

Sue, S., Keefe, R., Enomoto, K., Durvasula, R., & Chao, R. (1996). Asian American and White college students' performance on the MMPI-2. In J.N. Butcher (Ed.), *International adaptations of the MMPI-2: Research and clinical applications* (pp. 206-220). Minneapolis, MN: University of Minnesota Press.

Chapter 10

Asian American and White College Students' Performance on the MMPI-2

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The United States is a multicultural society with many distinct cultural, ethnic, and racial groups (e.g., African Americans, American Indians, Asian Americans, Latinos, and European or White Americans). Great concern has been expressed over the use of assessment instruments to evaluate personality or psychopathology among culturally diverse groups for which the instruments have not been standardized or normed. Issues involving the validity of findings in general and the stimulus, conceptual, and metric equivalence of instruments are raised when the instruments have been widely used for one population but not for another (Brislin, 1993). Implicit in this concern is that populations often vary in cultural values, behaviors, expectations, and attitudes; hence, findings and conclusions drawn from one population may not be comparable with those from another population.

The Assessment of Asian Americans

Asians represent about 3% of the population of the United States and include many subgroups, such as Chinese, Japanese, Koreans, Filipinos, Vietnamese, etc. They have cultural values that differ from those of White Americans, as revealed through qualitative and quantitative research. For example, Asians in the United States are more likely than Whites to hold values and engage in behaviors that display a collectivistic and familial (rather than individualistic) orientation, respect for elders, deference to authority figures, concern over loss of face, interpersonal harmony, and achievement orientation (Bond, 1991; Sue & Sue, 1990). Considerable differences in cultural values obviously exist among different Asian American groups. For example, Japanese Americans as a group are more highly acculturated to American society than are Korean Americans. Nevertheless, Asian Americans can be distinguished from White Americans with regard to a number of cultural values and attitudes.

Given that Asian Americans exhibit cultural differences from White Americans

The MMPI

The MMPI is the most widely used personality test in the United States (Graham, 1990). It has been criticized, however, because the original normative sample was unrepresentative of the general population and some of the items were outdated or inappropriate for current use. To improve the measure, the MMPI Restandardization Committee appointed by the University of Minnesota Press (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) developed the MMPI-2. New norms for the MMPI-2 were established with a larger and more demographically representative sample. Although there was an attempt to achieve proportional representation of ethnic minority groups (see Greene, 1987; Graham, 1990), only .5% of the men and .9% of the women included in the sample of 2,600 subjects were Asian Americans (1.5% of the 1980 census were Asian-American). This small number of Asian Americans made it impossible to draw any conclusions about the group performance of Asian Americans compared with other groups.

Even on the original MMPI, little research has been devoted to Asian Americans (Greene, 1987). Some early studies using the MMPI with Asian Americans suggested that they perform differently from their White counterparts. Marsella, Sanborn, Kameoka, Shizuru, and Brennan (1975) used scale 2 of the MMPI with a normal sample of Chinese and Japanese Americans in a larger study to validate depression measures. The researchers found that the depression scale was significantly more elevated among Japanese and Chinese males than among Caucasian males. No ethnic differences were found among females. Sue and Sue (1974), testing students who used a university psychiatric clinic, found that Asian Americans had greater elevations on the MMPI than did their White counterparts. Although the MMPI profiles were similar, Asian Americans seemed to be more disturbed, having higher scale elevations. Many of the scales (L, F, 1, 2, 4, 6, 7, 8, and 0) were more elevated for Asian males than for White males, and some of the scales (L, F, 6, 7, 8, and 0) were also more elevated for Asian females than for White females. There is evidence that because of certain computational decisions in constructing the norms, the original MMPI norms were set too low, so that groups taking the original MMPI often exceeded those norms (Butcher, 1994; Pope, Butcher, & Seelen, 1993). Consistent with other research in the Sue and Sue investigation of clinic users, the Asian Americans had higher MMPI scores than did non-Asian Americans.

