiety (Hy subtle) without endorsement of the depressive and anxiety items that are concentrated primarily in the D and Pt scales."[1]

A major tenet of this paper is that there remain deficiencies in the present state of knowledge concerning the usefulness and validity of currently used profile codes, including the 1-3/3-1. First, there is not good and consistent agreement on rules specifying the selection of the profile; thus, the rules change across studies, sometimes markedly, or are unclear or inadequate. Second, the samples and settings frequently differ so greatly that profile-derived generalizations are tenuous at best. Third, sample sizes are often too small. Fourth, there are not enough, if any, valid normative data to enable one to estimate the incidence of a given profile in one's setting. Last and quite important, there is a conspicuous infrequency of cross-validation studies of the nontest variables associated with persons with the 1-3/3-1 code.

Part I of this paper first presents the incidence and rules, or lack thereof, that previously have been reported. Then, three sets of rules are compared regarding incidence in a sample of 50,000 medical patients, and these data are discussed. Several research questions and proposed studies are briefly presented. In Part II, an initial study is outlined concerning elevation of the 1-3/3-1, and available data are presented and discussed.

PART I. INCIDENCE OF 1-3/3-1 CODE

The present purpose is to review and summarize prior studies regarding the incidence of the 1-3/3-1 code and, in addition, to report the incidence of this code, defined with three different sets of rules, among 50,000 medical patients.

METHOD

Incidence of 1-3/3-1 in 50,000. The selection of Ss began with 50,000 medical patients who completed the MMPI at the Mayo Clinic from 1963 through 1965. A detailed description and the statistical characteristics of this sample will be presented by Pearson and Swenson[9]. All profiles with scales 1 and 3 highest among the routine clinical scales, and equal to or higher than T score 70, were initially selected; 4,000 profiles fitted these crude criteria. From these, the profiles fitting the criteria specified by Marks and Seeman[6], Halbower[4], and Pearson and Swenson[8] were selected.[1] Many of the 4,000 profiles involved one or more additional clinical scales that were elevated above T = 70 or were in some other way inappropriate (for example, high number of unanswered items). A modification was imposed on the Pearson and Swenson rules because of the format of the computer program selecting profiles. Thus, the raw scores of Hy are slightly higher because of the decision to include only profiles in which both scales were T = 70 or above. For each group, the profiles were tabulated for males and females, for 1 > 3, 3 < 1, and 1 = 3, and for seven separate age groups.

*Dr. Krupp collaborated on the second part of this paper, dealing with elevation of the 1-3/3-1.
[1]Available without charge from the authors.

RESULTS AND DISCUSSION

Table 1 summarizes prior samples and reported incidence of the 1-3/3-1 code. Hathaway and Meehl's[5] only profile specifications with psychiatric patients were that these two scales be highest among the routine clinical scales and that both be above T = 70; thus, scale elevation and elevation relative to other scales were uncontrolled.

Guthrie[3] reported on private medical patients selected for testing because the physician felt that the patient had complications in part attributable to emotional factors. The only information on the profile characteristics he furnished was that both scales were above T = 54 and highest. Selection bias and the limitation of having only patients of one physician further reduce the generalizability and estimate of the incidence he derived. What about those patients who were not administered the MMPI? Do medical samples for other physicians differ?

Using specified rules, Halbower[4] reported on a small group of male psychiatric Veterans Administration patients. The restrictiveness and small size of the sample are apparent.

Marks and Seeman[6] also specified detailed criteria with psychiatric patients, although again these differed from prior reports. The paucity of males makes it difficult to interpret this profile with men and, again, the problem of applying this code to medical samples is obvious. Using the Marks and Seeman rules, Pauker[7] reported that only two of 109 (1.8%) of his female psychiatric inpatients had this profile.

Pearson and Swenson[9] report data on the 50,000 for one, two, and three-point codes. One set of two-point code criteria reported was that the first scale must be above T = 70 and the second highest, above or below T = 70. Table 2 shows the incidence for these criteria.

Gilberstadt and Duker[2] include the 1-3-2 in their "cookbook" and report 7.4% (19 of 258) of their male Veterans Administration psychiatric patients with the profile. Their rule was that scale 2 be above T = 70, and for practical considerations it was not included in the present research.

Table 3 presents the incidence of 1-3/3-1 for each of the three selected criteria. The data are further divided according to age decades and sex. There were 1,982 (4.0%) fitting the Pearson and Swenson rules, 1,398 (2.8%) the Halbower rules, and 750 (1.5%) the standard Marks and Seeman rules. The data indicate the incidence of this profile, defined in varying ways, in a general medical setting and illustrate the differences in frequency depending upon the criteria used for selection. Statistics on the frequency and percent of patients with the three criteria and with different relative elevations of scales 1 and 3 were also compiled. Marks and Seeman's criteria were further modified. First, instead of the differences being 11 or more T scores between scales 1-2, 3-2, and 3-4, the differences were modified to 10 or more. Secondly, the rule that scale 5 be above T = 45 was omitted. Some of this is detailed in Table 3.

