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The MCMI–II and Race

Patrick H. Munley
Department of Veterans Affairs Medical Center
Battle Creek, Michigan
and
Department of Counselor Education and Counseling Psychology
Western Michigan University

Tammi Vacha-Haase
Department of Counselor Education and Counseling Psychology
Western Michigan University

Rebecca M. Busby
Department of Veterans Affairs Medical Center
Battle Creek, Michigan

Brian D. Paul
Department of Counselor Education and Counseling Psychology
Western Michigan University

In this study, we investigated MCMI–II profile differences in a sample of 65 Black and 164 White psychiatric inpatients. A multivariate analysis of variance (MANOVA) yielded a significant multivariate effect associated with race, with Black patients scoring significantly higher on the Histrionic, Narcissistic, Paranoid, Drug Dependent and Delusional Disorder scales. A second MANOVA was conducted on these 5 scales with a smaller sample of 46 Black and 46 White patients, who were matched for primary Axis I discharge diagnosis and matched for substance abuse comorbidity. This MANOVA did not yield a significant multivariate effect associated with race, and scale differences were attenuated.

Awareness of cultural and ethnic differences in the assessment and treatment of clients is a topic of increasing and continued importance in the practice of professional psychology. In the area of personality assessment, a substantial amount of research has been done on the original Minnesota Multiphasic Personality Inven-

tory (MMPI); however, the Millon Clinical Multiaxial Inventory (MCMI and MCMI–II) have received less attention. Davis, Greenblatt and Pochyly (1990) studied the effects of race, education and diagnosis on select MCMI scales with psychiatric patients, and found that the only significant effect was for race, with Black patients scoring significantly higher than Whites on the Asocial, Avoidant, Psychotic Thinking, and Psychotic Delusion scale. Davis and Greenblatt (1990) also found a significant multivariate effect associated with race on the MCMI and reported racial differences consistent with those reported by Davis et al. (1990). Choca, Shanley, Peterson, and Van Denburg (1990) studied scores obtained on the MCMI by Black and White psychiatric inpatients and found that mean scores obtained by Black and White patients were significantly different on 9 of the 20 scales, with Black patients scoring significantly higher on Histrionic, Narcissistic, Antisocial, Paraphrenia, Hypomania, Alcohol Abuse, Drug Abuse, and Psychotic Delusion, and scoring significantly lower on Dysthymia. Hamberger and Hastings (1992) investigated racial differences on the MCMI in an outpatient sample of Black and White male court-referred spouse abusers. Findings showed that Blacks scored significantly higher than Whites on the Narcissistic, Paranoid, Hypomanic, Drug Abuse, and Psychotic Delusion scales. Donat, Walters, and Hume (1992) found that White substance abusers scored significantly higher on the MCMI Borderline, Somatoform, and Dysthymia scales and scored significantly lower on the Narcissistic, Antisocial, Paranoid, Schizophrenia, and Drug Abuse scales.

Although racial differences have been found on the MCMI as noted, Craig and Weinberg (1993) and Choca, Shanley, and Van Denburg (1992) indicated that the differences found may have related to actual differences in the two populations studied. Choca et al. (1992) indicated that ideally, groups should have been matched on every one of the disorders covered by the test. Craig and Weinberg (1993) concluded that the issue of racial basis and the MCMI had not been demonstrated and was still an open question.

The purpose of this study was to explore MCMI–II profile and scale differences for Black and White psychiatric inpatients who completed the MCMI–II as a regular part of their psychological testing in an inpatient psychiatric treatment setting.

METHOD

Participants

Participants were 229 male psychiatric inpatients who completed the MCMI–II (Millon, 1987) as a routine part of their psychological testing following admission to an inpatient psychiatric treatment unit. The MCMI–II was completed as a part of a battery of initial tests given to psychiatric admissions, which also included the Shipley Institute of Living Scale (Zachary, 1991). Cases were selected retrospectively from our testing files if they obtained a valid MCMI–II profile according to

two criteria: (a) a valid profile as indicated by the validity index; patients with a questionable or invalid score on the validity index were excluded; and (b) a Disclosure BR raw score greater than 144 and less than 591.