Looking at the critical items for somatic complaints and family problems, the researchers also found that Asian students, regardless of gender, were more likely to report somatic and family problems than were the non-Asian students. This study suggests that there may be some gender and ethnic differences in the MMPI profiles. Because of the unknown validity of the instrument with Asian Americans, Sue and Sue (1974) examined the clinical notes made by the clients' therapists. The purpose of analyzing the notes was to ascertain whether the Asian American clients who had elevated MMPI profiles were, indeed, seriously disturbed. The investigators found that therapists' descriptions of clients were related to the severity of disturbance revealed by the MMPI. They concluded that Asian Americans may fail to seek services because of the shame and stigma attached to using mental health services, because many Asian Americans may conceive of mental health and means of resolving problems in ways that militate against the use of mental health services, and because of the unresponsiveness of traditional mental health approaches to Asian cultural values (Sue & Sue, 1987). Thus, only the most severely disturbed Asians seek help, which may account for the elevated MMPI scales.

Finally, Tsushima and Onorato (1982) compared the MMPI scores of White and Japanese-American medical and neurological patients in Hawaii. The data did not reveal any significant ethnic differences in the T scores of validity or clinical scales when diagnoses were matched across ethnic groups. Significant gender effect was found across the two ethnic groups in that males scored higher than females on some of the scales (1, 2, 4, 5, 7, 8, 9) and females scored higher than males on scale 0. The results do not necessarily conflict with those of Sue and Sue (1974) because the latter study simply supported the hypothesis that among clients treated in a mental health clinic, Asian Americans are more disturbed than are Whites.

MMPI investigations with Asian populations overseas have been carried out in Hong Kong and in mainland China with the Chinese version of the MMPI. In a review of 26 studies using the Chinese-language version of the MMPI on Chinese psychiatric populations, Cheung and Song (1989) found that the translation equivalence of the Chinese MMPI had been established through numerous back-translations and modification of items. Thus, questions about the cross-cultural validity of the instrument were directed to the MMPI's conceptual and metric equivalence. The overall results of the studies demonstrated that the Chinese version adequately differentiated between Chinese psychiatric patients and normal controls. Three scales (F, 2, 8) were elevated among the normal Chinese subjects, yet Chinese psychiatric patients were elevated even higher than the baseline norm and often much higher than the American normals. The patterns of profile elevations on the Chinese MMPI for major mental disorders (e.g., schizophrenia, mania, depression, and neurotic disorders) were similar to the profile patterns of American

subjects. The clinical application of the Chinese version of the MMPI seems adequate, although Cheung and Song added a cautionary note about interpreting moderate elevations on scales F, 2, and 8. With respect to metric equivalence, Cheung and Song suggested allowing for an adjustment of one additional standard deviation on scales F, 2, and 8 when predicting psychopathology among Chinese. Obviously, Chinese living in the United States may not be similar to Chinese living elsewhere. The main point is that the MMPI can be useful in clinical evaluation if factors such as cultural, metric, and linguistic differences are taken into account.

More MMPI research with Asian Americans is clearly needed. In the three studies of MMPI comparisons between Asian Americans and Whites cited earlier, the samples were limited (either college students or medical patients) and sample sizes tended to be small. Thus, generalizability of the results to the Asian American population is not known. Because all three studies were conducted on Asian-American subjects in the United States, the MMPI was administered in English in all cases and no translations were performed. However, the question of translation equivalence remains, since it is not clear whether Asian-American subjects in the studies were as proficient in English as were the non-Asian comparison subjects. There is some evidence to suggest that Asian Americans who have lived in the United States for several generations still experience some difficulty with English language mastery (Watanabe, 1973). As such, the results can only indicate possible cultural contributions to the elevation of some MMPI scales.

