

Cultural Differences in MMPI-2 scores Between North Americans and Puerto Ricans

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Abstract

The present paper is directed at presenting a series of studies that demonstrate that Puerto Ricans of diverse groups including clinical and normal samples scored different in some MMPI-2 scales of the Minnesota Multiphasic Personality Inventory from their corresponding American counterparts. In one study the MMPI-2 was administered to a sample of 40 depressed inpatients (17 males and 23 females), 35 depressed outpatients (13 males and 22 females) and 35 psychotic inpatients (12 males and 23 females) and 141 normals (85 males and 56 females). In another study, we report the findings of a comparison between Puerto Rican and American college students. It will be argued that Puerto Rican culture allows for a greater range of what could be considered deviant thinking in the United States. (Key words: MMPI-2, personality, and psychopathology)

The Minnesota Multiphasic Personality Inventory has been one of the most frequently used psychodiagnostic instruments with Hispanic Americans in the United States (Cortales, Cabiya, Gomez, Ayala, Mendoza & Velázquez, 1998) and in Puerto Rico (Butcher, Cabiya, Lucio, Peña, Reubens and Scott, 1998). Given the extensive use of the instrument, the necessity for revision and restandardization was recognized. The final version of the MMPI-2 was accomplished in 1989 and for the first time a separate version of the MMPI for adolescents (MMPI-A) was developed. In 1994, the Spanish translation of the MMPI-2 was completed by Rosa E. Garcia-Peltoniemi and Alex A. Azan Chaviani (Butcher, Graham, Williams and Kaemmer, 1994).

Butcher and Pancheri (1976) and Geisinger (1994) have suggested that validation research be performed with any translation of a previously developed test in order to insure cultural sensitivity. Previous studies with the original MMPI suggested a significant inclination towards a more pathological clinical profile when Spanish translations of the MMPI were administered to Hispanics than those obtained when the English version was administered to bilingual Hispanics (Fuller & Maloney, 1984; Whitworth, 1988). On the other hand, recent studies (Cabiya, 1996; Lucio, Reyes-Lagunes & Scott, 1994; Whitworth & McBlaine, 1993; Whitworth and Unterbrink, 1994)) do suggest that both the English and Spanish versions of the MMPI-2 appear much closer to the U.S. normative sample than was the case for the original MMPI.

The present study was directed at assessing the adequacy of the Spanish translation of the MMPI-2 with a Puerto Rican sample following Butcher and Pancheri's (1976) and Geisinger's (1994) suggestions. We wanted to explore also whether the tendency toward less overpathologizing of

normals found with the MMPI-2 relative to the original MMPI could be obtained with the MMPI-2's Spanish translation. In addition, given the importance of the MMPI-2 as a diagnostic instrument and given its extensive use in the field of psychology, it was extremely important to obtain data concerning its capability to differentiate a clinical group from a normal one.

First Study Method

Participants: The total sample of participants consisted of 40 depressed inpatients (17 males and 23 females), 35 depressed outpatients (13 males and 22 females) and 35 psychotic inpatients (12 males and 23 females) and 141 college students (85 males and 56 females).

Procedures: All the participants were administered the Spanish translation of the MMPI-2 and the Barsit individually in private offices.

Instruments: The instruments administered were the following:

Barranquilla Rapid Intelligence Test (Barsit): The BARSIT is a 60-item test that includes questions about mathematical problems, synonyms, antonyms, general knowledge and so forth. The test is administered in ten minutes. The test was developed by Olmo (1958) and standardized in Venezuela. Martinez, Velez and Garcia (1971) standardized it with adult male veterans and Mendez (1981) with fifth and six grade students in Puerto Rico. In the present study, the norms, developed by Martinez, Velez and Garcia (1971) were used to estimate the Intelligence Quotient (IQ).

MMPI-2: The MMPI-2 consists of 567 items answered True

or False and has wide range of content including physical and psychological symptoms. The same original validity and clinical scales from the MMPI are scored in the MMPI-2.

Results

One way analyses were performed with the mean T-scores in all the basic and content scales of the male participants first and then with the females' mean T-scores. Significant differences were obtained in all scales except scales L, K, Ma and ANG in males and scales L, Mf, ASP and TPA in females at a .003 level of significance. Moreover, depressed outpatients scored higher than all the other groups in all scales except in scales K, Mf and Ma in both males and females. Psychotic inpatients scored higher than normals except in scales K, Mf and ASP in both males and females. In addition, the mean T-scores in scales Sc, Ma and Biz were found to be over one standard deviation in males using the U.S. norms. Table 1 and 2 presents a summary of the statistical analyses.