This code has been considered primarily as a "female profile" and indeed females do predominate with the use of the Halbower and Pearson and Swenson rules, but the degree was not as pronounced as one might have predicted from prior literature. In fact, there was a male predominance with the standard Marks and Seeman rules. Even with the rule for scale 5 omitted (obviously eliminating the restriction on the inclusion of females), the balance in favor of the females was not significant. There were, then, too many males with the 1-3/3-1 to consider it as a "female" profile in a medical setting. Perhaps there is a greater likelihood that men with this profile will gravitate to a medical clinic rather than to a psychiatric one.

Several research questions are now presented, investigation of which is made more feasible by the availability of very large medical samples. (1) What are the nontest factors (such as diagnoses, presenting symptoms, physiologic data, likelihood of a functional diagnosis or an organic diagnosis, and difficulty in treatment)

TABLE 1. INCIDENCE OF 1-3/3-1 MMPI PROFILES REPORTED IN PRIOR STUDIES WITH PATIENT SAMPLE

Author		1-3			3-1					
		Males	Females	Total	Males	Females	Total	Males	Females	Total
Hathaway and Meehl[5]	N	41/710	68/1,053	109/1,763	16/710	65/1,053	81/1,763	57/710	133/1,053	190/1,763
	%	5.8	6.5	6.2	2.3	6.2	4.6	8.0	12.5	10.8
Guthrie[3]	N			60/1,104			112/1,104	−/365	−/739	172/1,104
	%			5.4			10.2			14.6
Halbower[4]	N	14/113			7/113			21/113		
	%	12.4			6.2			18.6		
Pearson and Swenson[9]	N	2,135	1,915	4,050	753	1,414	2,167	2,888	3,329	6,217
	%	8.8	7.45	8.1	3.1	5.5	4.3	11.9	12.95	12.4
Marks and Seeman[6]	N							2/203	29/441	31/644
	%							1	6.6	4.8

TABLE 2. FREQUENCIES (f) AND PERCENTAGES OF 1-3/3-1 PROFILE (50,000 MEDICAL PATIENTS): ONE SCALE T = 70+ AND OTHER SCALE SECOND HIGHEST

Age, years	Females							Males						
	N	1-3		3-1		Total		N	1-3		3-1		Total	
		f	%	f	%	f	%		f	%	f	%	f	%
<20	657	23	3.5	19	2.9	42	6.4	535	20	3.7	9	1.7	29	5.5
20-29	1,598	102	6.4	96	6.0	198	12.4	1,247	74	5.9	53	4.3	127	10.2
30-39	3,398	258	7.6	267	7.9	525	15.5	2,858	260	9.1	129	4.5	389	13.6
40-49	5,938	532	9.0	440	7.4	972	16.4	5,312	544	10.2	212	4.0	756	14.2
50-59	7,239	562	7.8	377	5.2	939	13.0	7,127	683	9.6	211	2.9	894	12.5
60-69	5,353	342	6.4	183	3.4	525	9.8	5,399	441	8.2	104	1.9	545	10.1
≥70	1,525	96	6.3	31	2.0	127	8.3	1,814	114	6.3	34	1.9	148	8.2
Total	25,708	1,915	7.4	1,413	5.5	3,328	12.9	24,292	2,136	8.8	752	3.1	2,888	11.9

TABLE 3. SUMMARY OF INCIDENCE (50,000 MEDICAL PATIENTS): DIFFERENT MMPI 1-3/3-1 PROFILE CRITERIA*

Age, years		Marks and Seeman [6]						Halbower [4]		Pearson and Swenson [8]	
		(Ds† = 10+)		(Ds† = 10+/		5 < T = 45)					
		f	%	f	%	f	%	f	%	f	%
20-29	Females	24		27		39		52		85	
	Males	18		20		21		18		40	
	Total	42	1.5	47	1.7	60	2.1	70	2.5	125	4.4
40-49	Females	99		112		156		257		348	
	Males	131		139		148		180		256	
	Total	230	2.0	251	2.2	304	2.7	437	3.9	604	5.4
60-69	Females	49		57		75		108		138	
	Males	57		60		65		71		108	
	Total	106	1.0	117	1.1	140	1.3	179	1.7	246	2.3
All ages	Females	343	1.3	383	1.5	549	2.1	840	3.3	1,156	4.5
	Males	407	1.7	437	1.8	473	1.9	558	2.3	826	3.4
	Total	750	1.5	820	1.6	1,022	2.0	1,398	2.8	1,982	4.0

