

The Use of Korean MMPI-2 with Korean Psychiatric Sample: Preliminary Investigation

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This study was conducted to investigate the utility of the Korean version of the MMPI-2 in clinical assessment. MMPI-2 results of one hundred twenty psychiatric patients were compared with those of 167 college students on scale scores and item endorsement frequencies. Cross-cultural comparisons between Korean and American samples were also made. As reported in the study with Chinese and Hong Kong sample(Cheong, Song, & Zhang, 1996), elevated clinical scores among normals and moderate gap on clinical scale scores between normals and psychiatric samples were found: Korean college students showed significantly elevated mean scores on the MMPI-2 scales compared to American normative sample; Mean clinical scores produced by Korean psychiatric patients were only slightly higher than those of Korean college students, resulting partly in a small difference between Korean and American psychiatric samples. Results from item-level analyses were not clear enough to draw meaningful conclusions on MMPI-2 performance among different diagnostic groups. Limitations of this study suggest that the results of this study should be interpreted with caution and that further research is needed to explore the clinical utility of the Korean MMPI-2.

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The Minnesota Multiphasic Personality Inventory (MMPI), originally developed in the United States and adapted in many other countries including Korea, has been one of the most commonly administered self-report measure for the detection and evaluation of psychopathology for more than 50 years. The inventory's enduring popularity stems from two reasons such as a comprehensive array of well-established response-style indicators(Berry, Baer, & Harris, 1991; Baer, Wetter, & Berry, 1992) and an unparalleled body of research demonstrating the validity and clinical utility of the inventory. Its restandardization and modernization(MMPI-2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) has added a wide array of contributions to applying the MMPI to obtaining diagnostic and personality functioning information from psychiatric patients. Although a major goal of the MMPI restandardization project was to preserve continuity with the original MMPI by keeping the validity and clinical scales relatively intact, the revised instrument differs from the original MMPI in several respects. New items were added and some objectionable items were deleted. A new system of uniform T scores was developed to solve the problem of nonequivalency of percentile values across scales. The MMPI-2 norms are based on a far broader national sample. The T score cut-off recommended to indicate a clinically significant elevation was reduced from 70 to 65. New validity scales assessing test-taking attitudes have been incorporated, and several new measures focus on clinical problems(e.g., Addiction Acknowledgement scale and Marital Distress scales) not assessed in the original MMPI.

Despite some differences between the two versions, the correlates of most of the MMPI-2 scales and code types are quite comparable to those previously identified for the original MMPI(Archer, Griffin, & Aiduk, 1995; Butcher & Williams, 1992; Graham, 1988). This is not surprising because the scales carried over to the MMPI-2 are essentially the same as the version in the MMPI. MMPI interpretive guidelines(Butcher & Williams, 1992; Graham, 1990; Greene, 1991) have largely extrapolated the personality descriptors and diagnostic indicators associated with the original MMPI to the MMPI-2.

One important application of the MMPI and MMPI-2 in clinical assessment is to aid in differential diagnosis. Studies have been conducted to evaluate the contribution of the MMPI and MMPI-2 to differential diagnosis (Ben-Porath, Butcher, & Graham, 1991; Weed, Butcher, McKenna, & Ben-Porath, 1992). In most studies, the diagnostic efficiency of the MMPI and MMPI-2 has been judged by group contrast approach that examines whether the mean scores on relevant test indices produced by a group of patients with a particular diagnosis differ from those produced by a comparable reference group. Zalewski and Gottesman(1991) conducted meta-analyses to examine the effectiveness of MMPI scales in determining psychiatric diagnostic classification. At the level of group data, multivariate equations based on combinations of MMPI scales were relatively successful in classifying cases into broad diagnostic categories. Regression equations based on the three validity and eight clinical scales accounted for 84% of the variance between normal and psychiatric group membership. Using the same scales to