Table 1

Descriptive statistics in the MMPI-2 basic and content scales for males.

Scale	Normals N= 85	Depressed inpatients N= 17	Depressed Outpatients N= 13	Psychotic inpatients N=12	F	Significance
L	55.88 (SD=10.24)	64.17 (SD= 11.57)	52.54 (SD= 9.20)	63.67 (SD= 13.87)	5.11	.002*
F	59.94 (SD= 19.78)	75.06 (SD= 22.21)	99.54 (SD= 19.01)	82.83 (SD= 18.50)	18.40	.000*
K	46.90 (SD= 9.20)	43.71 (SD= 11.36)	36.84 (SD= 7.79)	42.75 (SD= 9.62)	4.73	.004
HS	53.28 (SD= 11.82)	58.52 (SD= 11.35)	84.08 (SD= 10.27)	61.25 (SD= 15.48)	25.17	.000*
D	52.91 (SD= 9.89)	64.53 (SD= 12.54)	85.39 (SD= 10.71)	63.58 (SD= 9.15)	40.84	.000*

Scale	Normals N= 85	Depressed inpatients N= 17	Depressed Outpatients N= 13	Psychotic inpatients N=12	F	Significance
HY	50.57 (SD= 10.63)	58.11 (SD= 11.03)	77.69 (SD= 13.21)	51.33 (SD= 15.64)	21.84	.000*
PD	49.94 (SD= 8.94)	58.71 (SD= 14.59)	68.84 (SD= 7.76)	57.00 (SD= 12.78)	15.38	.000*
MF	45.47 (SD= 7.78)	53.88 (SD= 6.87)	51.77 (SD= 7.62)	46.50 (SD= 3.73)	7.89	.000*
PA	54.48 (SD= 12.72)	68.53 (SD= 15.93)	81.31 (SD= 15.72)	69.08 (SD= 19.92)	17.54	.000*
PT	55.49 (SD= 11.50)	64.06 (SD= 13.32)	84.62 (SD= 14.53)	65.50 (SD= 20.28)	19.92	.000*
SC	62.54 (SD= 12.82)	73.29 (SD= 18.47)	97.23 (SD= 12.74)	78.91 (SD= 19.98)	24.67	.000*
MA	60.57 (SD= 12.48)	63.41 (SD= 12.43)	63.85 (SD= 8.37)	71.33 (SD= 14.70)	2.81	.043
SI	49.96 (SD= 9.42)	55.24 (SD= 12.93)	67.69 (SD= 11.57)	58.75 (SD= 7.86)	13.40	.000*
ANX	55.97 (SD= 8.86)	62.88 (SD= 9.75)	73.30 (SD= 7.20)	62.68 (SD= 14.02)	24.20	.000*
FRS	57.16 (SD= 12.88)	70.82 (SD= 13.16)	78.69 (SD= 14.91)	72.33 (SD= 18.18)	14.54	.000*
OBS	55.57 (SD= 10.10)	59.88 (SD= 12.26)	70.61 (SD= 10.85)	65.33 (SD= 15.96)	8.57	.000*
DEP	54.52 (SD= 9.80)	65.53 (SD= 14.24)	80.92 (SD= 13.99)	65.33 (SD= 14.14)	23.47	.000*
HEA	56.22 (SD= 10.75)	65.88 (SD= 11.54)	86.30 (SD= 10.97)	67.75 (SD= 11.03)	31.25	.000*
BIZ	63.61 (SD= 13.38)	68.70 (SD= 14.26)	82.92 (SD= 11.90)	77.83 (SD= 19.29)	9.66	.000*
ANG	54.20 (SD= 9.65)	54.64 (SD= 14.24)	65.00 (SD= 8.98)	54.50 (SD= 9.83)	4.19	.007
CYN	54.75 (SD= 8.31)	58.29 (SD= 8.79)	68.38 (SD= 9.54)	67.41 (SD= 12.00)	14.17	.000*
ASP	52.62 (SD= 9.25)	53.47 (SD= 8.17)	58.92 (SD= 8.69)	62.75 (SD= 10.38)	5.49	.001*

Table 1

(continued)