*Data for ages not included in Table are available from authors.
†Ds = difference between scales 1 and 2, 3 and 2, 3 and 4.

associated with different elevations of the 1-3/3-1 code? (2) What are the nontest factors associated with patients of different ages with the 1-3/3-1? (3) Is the discrepancy between scales 1 and 2 and 3 and 2 related to differential nontest factors? (4) Is the elevation of K significantly related to the nontest factors associated with the 1-3/3-1? (5) Could another scale, a moderator variable, increase the accuracy of the 1-3/3-1 for predicting nontest factors in similar profiles?

PART II.   PRELIMINARY STUDY OF MEDICAL DIAGNOSES ASSOCIATED WITH THREE DIFFERENT ELEVATIONS OF 1-3/3-1 PROFILE

No systematic studies are reported concerning the nontest factors (such as diagnoses and presenting symptoms) associated with different elevations of the 1-3/3-1 profile. The present study is a preliminary one to determine the medical diagnoses associated with three different elevations of the 1-3/3-1 profile.

METHOD

The Ss were 120 medical patients (60 males and 60 females) selected from the records of the Mayo Clinic. Sample selection began with approximately 4,000 profiles mentioned in Part I above. The profile rules were modified Marks and Seeman rules initially devised and applied in an attempt to increase the number of available profiles. These data were in fact collected prior to the data reported in the previous part. Of the 120 profiles, 91 matched all the Marks and Seeman rules. Of the 29 profiles with deviations, all but one involved only one rule and all were considered "very minor" (for example, scale 5, T = 43; scale F, T = 63; scale 2-1 = 10 Ts).[2]

The MMPI criteria for inclusion in the high, medium, and low elevation groups were arbitrarily devised because of convenience and judgment based on inspection of the distribution of scores.[3] From the profiles that met the criteria, 20 males and 20 females were selected from each elevation. The age distributions of the 50,000 were used as a guide for selecting the number of patients from each age group. Thus, within each elevation group and for each sex, the age distribution corresponds closely to that of the distribution within the 50,000.

The medical records available at the Mayo Clinic were abstracted by two research assistants as well as by the investigators, who rechecked approximately 50% of them to clarify any ambiguous or "undersummarized" records. The data abstracted included the medical diagnoses and all symptoms and complaints reported to and recorded by the physicians consulting with each patient. Prime sources for this material were the records of the general examination, the letter sent to the patient's home doctor, and other consultants' notes.

The diagnoses were categorized by the second investigator on the basis of available information. The three groupings were (1) final impression of, or "known", organic diagnosis only; (2) final impression of, or "known", functional or nonorganic diagnosis only; and (3) mixed, including at least one diagnosis from groups 1 and 2.

RESULTS AND DISCUSSION

Table 4 presents the number of organic, functional, and mixed cases for each of the three elevations and for both sexes. For males and females, the number of patients in all groups did not differ for the three elevations, although a tendency was noted for more functional diagnoses for males with higher than with lower elevations and, similarly, more organic diagnoses for males with lower than with higher elevations. Chi square was not significant at the 5% level in any of the

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[2]The actual scores on all patients and the rule deviations are available without charge from the authors.
[3]Available without charge from the authors.

comparisons made even when the organic and mixed groups were combined and compared with the functional only groups in a two by three analysis.

Thus, in these data and with these profile rules, elevation of the 1-3/3-1 does not appear significantly related to the likelihood of receiving a functional diagnosis.

TABLE 4. NUMBER OF ORGANIC (O), FUNCTIONAL (F), AND MIXED (M) MEDICAL DIAGNOSES ASSOCIATED WITH HIGH, MEDIUM, AND LOW ELEVATIONS OF MMPI 1-3/3-1 CODE

Elevation of code	Males			Females		
	O	F	M	O	F	M
High	5	11	4	3	6	11
Medium	5	7	7	5	9	6
Low	8	4	8	3	8	9
Total	18	22	19	11	23	26

SUMMARY

Prior research on the criteria and incidence of the Minnesota Multiphasic Personality Inventory (MMPI) 1-3/3-1 code is presented and attention is given to some problems and inconsistencies in the literature, including variations in profile rules, sample types, sample sizes, and selection bias. Three sets of existing rules are compared among 50,000 medical patients with regard to incidence, age, sex, and profile modifications. Several research questions are raised and a study of the organic and functional diagnoses associated with three profile elevations is presented, with no significant differences noted among the elevations.

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