differentiate psychotic from neurotic samples accounted for 56% of the variance with successful classifications in the range of 80%. However, differentiation between more precisely defined groups were much less successful with approximately less than 30% of variance accounted for. Attempts to predict psychiatric diagnosis from MMPI scores at the level of individual cases have met with moderate success. In a study by Pancoast and his colleagues (Pancoast, Archer, & Gordon, 1988), the MMPI two-point code types were used to examine their ability to predict discharge diagnosis of psychiatric inpatients. When the most commonly occurring MMPI two-point codes were assigned to a general diagnostic category (normal, neurotic, character disorder, psychotic, or other), there was a 35% hit rate between MMPI profile classification and psychiatric diagnosis classified in the same way. Libb and colleagues (Libb, Murray, Thurstin, & Alarcon, 1992) used discriminant functions to predict psychiatric discharge diagnosis (affective disorder, schizophrenia, or substance abuse) based on MMPI scores. Two functions of MMPI scores accounted for 100% of the variance and correctly classified 69% of the cases. In a study by Morrison et al. (Morrison, Edwards, & Weissman, 1994), the MMPI and MMPI-2 code types were used to predict psychiatric diagnosis in an outpatient sample. For both the MMPI and MMPI-2, the correct classification rates for neurotic and psychotic patients were in the middle range. Both tests identified normals more than 70% of the time. In light of the modest level of predictive accuracy for diagnosis, researchers have uniformly cautioned against the use of the MMPI and MMPI-2 alone as a basis of psychiatric diagnosis. They emphasized the importance

of integrating findings from the MMPI and MMPI-2 with other sources of clinical data before arriving at diagnosis.

Attempts to evaluate the clinical utility of the MMPI have also been made in Korea. Kim (1982) examined the diagnostic efficiency of the short form for the MMPI (MMPI-383; Chung, Lee, & Chin, 1967). The short form for the MMPI (MMPI-383) consists of 383 items and the content and order of the scored items are the same as those in the standard form for the MMPI. The MMPI-383 has been reported to be as reliable and valid as the standard MMPI (Kim & Lee, 1980) and is commonly used in most clinical settings. For neurotics, scores on Hs, D, Hy, and Pt were elevated. For psychotics, scores on Pa, Pt, and Sc were elevated, but other clinical scales were also likely to be elevated. Discriminant function analyses accounted for 92% of the variance in diagnostic group and correctly classified 56% of the cases. The rate of correct classification for normals was more than 80%. Whereas the correct classification rate for neurotics was more than 70%, the rate of correct classification for schizophrenics was less than 40%. As pointed out in the previous studies (Libb, et al., 1992; Pancoast et al., 1988), Kim suggested that MMPI results should be considered as one of the diagnostic indicators.

Not until the 1990s were the first experimental studies with the MMPI-2 conducted in Korea. Han (1996) translated the MMPI-2 into Korean, administered the Korean version of the MMPI-2 to a group of college students (284 men and 399 women), and examined psychometric properties of the Korean MMPI-2 via factor analysis, scale means,

item endorsement frequencies, internal consistency, test-retest reliability, and external correlates. In each analysis, responses from Korean students were compared to those of U.S. college students (515 men and 797 women) who participated in the MMPI-2 Restandardization Project. Principal component analyses of the 13 basic scales (3 validity scales and 10 clinical scales) indicated that for Korean males, a three component solution was convergent with that of American males, whereas for Korean females, a four component solution suggested identical factor structures across cultures. Principal component analyses were also performed on the 15 content scales. Unlike basic scales, content scales are more internally consistent, and few items overlap across scales. A two component solution for the content scales replicated very well across two cultures for both genders. Comparisons of scale means and standard deviations of the basic and content scales across two cultures showed that mean Korean profiles were significantly different from American profiles and were characterized by elevations on scales F, D, Pt, Sc, and Ma. Comparisons of item endorsement pattern also showed the similar results as founded in the scale-level. The Korean version of the MMPI-2 had similar stability and internal consistency to the original. Content scales showed much higher reliability than did the clinical scales. Behavioral correlates of the MMPI-2 clinical scales derived from peer ratings for the Korean sample were similar to those derived from spouse ratings for the American sample. Although Korean sample endorsed to the items more frequently in the keyed direction (indicating more psychopathology), invariant component structures of the content scales, substantial