Scale	Normals N= 85	Depressed inpatients N= 17	Depressed Outpatients N= 13	Psychotic inpatients N=12	F	Significance
TPA	52.06 (SD= 8.99)	49.59 (SD= 7.58)	59.62 (SD= 7.24)	57.83 (SD= 15.95)	4.13	.008
LSE	52.36 (SD= 10.08)	58.35 (SD= 11.96)	70.69 (SD= 14.75)	63.33 (SD= 16.33)	11.69	.000*
SOD	49.26 (SD= 8.51)	55.00 (SD= 11.82)	63.69 (SD= 12.53)	57.00 (SD= 10.19)	10.34	.000*
FAM	55.07 (SD= 11.20)	65.18 (SD= 13.87)	70.30 (SD= 9.66)	65.83 (SD= 10.05)	10.82	.000*
WRK	53.99 (SD= 10.68)	60.35 (SD= 15.02)	77.00 (SD= 10.70)	64.83 (SD= 16.31)	15.71	.000*
TRT	56.11 (SD= 10.99)	64.47 (SD= 15.14)	78.46 (SD= 14.62)	68.42 (SD= 13.80)	15.21	.000*

*P < .003

Table 2

Descriptive statistics in the MMPI-2's basic and content scales for females

Scale	Normals N= 56	Depressed inpatients N= 23	Depressed Outpatient N= 22	Psychotic inpatients N= 21	F	Significance
L	55.73 (SD= 11.41)	63.35 (SD= 11.36)	57.23 (SD= 10.00)	67.47 (SD= 15.90)	5.92	.001*
F	58.03 (SD= 15.67)	76.48 (SD= 19.32)	95.23 (SD= 16.22)	75.43 (SD= 16.07)	28.42	.000*
K	48.39 (SD= 10.27)	43.83 (SD= 11.51)	35.77 (SD= 5.41)	47.24 (SD= 8.67)	9.63	.000*
Hs	55.93 (SD= 10.52)	64.96 (SD= 13.39)	77.72 (SD= 10.55)	63.19 (SD= 10.10)	20.89	.000*
D	54.14 (SD= 9.24)	67.30 (SD= 15.08)	81.77 (SD= 12.51)	59.43 (SD= 10.67)	33.03	.000*
Hy	52.73 (SD= 9.83)	65.04 (SD= 17.03)	73.00 (SD= 12.07)	57.71 (SD= 11.12)	16.77	.000*
Pd	51.62 (SD= 8.96)	69.60 (SD= 13.92)	65.63 (SD= 11.85)	58.80 (SD= 14.02)	16.67	.000*

Scale	Normals N= 56	Depressed inpatients N= 23	Depressed Outpatient N= 22	Psychotic inpatients N= 21	F	Significance
MF	58.53 (SD= 10.39)	58.39 (SD= 9.98)	61.50 (SD= 9.76)	59.85 (SD= 8.75)	.55	.646
Pa	51.75 (SD= 9.87)	69.83 (SD= 15.01)	80.27 (SD= 15.53)	64.33 (SD= 13.82)	30.15	.000*
Pt	52.39 (SD= 9.98)	66.87 (SD= 12.09)	78.32 (SD= 11.28)	60.24 (SD= 8.75)	30.55	.000*
Sc	55.08 (SD= 10.73)	74.26 (SD= 13.28)	86.31 (SD= 11.26)	70.76 (SD= 10.23)	46.39	.000*
Ma	55.62 (SD= 10.05)	65.60 (SD= 11.06)	61.36 (SD= 8.49)	65.47 (SD= 11.29)	7.86	.000*
SI	48.60 (SD= 9.92)	55.69 (SD= 9.76)	67.50 (SD= 9.77)	52.80 (SD= 7.60)	21.11	.000*
ANX	55.05 (SD= 10.03)	66.13 (SD= 11.58)	74.86 (SD= 7.89)	60.19 (SD= 9.69)	22.88	.000*
FRS	55.25 (SD= 10.10)	61.08 (SD= 15.67)	76.27 (SD= 12.75)	60.62 (SD= 14.21)	14.88	.000*
OBS	51.80 (SD= 10.18)	59.87 (SD= 9.43)	71.86 (SD= 8.77)	57.14 (SD= 11.24)	21.57	.000*
DEP	52.44 (SD= 9.73)	67.48 (SD= 11.62)	79.36 (SD= 9.48)	59.81 (SD= 8.08)	43.20	.000*
HEA	56.52 (SD= 8.91)	69.61 (SD= 13.95)	82.09 (SD= 11.29)	68.00 (SD= 12.04)	30.66	.000*
BIZ	56.85 (SD= 10.85)	64.83 (SD= 12.08)	80.68 (SD= 14.13)	68.48 (SD= 10.84)	22.70	.000*
ANG	54.43 (SD= 12.01)	59.43 (SD= 13.58)	65.95 (SD= 8.87)	52.61 (SD= 9.04)	6.88	.000*
CYN	54.55 (SD= 10.41)	61.83 (SD= 11.55)	67.50 (SD= 9.04)	59.62 (SD= 9.28)	9.20	.000*
ASP	53.80 (SD= 9.90)	57.61 (SD= 8.62)	58.18 (SD= 7.58)	59.19 (SD= 8.51)	2.60	.055
TPA	53.00 (SD= 10.88)	53.78 (SD= 10.74)	61.36 (SD= 10.77)	55.52 (SD= 11.21)	3.24	.025
LSE	47.73 (SD= 9.42)	55.57 (SD= 11.04)	67.95 (SD= 8.95)	53.19 (SD= 7.04)	25.16	.000*
SOD	50.11 (SD= 10.95)	54.26 (SD= 11.34)	64.64 (SD= 10.10)	51.52 (SD= 6.47)	11.30	.000*