At least three major research efforts are needed. First, norms for Asian Americans on the MMPI-2 need to be developed. Large and representative samples, broken down by particular Asian groups, would be the most desirable. Such research is difficult, given the relatively small population of Asian Americans and the linguistic and cultural factors that may affect the validity of findings. Second, sources of bias or cultural factors that affect performance on the MMPI-2 should be identified. Third, means of controlling for bias should be devised. Dana (1993) indicates that there are four major varieties of controlling for cross-cultural bias in an instrument: (1) using "corrections" (e.g., the K scale on the MMPI was an attempt to control for defensiveness), (2) developing special norms for the different populations of interest, (3) providing adequate translations of instruments, and (4) interpreting data in a manner that takes into account the cultural background of respondents. It should be noted that the use of corrections involving the K scale has not been fruitful, especially in cross-cultural applications. Butcher and Han (1993) have developed the Superlative Self-Presentation Scale (S scale), which controls for the tendency to present oneself in a superlative manner. This scale may well have much greater validity than the K scale in cross-cultural assessment. Specific scales to detect cross-cultural differences should be developed.

The Present Study

The present study is part of a larger ongoing project investigating cultural factors associated with MMPI responses among Asian Americans. The larger project is intended to identify cultural response sets that affect MMPI performances and to construct means of correcting for these response sets. As a part of that project, the present study was designed simply to compare the responses of Asian-American and White students on the MMPI-2 and to use level of acculturation of Asian-American students as a moderator variable. If cultural factors are important in MMPI performance, we would expect within and between ethnic group differences to emerge, with less acculturated Asian Americans (LAs) and Whites showing the most discrepancy and highly acculturated Asian Americans (HAs) occupying an intermediate position on the MMPI-2 scales. In other words, if acculturation is an important variable, we would expect MMPI-2 scale scores to vary directly or indirectly with acculturation: $LAs > HAs > Whites$ or $LAs < HAs < Whites$.

One hundred and thirty-three Asian-American students (62 males and 71 females) and 91 White students (37 males and 54 females) participated in the study. The students were recruited from introductory psychology classes at a large university in the Los Angeles area. Each subject received a course credit for participation in the study. The Asian-American sample consisted of 35 Chinese, 15 Filipino, 13 Japanese, 34 Korean, 23 Vietnamese, and 13 "other Asian." Asians (mean = 19.20) and Whites (mean = 20.07) differed in age, $t(222) = 2.16, p < .05$. The educational and occupational levels of parents were categorized and examined using chi-squares. The analysis revealed an ethnic difference in the distribution of father's education, $X^2(6) = 19.61, p < .01$; the analysis for father's occupation nearly reached significance, $X^2(8) = 14.58, p < .07$. No significant ethnic differences emerged for mother's education and occupation.

A small group of students were given a questionnaire by research assistants during experimental sessions. To reduce defensiveness over completing a personality inventory, students were instructed not to write their names on the questionnaire. The questionnaire took about 90 to 100 minutes to complete.

Suinn-Lew Self-Identity Acculturation Scale

To assess the degree of acculturation, researchers administered to Asian-American students the Suinn-Lew Self-Identity Acculturation Scale (SL-ASIA). SL-ASIA consists of 21 multiple choice questions. The items deal with language use (e.g., "What language do you prefer?"), ethnic identity (e.g., "How do you identify yourself?"), ethnicity of friends and peers (e.g., "What was the ethnic origin of the friends and peers you had, as a child from 6 to 18?"), generational status, and various behaviors and attitudes (e.g., "What is your food preference at home?"). The stu-

Table 10-1. Internal Consistency Estimates for the MMPI-2 Validity and Clinical Scales for Whites and Asians

Scale	Group	
	Whites	Asians
Lie Scale	.54	.53
F Scale	.58	.61
K Scale	.71	.72
Hypochondriasis	.44	.36
Depression	.29	.54
Hysteria	.49	.53
Psychopathic Deviate	.47	.55
Masculinity-Femininity	males	.72
	females	.58
Paranoia	.62	.77
Psychasthenia	.79	.83
Schizophrenia	.80	.82
Hypomania	.69	.69
Social Introversion	.63	.70

dents responded to each question on a 5-point scale ranging from 1, indicating lowest possible acculturation (or high Asian identity), to 5, indicating highest possible acculturation (or high Western identity). Students' responses were then averaged across 21 questions for a measure of acculturation. SL-ASIA was modeled after the Acculturation Rating Scale for Mexican Americans (Cuellar, Harris, & Jasso, 1980). Past research has demonstrated that the measure has acceptable reliability and validity (Atkinson & Gim, 1989; Suinn, Ahuna, & Khoo, in press; Suinn, Rickard-Figueroa, Lew, & Vigil, 1987). The coefficient alpha for the SL-ASIA in the present sample was .92, which is comparable with those derived from past studies.