reliability, and valid behavioral correlates for the scales indicated that the Korean version of the MMPI-2 appeared to be as reliable and valid as the original MMPI-2. Since the utility of the Korean MMPI-2 will ultimately be determined by its effectiveness with psychiatric populations, it is necessary to conduct studies in clinical settings. Building on the cross-cultural performance of college students on the Korean MMPI-2, we adapted the MMPI-2 for use with the Korean clinical populations. As an initial stage for establishing validity of the Korean MMPI-2 in Korean clinical assessment, here we report results from comparisons of Korean psychiatric sample with Korean college sample and American psychiatric sample on a scale-level and an item-level.

Method

Participants

Korean psychiatric sample

One hundred twenty participants were recruited through the cooperation of the clinical psychologists or psychiatrists in psychiatric hospitals in several geographic regions of Korea including Seoul, Yongin, Kwangju, and Anyang. Data collection was conducted in Korea in 1999 and 2000. The following exclusion criteria were used to screen out possible invalid profiles: 30 or more "Cannot Say" responses or for a raw score of 25 or greater on the F or FB scales. The final sample consisted of 97 patients (44 males and 53 females), with mean ages of 38.4 for men and 37.6 for women,

respectively. Thirty two percent of the patients were married; 30% were single; 2% were separated; 1% were divorced; and 35% did not indicate their marital status. All participants included in this investigation had received psychiatric diagnoses based on the fourth edition of the *Diagnostic and Statistical Manual of Mental disorders* (DSM-IV; American Psychological Association, 1994). Most patients were mildly to moderately disturbed, and had the following *Diagnostic and Statistical Manual of Mental disorders* (DSM IV; American Psychological Association, 1994) diagnoses: 43%(n = 42) were diagnosed with schizophrenia, 17%(n = 16) with bipolar disorder, 11%(n = 11) with major depressive disorder, 8%(n = 8) with alcohol dependency, 3%(n = 3) with somatoform disorder, 2%(n = 2) with the remaining with other disorders, and 16%(n = 15) with missing diagnosis.

Korean College Sample.

The college sample consisted of 167 Korean college students(82 men, 87 women) recruited from three different universities(Seoul National University, Dankook University, and Osan College) in Korea. The data were collected in the summer of 2000. Students volunteered for this study to get extra points for their final grades. Students completed the MMPI-2 with a standard instruction to answer the items "as they apply to themselves" during the general psychology class hours. The mean ages of the male and female students were 19.2 years and 20.3 years, respectively.

American psychiatric sample.

As a part of the U.S. MMPI-2 Standardization

project(Butcher et al., 1989), data from 347 American psychiatric patients(187 males and 160 females) in several facilities in Minnesota and Ohio were collected. The participants were given the MMPI-2 as part of their diagnostic assessment at most facilities; however, some patients at the state mental hospital in Minnesota were paid a small amount(\$4.00) for their participation(Butcher, Graham, Williams, & Ben-Porath, 1990).

American college sample.

American college sample consisted of 515 men and 797 women who participated in the MMPI Restandardization Project. Data were collected from four American universities: Kent State University, the University of Minnesota, University of North Carolina, and the U.S. Naval Academy(Butcher, Graham, Dahlstrom, & Bowman, 1990). The mean age of both genders was 19.8 years.

Instrument

The Korean version of the MMPI-2 was developed by Han(1996) in the following stages. The original MMPI-2 items were independently translated into Korean by Han and one bilingual and then discrepancies between the two translators were resolved by mutual consensus. The common items between the Korean MMPI and the Korean translation of the MMPI-2 were compared by a second bilingual to select more accurately and naturally worded items. The Korean items were then submitted to a third bilingual for back-translation into English. The original English items and the back-translated English items were examined

for discrepancies by an American psychologist who was one of the members of the MMPI Restandardization Committee and who is an expert in MMPI cross-cultural work. This resulted in a review and retranslation of 20 inadequate items.