There were 65 Black and 164 White participants in the initial sample with an average age of 40.97 (SD = 8.95), an average of 12.17 (SD = 2.06) years of education, and an average estimated Wechsler Adult Intelligence Scale (WAIS) IQ based on performance on the Shipley Institute of Living Scale of 102.93 (SD = 9.78). Black and White participants did not differ significantly (p = .01) in regard to age, years of education or employment status prior to admission. The two groups did differ significantly in regard to Shipley Total T scores with Black participants in the initial sample, obtaining a mean Shipley Total T score of 43.91 (SD = 9.6) and White participants a mean Total T score of 47.65 (SD = 8.4; p = .004). Phay (1990) reviewed the literature on the Shipley and the effects of moderator variables and observed that there was a paucity of data across participant groups for racial differences with the Shipley and suggested clinicians use caution in the interpretation of the Shipley with Blacks until more data is available. Because Black and White participants did differ in terms of Shipley Total T scores in the initial sample in this study, Pearson r correlations were calculated between Shipley Total T scores and each of the 25 MCMI–II scales. With alpha levels adjusted by the number of pairs of correlations (.05/25 = .002) correlational analyses indicated that none of the correlations between Shipley Total T scores and MCMI–II scale scores were significant at the p = .002 level. Therefore, no statistical adjustment was made in the analysis comparing the two groups. The two groups did not differ significantly statistically in terms of primary Axis I discharge diagnosis with discharge diagnoses categorized in terms of four main diagnostic groupings: schizophrenic disorders (White 16%, Black 20%); major affective disorders (White 34%, Black 23%); other nonpsychotic neurotic, anxiety, or personality disorders, posttraumatic stress disorder, or adjustment disorders (White 38%, Black 37%), and substance abuse (White 12%, Black 20%). The two groups did not differ significantly in terms of the frequency of a comorbid or secondary diagnosis of alcohol abuse or dependence (White 37%, Black 43%). However, the two groups did differ significantly in terms of the frequency of a secondary or comorbid diagnosis of drug abuse or dependence (White 20%, Black 43%, $p < .0003$).

Procedure

Two sets of analyses comparing Black and White patients on the MCMI–II were performed. First, a multivariate analysis of variance (MANOVA) was done to compare the 25 MCMI–II scales of the entire sample of Black and White patients. Univariate analyses of variance (ANOVA) were also conducted for each of the 25 individual response set, personality, and clinical syndrome scales of the MCMI–II. The criterion value for alpha for the ANOVAs was set at .05/25 = .002.

Because the original two groups of Black and White patients differed to some extent on frequency of diagnoses within the major Axis I categories just noted, and because they differed significantly with regard to the presence of a secondary diagnosis of drug abuse or dependence, a second set of analyses was performed on a smaller matched sample of Black and White patients matched on primary Axis I discharge diagnosis, matched for presence or absence of a secondary diagnosis of alcohol, drug or alcohol and drug abuse or dependence, and matched as closely as possible in terms of age and years of education. Forty-six Black patient MCMI–II profiles were matched with 46 White MCMI–II profiles in this manner ($N = 92$). Patients in this smaller sample came primarily from the initial sample ($n = 78$) but also included cases ($n = 14$) not included in the initial sample. This smaller matched sample of Black and White patients had an overall average age of 41.00 ($SD = 6.27$), an average of 12.28 ($SD = 1.73$) years of education, and an average estimated WAIS IQ of 101.13 ($SD = 10.04$). The two groups in the matched sample did not differ significantly in terms of age, years of education or Shipley Total T scores. A MANOVA and univariate ANOVAs were then performed for the matched sample on the MCMI–II scales that were initially found to be significantly different in the first analysis of the entire sample.

RESULTS

The MANOVA conducted on the 25 MCMI–II scales for the entire sample of Black and White patients demonstrated a significant effect associated with race (Wilks's $\lambda = .783$, $F = 2.25$, $p = .001$). Table 1 presents the means, standard deviations and univariate ANOVAs comparing Black ($n = 65$) and White ($n = 164$) patients. As can be seen in Table 1, Black and White patients in the overall sample differed significantly at the .002 level on five scales (Histrionic, Narcissistic, Paranoid, Drug Dependence, and Delusional Disorder) with Black patients scoring higher.

The second MANOVA compared the matched sample of 46 Black and 46 White patients on the five scales that were significantly different in the initial overall analyses. This MANOVA was not significant (Wilks's $\lambda = .911$, $F = 1.67$, $p = .148$). Table 2 presents the means, standard deviations, and univariate ANOVAs comparing the Black ($n = 46$) and White ($n = 46$) patients in the matched sample. None of the univariate comparisons were significant at the .01 level (.05/5). However, the differences on Histrionic and Narcissistic scales approached significance, and the magnitudes of the differences on these scales between Black and White patients in the matched sample were similar to the differences found in the overall sample.

DISCUSSION

Initial findings in this study on the larger sample of Black and White patients appear similar to those of Choca et al (1990) and Hamberger and Hastings (1992) with the