Minnesota Multiphasic Personality Inventory-2

Graham (1990) and Burcher, Graham, Dahlstrom, and Bowman (1990) provided internal consistency estimates for the standard validity and clinical scales. Graham (1990) also showed that internal consistency estimates for college students were comparable to those of the MMPI-2 normative sample. In both studies, the coefficient alphas ranged from .34 to .87. In the present sample, the internal consistency estimates ranged from .29 to .80 for White students, and from .36 to .83 for Asian-American students. Table 10-1 shows coefficient alphas for the validity scales and the clinical scales for the White and Asian samples, respectively.

Past research emphasized the importance of assessing the acculturation level of ethnic minorities (Greene, 1987; Sue & Zane, 1985). Thus, the Asian-American students were divided into two acculturation-level groups based on a median split procedure. The median of the acculturation scores on the SL-ASIA for the present sample was 3.05. The results of the analyses, therefore, were based on the comparisons between the three groups: the highly acculturated Asian-American students (HAs), the less acculturated Asian-American students (LAs), and White students. To examine ethnic and gender differences on the standard validity and clinical scales of the MMPI-2, 14 analyses of variance (i.e., one for each scale, except for Masculinity-Femininity, which was analyzed for each gender) were conducted with group and gender as between-subject factors. The dependent variables in each analysis were the mean raw scores on each scale of the MMPI-2. Because our main interest was to compare the mean scores of the groups, raw scores were used as dependent variables in place of T scores (Greene, 1987; Butcher et al., 1989). If significant main or interaction effects were found on a particular scale, post hoc Scheffe tests of paired comparisons with an alpha level of .05 were conducted to reveal the specific nature of the differences.

Because ethnic differences existed on some of the demographic variables—differences that could be confounded with ethnicity—we examined whether the demographic variables were associated with each of the 14 scales. The only significant relationships were between age and the K scale and father's occupation and education and scale 4. Therefore, on the K scale and scale 4, analysis of covariance was used in which age and father's occupation and education were added as the respective covariates.

Table 10-2 shows the means and standard deviations of the MMPI-2 scales for each group. Of the 13 scales, the analyses of variance yielded eight significant group effects and five significant gender effects with only one (scale 4) showing a significant interaction effect.

Specific Group Effects

The group effects strongly and consistently supported the hypothesis that LAs and Whites would differ the most on the MMPI-2 scales. Inspection of the means in Table 10-2 shows that all cases (whether the differences were significant or not) were ordered such that $LAs > HAs > Whites$ or $LAs < HAs < Whites$. Significant group effects did not emerge for scales L, K (analysis of covariance was performed, as noted earlier), 3, 5 (which was divided according to gender), and 9. Figures 10-1 and 10-2 show the mean scale scores for men and women.

On the F scale, a significant group effect was found in which $F(2, 223) = 7.06$, $p < .001$. The Scheffe comparisons revealed that LAs scored significantly higher than Whites. The group effect on scale 1, $F(2, 223) = 19.38$, $p < .001$, was one in

Table 10-2. Means and Standard Deviations for the MMPI-2 Validity and Clinical Scales for Highly Acculturated and Less Acculturated Asian-American Students and Whites