Results from Han's(1996) preliminary validation of the Korean MMPI-2 with Korean college sample showed that several items needed to be modified. For example, it was unexpectedly found that the literal translation of item 12, "My sex life is satisfactory" did not convey the original meaning to Korean female students. Fifty-nine percent of female students did not respond to the item because they assumed only married women(a premarital sex is still very rare in Korea) were eligible to judge whether their sex life is satisfactory. The item was retranslated into "(If you are married) My sex life is satisfactory; (If you are single) Although I am not married, I am OK with my sex life the way it is." All Korean samples (psychiatric and college samples) were given the modified version of the Korean MMPI-2.

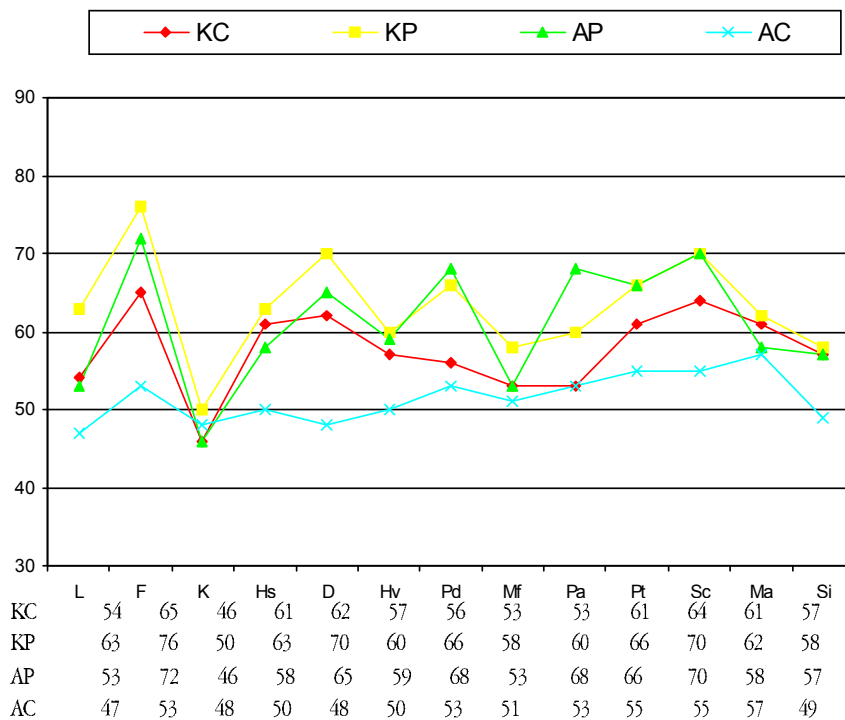
Results

Analyses were performed to examine the clinical utility of the Korean version of the MMPI-2 at both scale- and item-levels. In scale level analyses, Korean psychiatric sample was compared with Korean college sample and American psychiatric sample on mean scale scores. Scale mean differences between the two Korean samples(psychiatric vs. college) were also compared with those between the two American samples(psychiatric vs. college). In

item level analyses, items that best discriminated (a) between Korean college students and two Korean psychiatric groups(depression and schizophrenia) and (b) between Korean psychiatric and American psychiatric groups were identified. Because of the nature of the purpose of our study-- a preliminary investigation of the utility of the MMPI-2 in Korea, and of a small sample size in each diagnostic group, we limit our presentation of results to initial reports of the data using descriptive statistics, rather than examining predictive validity of individual clinical scales using more rigorous statistical techniques.

Scale Level Comparisons

To compare scale means of Korean psychiatric sample with Korean college sample and American psychiatric sample, the mean K-corrected T-scores for the three samples were plotted against American adult norms(see Figure 1 and Table 1). For the mean score comparisons, the effect size estimate, d (Cohen, 1988) is used rather than the significance test, t because the significance level depends largely on the sample size. With a large sample size, a small mean difference can lead to a significant result. The effect size (d) indicates the mean difference between two groups in terms of pooled standard deviation unit. Dividing the mean difference by the pooled standard deviation standardizes the mean differences, allowing us to compare the results of very different studies. Suppose a study has a d of .25. This always means that there is one quarter of a standard deviation difference between the two means, regardless of sample size and regardless of the measure used. Cohen(1988) described .2, .5,



Note: KC: Korean College sample, KP: Korean Psychiatric Sample, AP: American Psychiatric sample, AC: American college sample.