Table 2
(Continued)

Scale	Normals N= 56	Depressed Inpatients N= 23	Depressed Outpatients N= 22	Psychotics Inpatients N=21	F	Significance
FAM	50.18 (SD= 11.81)	61.56 (SD= 14.76)	68.59 (SD= 10.96)	56.57 (SD= 8.83)	14.35	.000*
WRK	50.54 (SD= 9.53)	58.78 (SD= 10.95)	77.05 (SD= 10.29)	55.57 (SD= 9.16)	38.30	.000*
TRT	52.04 (SD= 11.68)	61.00 (SD= 13.28)	78.23 (SD= 10.74)	56.90 (SD= 9.31)	27.89	.000*

*P < .003

Second Study

Method

Participants: The total sample of normal students consisted of 343 students (197 males and 146 females) between the ages of 18 and 21 enrolled in the colleges of science and liberal arts in the University of Puerto Rico at Mayaguez.

Procedures: All the participants were administered the Spanish translation of the MMPI-2.

Results

The mean raw scores in the MMPI-2 of the total students' sample were compared with the mean raw scores of the U.S. normative sample reported by Butcher, Graham, Dahlstrom and Bowman's (1990). Table 3 shows that significant differences were found on scales L, F, K, Hs, D, Mf, Pt, Sc, Ma and Si in males. On the other hand, significant differences were only found in scales L, F and Mf in females as can be seen in Table 4. Figures 1 and 2 present the MMPI-2 profiles for Puerto Rican and North American college students.

Table 3

Results of t-tests comparing Puerto Rican and U.S. normative samples of males and their mean raw scores and standard deviations in the MMPI-2

Scales	P.R. Males		U.S. Males		<i>t</i>
	M	SD	M	SD	
L	4.80	2.43	3.3	2.2	8.70*
F	9.79	7.33	5.3	3.9	8.62*
K	13.18	3.95	14.4	4.7	4.34*
Hs	7.36	4.36	5.1	4.0	7.29*
D	19.98	4.76	17.0	4.7	8.79*
Hy	20.21	5.05	20.4	4.6	.52
Pd	17.47	4.85	17.8	4.8	.96
Mf	24.30	4.40	25.4	5.0	3.51*
Pa	11.36	4.18	10.9	3.3	1.54
Pt	16.36	7.00	14.1	7.7	4.55*
Sc	21.73	9.57	15.0	9.1	9.89*
Ma	21.81	4.46	20.4	4.5	4.45*
Si	27.74	7.61	23.7	8.6	7.47*

* $p < .05$

Table 4

Results of t-tests comparing Puerto Rican and U.S. normative samples of females and their mean raw scores and standard deviations in the MMPI-2

Scales	P.R. Females		U.S. Females		<i>t</i>
	M	SD	M	SD	
L	5.03	2.57	2.8	1.9	10.47*
F	7.52	5.90	4.9	3.6	5.36*
K	13.91	4.50	13.8	4.6	.30
Hs	7.91	4.91	6.9	4.5	2.49*
D	20.60	4.51	19.6	5.0	2.68*
Hy	21.36	5.54	22.2	4.8	1.83

Table 4
(Continued)