Scale		Group			Whites
		Highly Acculturated Asians	Less Acculturated Asians		
Lie Scale	M	3.03	3.40		2.93
	SD	2.20	1.98		1.94
F Scale	N	(65)	(68)		(91)
	M	7.69	9.40		5.80
	SD	6.25	6.24		4.66
	N	(65)	(68)		(91)
K Scale	M	12.75	11.93		13.76
	SD	4.48	4.95		4.65
	N	(65)	(68)		(91)
Hypochondriasis	M	8.05	9.78		5.80
	SD	4.13	4.74		3.56
	N	(65)	(68)		(91)
Depression	M	22.25	23.62		19.35
	SD	6.62	5.72		5.14
	N	(65)	(68)		(91)
Hysteria	M	21.78	21.97		20.93
	SD	4.58	5.10		4.41
	N	(65)	(68)		(91)
Psychopathic Deviate	M	19.32	21.16		17.86
	SD	5.71	5.55		5.07
	N	(65)	(68)		(91)
Masculinity-Femininity	M	25.54 (m)	25.68 (m)		26.78 (m)
	SD	5.62	5.17		5.72
	N	(24)	(38)		(37)
Paranoia	M	35.49 (f)	34.13 (f)		34.80 (f)
	SD	4.20	4.20		4.59
	N	(41)	(41)		(54)
Psychasthenia	M	11.71	13.41		10.65
	SD	3.84	3.82		3.33
	N	(65)	(68)		(91)
Schizophrenia	M	20.20	22.12		15.97
	SD	9.26	8.60		7.96
	N	(65)	(68)		(91)
Hypomania	M	20.78	24.57		16.44
	SD	10.08	11.04		9.69
	N	(65)	(68)		(91)
Social Introversion	M	20.09	20.76		19.56
	SD	4.88	6.09		5.41
	N	(65)	(68)		(91)
	M	30.91	32.62		27.30
	SD	10.17	9.43		10.84
	N	(65)	(68)		(91)

Note: N indicates the number of sample. For the Masculinity-Femininity scale, m refers to males and f refers to females.

scale 7, $F(2, 223) = 10.81$, $p < .001$, and scale 8, $F(2, 223) = 11.55$, $p < .001$. On both scales, $LAs > HAs > Whites$. Finally, scale 0 showed a main effect for group, $F(2, 223) = 6.23$, $p < .01$, in that $LAs > Whites$.

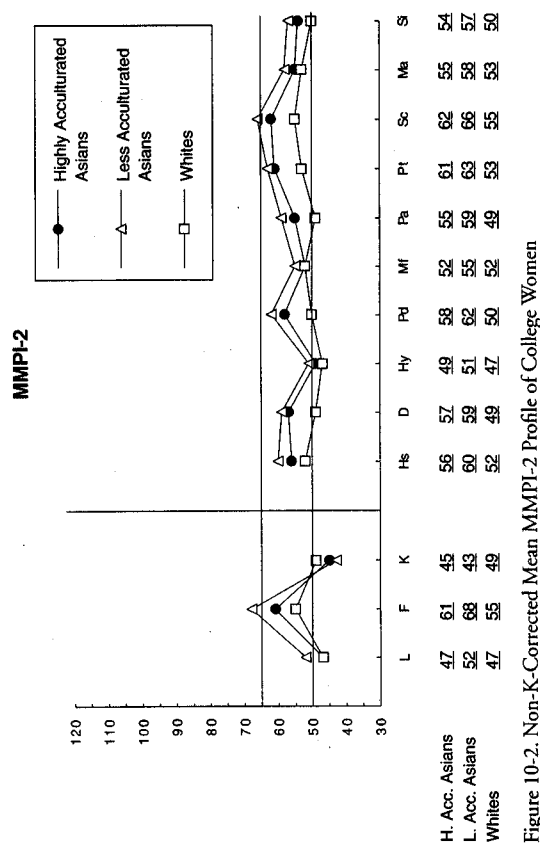
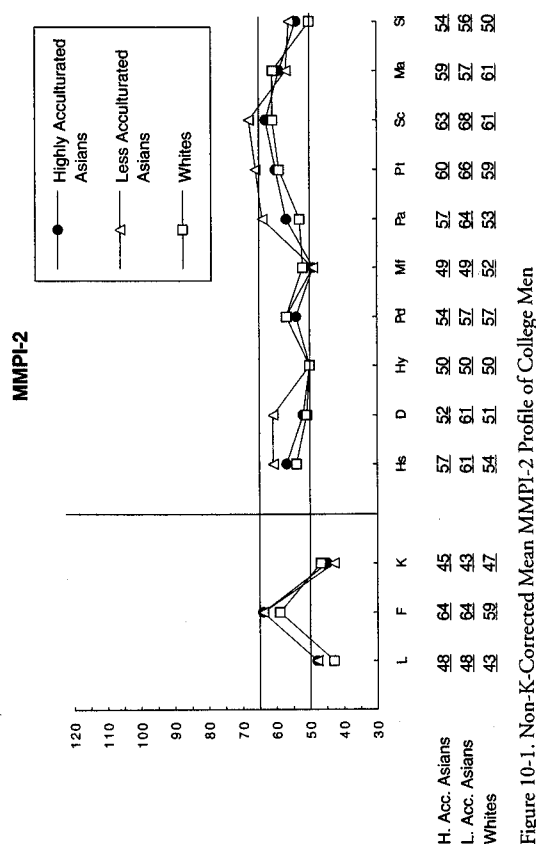
In terms of main effects for gender and specific gender differences, significant relationships were evident for the L scale [$F(1, 223) = 6.79$, $p < .01$], where $F > M$; F scale [$F(1, 223) = 4.22$, $p < .05$], where $F > M$; scale 2 [$F(1, 223) = 13.07$, $p < .001$], where $F > M$; scale 3 [$F(1, 223) = 4.37$, $p < .05$], where $F > M$; and scale 9 [$F(1, 223) = 11.46$, $p < .001$], where $M > F$. On scale 4, a significant interaction effect between group and gender appeared, $F(2, 223) = 4.88$, $p < .01$.