Figure 1. Group Mean K-corrected MMPI-2 Standard Scale Profiles for Korean Psychiatric Patients Compared with Korean College and American Psychiatric Samples

and .8 as a "small effect size," "medium effect size," and "large effect size," respectively. With a *d* of .20, two distributions have an overlap of about 85%, whereas with a *d* of .8, two distributions have an overlap of about 53%.

As expected from Han's study(1996) with Korean college students, scale means of Korean college sample are significantly elevated. On the standard scales F, Hs, D, Pt, Sc, Ma, the elevations are one standard deviation above the American normative sample mean. Since mean scale scores of American college students are slightly higher than those of

their adult counterpart, the mean differences between two national college samples are slightly smaller than those between Korean college sample and American adult sample. The mean differences between two college samples are the greatest on the standard scales Hs and D(*d* = 1.05 and *d* = 1.37, respectively).

Given the fact that Korean college sample shows significantly elevated mean scores on the MMPI-2 scales, it is unexpected to find that mean clinical scores produced by Korean psychiatric sample are only slightly higher than did those of Korean college sample(mean *d* = .44 for validity and clinical

Table 1. Korean Psychiatric Sample Descriptive Statistics Compared to Korean College Sample and American Psychiatric Sample: Validity, Clinical, and Content Scales

	KP (n = 97)		KC (n = 169)		d_k	AP (n = 347)		AC (n = 1312)		d_a	d_p	d_c
	M	SD	M	SD		M	SD	M	SD			
L	63.18	14.30	53.80	10.92	.77	52.96	11.74	47.35	9.38	.57	.83	.67
F	76.06	20.59	64.72	16.58	.63	72.21	19.93	53.47	12.21	1.32	.19	.88
K	50.30	11.34	46.41	9.71	.38	46.07	10.64	47.65	9.82	-.16	.39	-.13
Hs	62.78	10.16	60.95	10.60	.18	58.12	13.77	50.31	10.09	.71	.36	1.05
D	69.91	12.73	62.05	11.36	.66	64.55	16.21	48.19	9.92	1.42	.35	1.37
Hy	59.71	11.30	56.76	11.94	.25	59.27	15.45	49.83	10.02	.83	.03	.68
Pd	65.69	11.88	56.50	11.32	.80	67.74	13.97	53.32	10.57	1.36	-.15	.39
Mf	57.77	10.65	52.83	9.32	.50	53.14	10.60	51.18	10.33	.19	.44	.16
Pa	59.59	16.34	52.57	12.65	.50	68.05	17.53	53.03	11.59	1.15	-.49	-.04
Pt	65.98	11.98	60.71	12.11	.44	66.09	16.36	54.72	11.11	.92	.01	.53
Sc	69.69	13.19	63.69	12.80	.47	69.95	17.02	55.07	11.60	1.15	.02	.73
Ma	61.53	12.75	60.80	10.91	.06	57.55	12.99	56.96	11.14	.05	.31	.35
Si	57.92	8.59	56.70	9.56	.13	57.37	12.28	48.61	9.75	.73	.05	.83
ANX	58.00	11.74	56.04	10.97	.18	62.69	11.93	53.50	10.26	.83	-.35	-.24
FRS	60.67	12.24	59.73	11.92	.08	55.77	12.96	48.61	9.81	.68	.38	1.10
OBS	57.03	11.80	59.76	10.74	-.25	58.58	13.20	52.27	10.33	.57	-.12	.72
DEP	62.37	11.58	60.30	9.89	.20	66.90	15.06	53.38	10.01	1.20	-.32	.39
HEA	59.00	11.47	58.84	10.65	.01	58.81	13.90	51.03	10.23	.70	.01	.76
BIZ	59.85	14.31	55.91	11.20	.32	61.94	15.89	54.55	10.50	.62	-.13	.13
ANG	52.92	11.43	53.22	9.46	-.03	55.63	12.45	53.39	10.47	.21	-.22	.02
CYN	53.00	8.63	51.17	7.15	.24	55.24	12.09	52.02	9.61	.32	-.20	-.09
ASP	55.62	9.68	54.75	7.88	.10	57.03	12.40	53.87	10.14	.30	-.12	.09
TPA	53.76	11.54	53.27	10.02	.05	53.34	12.47	52.24	11.09	.10	.03	.09
LSE	59.32	13.22	56.21	11.97	.25	61.44	13.83	50.76	10.01	.98	-.16	.53
SOD	56.54	10.62	55.07	9.96	.14	56.31	12.18	47.27	9.09	.92	.02	.85
FAM	55.96	11.71	53.40	10.16	.24	61.55	13.56	52.36	10.53	.82	-.43	.10
WRK	60.92	11.12	60.05	11.29	.08	62.53	14.30	52.85	10.42	.85	-.12	.68
TRT	61.98	12.69	58.12	11.42	.33	62.49	14.84	51.54	9.96	.98	-.04	.65