TABLE 1
Means, Standard Deviations, and ANOVAs for MCMI–II Scales

	Patients					
	Black[a]		*White*[b]			
MCMI–II	*M*	*SD*	*M*	*SD*	*F*	*p*
Disclosure	77.88	14.13	74.76	21.44	1.17	.2807
Desirability	58.68	17.71	51.34	19.08	7.18	.0079
Debasement	77.03	18.01	76.51	20.40	0.03	.8580
Schizoid	77.25	17.52	79.09	24.49	0.30	.5817
Avoidant	86.52	19.15	86.07	29.05	0.01	.9083
Dependent	56.14	30.09	64.22	27.59	3.79	.0527
Histrionic	62.42	17.35	51.55	23.99	11.0	.00105
Narcissistic	72.40	23.05	57.46	24.80	17.6	.00004
Antisocial	83.86	19.94	76.62	24.17	4.60	.03309
Aggressive–Sadistic	79.25	21.89	68.74	26.47	8.05	.0049
Compulsive	58.06	19.59	57.58	18.89	0.03	.8633
Passive–Aggressive	80.43	26.43	80.32	32.83	0.001	.9812
Self-Defeating	77.65	21.85	80.20	23.38	0.57	.4496
Schizotypal	77.11	19.06	77.23	23.41	0.001	.9697
Borderline	82.08	22.40	77.94	25.96	1.27	.2600
Paranoid	68.49	16.98	60.74	15.46	11.1	.00102
Anxiety	74.38	20.49	74.55	22.76	0.003	.9582
Somatoform	57.35	15.22	57.85	13.70	0.056	.8120
Bipolar: Manic	56.92	16.22	50.35	18.16	6.46	.01169
Dysthymia	79.69	20.28	78.48	22.31	0.144	.7045
Alcohol Dependence	78.75	18.11	73.23	23.37	2.94	.0879
Drug Dependence	78.74	20.52	68.60	22.45	9.95	.00183
Thought Disorder	74.26	17.37	72.11	20.04	0.577	.4482
Major Depression	75.92	19.47	76.55	20.36	0.046	.8305
Delusional Disorder	64.12	16.00	55.18	17.56	12.7	.00045

[a]$n = 65$. [b]$n = 164$.

TABLE 2
Means, Standard Deviations, and Analyses of Variance for Millon Clinical Multiaxial Inventory–II (MCMI–II) Scales

	Patients					
	Black[a]		*White*[a]			
MCMI–II	*M*	*SD*	*M*	*SD*	*F*	*p*
Histrionic	60.35	17.62	50.11	24.55	5.28	.024
Narcissistic	71.43	23.47	60.96	20.53	5.19	.025
Paranoid	67.15	14.94	64.11	16.07	0.885	.349
Drug Dependence	77.76	22.03	72.07	23.42	1.44	.233
Delusional Disorder	63.13	15.88	57.87	18.59	2.13	.148

[a]$n = 46$.

MCMI. A major limitation of the findings for our larger sample of Black and White patients, however, is that these patients are not precisely comparable in terms of primary and secondary Axis I diagnoses. When a smaller sample of Black and White patients are matched in terms of primary Axis I discharge diagnosis and matched for substance abuse comorbidity, the multivariate effect associated with race is no longer significant, and the univariate effects are also no longer significant with Bonferroni adjusted probability levels at the .01 level. A limitation of our matched sample analyses, however, is a smaller sample size and reduced statistical power. Nonetheless, findings do indicate that by matching Black and White participants more precisely on their primary Axis I discharge diagnosis and their secondary substance abuse comorbidity, differences initially found in the analysis for the entire sample are attenuated, particularly for the clinical syndrome scales Paranoid, Drug Dependence, and Delusional Disorder. The matching for substance abuse comorbidity appears to be associated with more comparable scores between the two groups on the Drug Dependence scale and may also be associated with more comparable scores on the Narcissistic, Paranoid and Delusional Disorder scales, which are known to show moderate correlations with the Drug Dependence scale. In view of our initial findings with the larger sample on the Histrionic and Narcissistic scales, prior research on the MCMI indicating Black and White differences on these scales, and differences in our matched sample that were of similar magnitude to the larger sample and approached significance, it seems likely that Black patients do tend to score higher on these two scales. However, a major limitation of our and earlier research in this area has been the fact that the research has not controlled for or matched precisely for Axis II diagnoses. Thus, it is not clear whether differences on the personality scales between the two groups are related to actual differences in personality disorder psychopathology present in the two groups or are a consequence of differences in response or communication styles that have a cultural basis. Additional studies with larger samples matched for both Axis I and Axis II diagnoses may be helpful in clarifying racial differences on these two scales.

One reviewer of an earlier version of this article commented that although Blacks scored higher than Whites on certain scales, the diagnosis would not have changed based on race. Although it is true that even when means for the Black patients are significantly higher than Whites, the means average less than the BR cutoff score of 84. Given the standard deviations and the higher means for Black patients, however, proportionately more Black patients would score above BR 74, the anchor point for the presence of the particular characteristic being measured. If there is a 10-point mean difference between the two ethnic groups associated with race and cultural factors on such scales as Histrionic and Narcissistic, it seems important for clinicians to be aware of this difference in interpreting MCMI–II test findings.

Current findings highlight the need for further research on racial differences on the MCMI–II as well as the MCMI–III (Millon, 1994). Given the significant changes in the test with the publication of the MCMI–III, additional research on

race and the MCMI–III will be required to help identify possible effects associated with race. The results of this study indicate the importance of matching for primary and secondary Axis I diagnoses in studies of race and the MCMI–II, and highlight the potential importance of matching for substance abuse. When patients were matched in terms of their primary Axis I discharge diagnosis and matched for substance abuse comorbidity, differences on the clinical syndrome scales were attenuated.

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Patrick H. Munley
Psychology Service (116B)
VA Medical Center
5600 Armstrong Road
Battle Creek, MI 49016

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