The purpose of this study was to examine ethnic differences on the MMPI-2 and to determine if the differences are consistent with an acculturation effect. In general, the results indicated that less acculturated Asian-American students showed greater elevation on the clinical scales of the MMPI-2 profile than did highly acculturated Asian-American students or White students. In turn, highly acculturated Asian-American students had greater elevations than their White counterparts. Where significant group differences emerged on scales 1, 2, 4, 6, 7, 8, and 0, less acculturated Asian-American students and White students generally fell at the extremes, with more acculturated students in the middle. Interestingly, other recent studies suggest that refugees have higher MMPI-2 scale elevations than do members of the same ethnic group who have been in the United States longer. This was found in the case of recent Cuban refugees and Vietnamese refugees compared with Cubans and Vietnamese, respectively, who have been residing in the United States longer. These findings are somewhat consistent with those of the present study.

The results also indicate that Asian-American students had more somatic complaints, were more depressed and anxious, and feel isolated more often than Whites, regardless of their acculturation level. Moreover, as revealed by their performance on the MMPI-2, less acculturated Asian Americans had greater somatic complaints and more often perceived their environment as unsupportive than did their more acculturated counterparts.

The pattern of the MMPI-2 profiles was similar for all three groups. T scores on the validity and clinical scales were within normal range or were mildly elevated. However, the elevation was greater for the Asian Americans, especially for the less acculturated Asian Americans. Scores for females were significantly higher than those for males.

The findings may reflect a cultural response bias among Asian Americans. We predicted that if cultural factors are important in responses to the test, Asian Americans would differ from Whites, and the less acculturated Asians would show the greater difference. Results supported the prediction. Although uniform attitudes and values do not exist across diverse groups of Asian Americans, some common ways of behaving have been noted for this population. This is especially true



which the Scheffe tests were significant for the comparisons: $LAs > HAs > Whites$. On scale 2, the main effect for group was significant, $F(2, 223) = 13.95$, $p < .001$. The Scheffe comparisons revealed that $LAs > HAs > Whites$. For scale 4, the groups differed significantly, $F(2, 206) = 4.75$, $p < .05$, such that $LAs > Whites$ (for this scale, an analysis of covariance was performed with father's education and occupation as a covariate). A main effect was found for scale 6, $F(2, 223) = 10.26$, $p < .001$, in which $LAs > HAs > Whites$. Main effects of group were also found for

for Asians who share Confucian values that emphasize respect for authority, close families, and formal interpersonal relationships (Dahlstrom, Lachar, & Dahlstrom, 1986). Thus, it is possible that some cultural factors may be confounded with actual psychopathology in the responses of Asian Americans to the MMPI-2. Obviously, we cannot determine the precise aspects of culture that may be important in affecting MMPI-2 responding. Furthermore, if the instrument is culturally biased, this does not mean that the MMPI-2 is not a valuable tool in cross-cultural evaluation. What it really means is that the interpretations of profiles, even similar ones, of individuals from different ethnic groups must consider how cultural factors may have influenced responses.