Note: KP : Korean psychiatric sample; KC : Korean college sample;

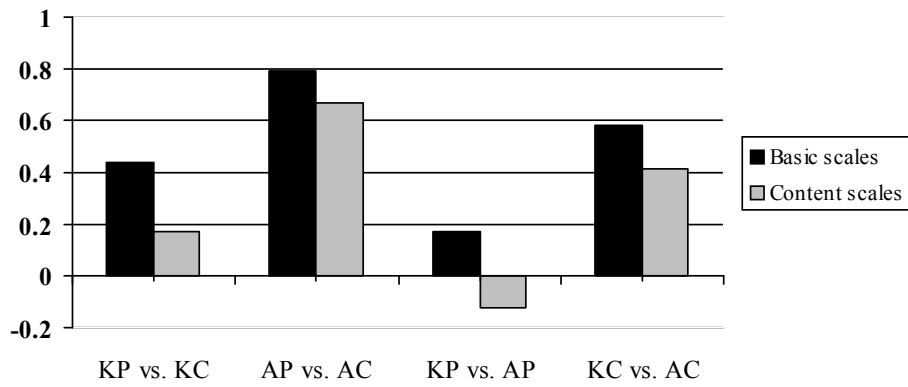
AP : American psychiatric sample; AC : American college sample.

d_k : d between Korean psychiatric sample and Korean college sample.

d_a : d between American psychiatric sample and American college sample.

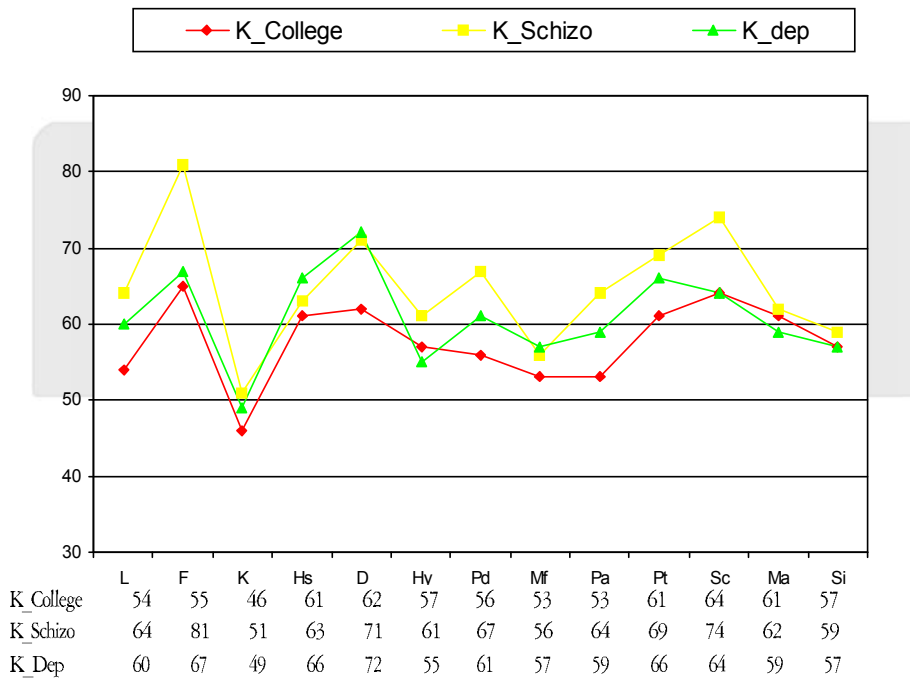
d_p : d between Korean psychiatric sample and American Psychiatric sample.