Scales	P.R. Females		U.S. Females		<i>t</i>
	M	SD	M	SD	
Pd	16.58	4.61	17.8	5.0	3.21*
Mf	30.23	4.34	34.9	4.2	12.98*
Pa	10.88	3.58	11.1	3.3	.75
Pt	15.09	7.68	16.5	7.7	2.22*
Sc	17.84	9.51	15.5	8.7	2.97*
Ma	19.90	4.26	18.8	4.5	3.14*
Si	26.38	8.03	26.7	8.7	.48

* $p < .05$

Figure 1. Mean T-Scores of male P.R., USA and Mexican college students

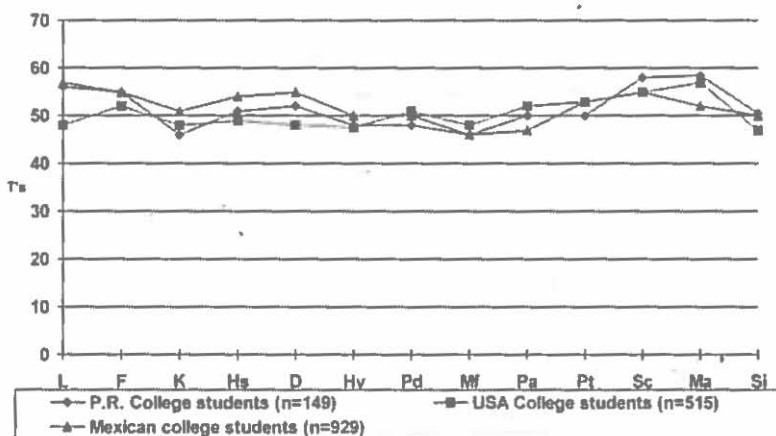
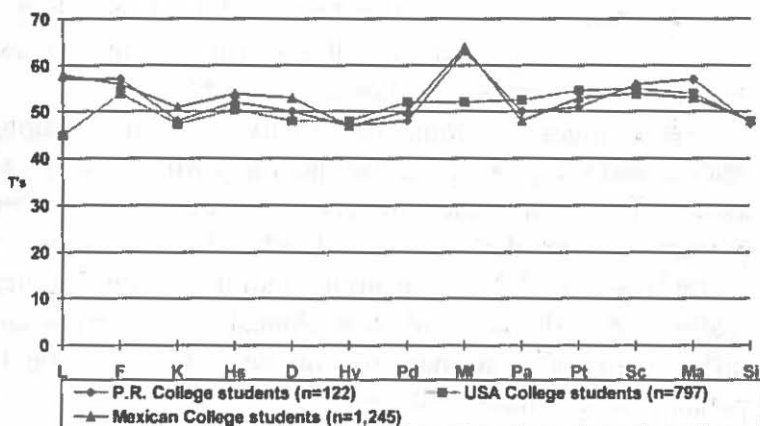


Figure 2. Mean T-Scores of female P.R., USA and Mexican college students



Discussion

Although statistically significant differences were found between males and females in the Spanish Version of the MMPI-2, they were very few. On the other hand, although the average T scores of the females were found to be very close to the U.S. norms, significant differences were found in males specially in scales F and Sc of the MMPI-2. This pattern of results is similar to those reported by Cabiya (1996); Lucio, Reyes-Lagunes and Scott (1994), Whitworth and McBlaine (1993), Whitworth and Unterbink (1994) with Hispanics tested with the MMPI-2. A possible explanation to account for the elevations in scales Sc and Ma in males in all samples including college students and patients could be due to cultural differences between Puerto Rican and North American males. It is possible that Puerto Rican males are offered a greater range of expression of problematic, or what the North Americans might consider deviant behavior. This might also be consistent with the emphasis of 'espiritismo'

beliefs in the Puerto Rican culture, but this explanation is not consistent with the fact that females did not score higher in these scales suggesting possible restrictions in their expression of deviant behavior or strange beliefs.

The results of the comparisons between normal samples and clinical samples do suggest that the MMPI-2 differentiated well between these two groups. All the patients of the present study had depressed mood and high mean T-scores in scales D but the adult outpatients had elevation in most clinical scales. Thus, the fact that most clinical and content scales differentiated adult normals from outpatients suggest that the patients sample might have been experiencing a combination of multiple symptoms which is consistent with their variety of diagnoses.

We would like to point out the limitations of the present comparisons between the various samples of adolescents. The patients' sample was comprised of only mid to low socioeconomic class patients from the greater San Juan-Caguas metropolitan area. Future studies will need to determine if these results hold with higher income patients. Finally, the normal sample was mainly comprised of college students who might not be representative of the general population.

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