The findings are also consistent with Sue and Sue (1974), who found that, among users of a psychiatric clinic, Asian Americans had higher original MMPI scale elevations than did White Americans. However, the results seem to be at odds with those of Tsuchima and Onorato (1982), who found that after controlling for diagnosis, Asian Americans and Whites did not differ on original MMPI scale elevations. It should be noted that the present study dealt with "normal" (i.e., nonpsychiatric) samples in contrast to Sue and Sue (1974) and Tsuchima and Onorato (1982). Furthermore, the present findings suggest that ethnic differences on the MMPI are more marked among the less acculturated Asian Americans. In Tsuchima and Onorato's study, their client sample was composed of Japanese Americans, who are the most acculturated among the various Asian-American groups. Under such circumstances, ethnic differences may be minimal.

The present study is limited in some ways. The sample size was small and Asian Americans represent many distinct ethnic groups. However, this study was the first to examine group differences between Asian Americans and Whites in their performance on the MMPI-2 and the relationship of acculturation and responding. Although the results are consistent with a cultural response set interpretation, we cannot rule out the possibility that they may simply reflect that Asian Americans as a minority group experience greater difficulties in their daily lives and as a result have more elevated profiles than do Whites. As a minority group, Asian Americans may experience problems such as English-language proficiency, feelings of isolation, prejudice and discrimination, culture conflicts, and so forth. It is possible that dealing with these problems takes a toll on Asian Americans' mental health despite their socioeconomic and educational resources. That is, the MMPI-2 may represent actual differences in symptoms and distress, in that less acculturated Asian Americans are under greater stress than are more acculturated Asian Americans and Whites. Nevertheless, it is precisely this inability to distinguish between a strict cultural response set interpretation and a minority group-stress interpretation that makes it imperative to conduct further studies on the validity of the MMPI-2 with Asian Americans.

We have initiated further studies to see if the cultural interpretation is valid. The larger project of which the present study is a part was initiated to identify principles that may underlie the responses of Asian Americans to self-report questionnaires such as the MMPI-2. That is, if cultural factors influence responses and if these factors can be identified, then it may be possible to control for, or take into account, cultural response sets in assessment instruments. The ultimate goal of the project is to increase the validity of measures of psychopathology that are developed in Western societies for Asian Americans. To achieve that goal, the project aims to develop scales that can systematically control for the cultural biases of Asian Americans on measures of psychopathology. It attempts to see if cultural factors can predict the responses of Asian Americans to an assessment measure. Having completed the present study, we are now examining the influence of three hypothesized cultural dimensions on responses to the MMPI-2. Shame, symptom tolerance, and cultural familiarity were identified as important cultural dimensions for Asian Americans based on the past literature (e.g., Kim, 1978; Kitano, 1976; Sue & Morishima, 1982). This second study focuses on whether ethnic differences in performance on the MMPI-2 (as found in the present study) can be explained by the cultural evaluations of the MMPI-2 items. If, for example, Asian-American respondents rate a particular item as being extremely shameful, and if few Asian Americans from the first pilot study endorsed the item, the findings may suggest that the cultural dimension of shame may be affecting responses.

In the second study, subjects are asked to rate the degree of shame, symptom tolerance, and cultural familiarity associated with each item of the MMPI-2. Because of the amount of data that needs to be collected, the study is still in progress. If the identified cultural dimensions are successful in predicting performance on the MMPI-2, we can conduct further studies to develop scales that can control for the cultural biases. For example, the S scale on the MMPI-2 can be used to understand the response set of self-presentation, and the construction of a scale for social desirability has allowed researchers to control for socially desirable responding on other assessment measures. We are hopeful that corrections for cultural response sets can be devised.

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