d_c : d between Korean college sample and American college sample.



Note: KP: Korean psychiatric sample; KC: Korean college sample; AP: American psychiatric sample; AC: American college sample

Figure 2. Comparisons of Mean *d* values for 13 Basic scales and 15 Content Scales



Note: K_College: Korean college sample, K_Schizo: Korean psychiatric sample with schizophrenia; K_Dep: Korean psychiatric sample with depression.

Figure 3. Group Mean K-corrected MMPI-2 Standard Scale Profiles for Korean Psychiatric Patients with Schizophrenia and Depression Compared with Korean College Sample

scales; mean $d = .17$ for content scales, see Figure 2). The disparity between Korean and American psychiatric samples is dramatically smaller than that between Korean and American normal samples. It is surprising to see that mean scores of content scales in Korean psychiatric sample are slightly lower than those in American psychiatric sample (mean $d = -.12$). The scales showing the largest mean differences between Korean and American psychiatric samples on the clinical scales are Hs(KP = 63; AP = 58), D(KP = 70; AP = 65), Pa(AP = 68; KP = 60). Figure 2 also indicates that across all mean comparisons, mean differences for the validity and clinical scales are larger than for the content scales.

Figure 3 displays the mean profiles of MMPI-2 standard scales for the Korean college sample, Korean patients with schizophrenia, and Korean patients with depression. Only these two diagnostic groups are selected because they are the major diagnostic groups with substantial sample size. The patients with schizophrenia scored significantly higher on Sc and F than did the patients with depression ($d = .74$ for Sc and $d = .65$ for F). The patients with depression, however, scored only slightly higher on D than did the patients with schizophrenia ($d = .10$). Furthermore, the MMPI-2 content scale Depression (DEP) also did not differentiate patients with depression from patients with schizophrenia ($M = 61.36$, $SD = 11.83$ versus $M = 63.40$, $SD = 11.14$). Poor performance of the content scales in discriminating two patient samples is also found in BIZ(Bizarre Mentation) where patients with schizophrenia scored slightly higher than did patients with depression ($M = 61.98$, $SD = 15.85$ versus $M = 59.27$, $SD = 15.03$).

Item Level Comparison

Intra-cultural and cross-cultural comparisons were made on the MMPI-2 item level. Items that best discriminated between Korean college students and two Korean psychiatric groups (depression and schizophrenia) were identified. True item endorsement frequencies were also compared between Korean and American psychiatric samples. According to Butcher and Han(1996), one simple way to establish cross-cultural equivalence of a test is a comparison of item endorsement frequencies between groups, and endorsement percentage differences below 25% are considered negligible.

Between the college and depression groups 76 items showed a 25% or greater difference in endorsement, and between the college and schizophrenia groups 42 items showed such a difference. Fifteen of these items replicated a 25% or greater endorsement difference across diagnoses.

Tables 2 and 3 show the 10 items that discriminated best Korean college students from Korean psychiatric patients with depression and schizophrenia respectively. For both diagnostic groups, the item showing the largest item endorsement difference is item 113, with psychiatric patients in both schizophrenia and depression groups indicating more frequently that they knew who was responsible for most of their troubles. Item 41 also discriminated well between college students and the two psychiatric groups. A majority of college students(89.6%) reported that they do not always tell the truth, whereas some patients (36.4% in depression group and 52.4% in schizophrenia group) reported so. There were three items whose

Table 2. The 10 MMPI-2 Items that Discriminate Best Between Patients with Depression and College Sample

Item	Diff	Dep	Col	Item Content1
113	65.3	81.8	16.5	I know who is responsible for most of my troubles.
15	56.8	72.7	15.9	I work under a great deal of tension.
41	53.2	36.4	89.6	I do not always tell the truth.
164	52.5	81.8	29.3	I seldom or never have dizzy spells.
239	47.1	72.7	25.6	I am entirely self-confident.
119	47.0	81.8	29.3	I like collecting flowers or growing house plants.
426	46.6	81.8	35.2	I used to like play hopscotch and jump rope.
408	45.9	72.7	26.8	I am apt to take disappointments so keenly that I cant put them out of my mind.
460	45.7	100.0	54.3	Several times I have been the last to give up trying to do a thing.
285	45.2	90.9	45.7	I am more sensitive than most other people.

Notes. Dep: Patients with Depression; Col: College Students.

"Diff" represents the difference in percentages of item endorsement between patients and students.

item endorsement patterns were opposite to what was expected in patients with depression. On items 164("I seldom or never have dizzy spells"), 239("I am entirely self-confident"), and 460 ("Several times I have been the last to give up trying to do a thing"), patients with depression endorsed more frequently than did college students. It may be possible to attribute this unexpected finding to a small sample size of patients(n=11) in depression group. Item 3("I wake up fresh and rested most mornings") showed much higher endorsement frequencies in schizophrenia patients compared to college students, which is also considered to stem from the same reason.

Table 3. The 10 MMPI-2 Items that Discriminate Best Between Patients with Schizophrenia and College Sample

Item	Diff	Sch	Col	Item Content1
113	45.4	61.9	16.5	I know who is responsible for most of my troubles.
54	40.8	52.4	11.6	My family dose not like the work I have chosen (or the work I intend to choose for my lifework).
273	39.3	66.7	27.4	Life is a strain for me much of the time.
180	38.9	54.8	15.9	There is something wrong with my mind.
203	38.8	42.9	81.7	I gossip a little at times.
41	37.2	52.4	89.6	I do not always tell the truth.
3	35.4	71.4	36.0	I wake up fresh and rested most mornings.
42	35.0	42.9	7.9	If people had not had it in for me, I could have been much more successful.
52	34.5	61.9	27.4	I have not lived the right kind of life.
254	33.6	65.9	32.3	Most people make friends because friends are likely to be useful to them.

Notes. Sch: Patients with Schizophrenia; Col: College Students.

"Diff" represents the difference in percentages of item endorsement between patients and students.

Table 4. The 10 MMPI-2 Items that Discriminate Best Between Korean and American Psychiatric Samples

Item	Diff	KP	AP	Item Content
220	51.0	72.0	21.0	I never worry about my looks.
231	50.6	76.8	26.2	I like to be with a crowd who play jokes on one another.
558	45.4	78.0	32.6	The only place where I feel relaxed is in my own home.
297	40.1	31.7	71.8	My mother or father often made me obey even when I thought that it was unreasonable.
378	39.4	11.0	50.4	I get angry when my friends or family give me advice on how to live my life.
251	39.3	14.6	53.9	I have often felt that strangers were looking at me critically.
375	37.4	22.0	59.4	It makes me nervous when people ask me personal questions.
344	37.4	12.2	49.6	I enjoy gambling for small stakes.
244	37.3	91.5	54.2	Something exciting will almost always pull me out of the right things to talk about.
544	37.1	56.1	19.0	People tell me I have a problem with alcohol but I disagree.

Notes. KP: Korean psychiatric sample; AP: American psychiatric sample.

"Diff" represents the difference in percentages of item endorsement between Korean and American psychiatric patients.

Table 4 shows the 10 items that discriminated best between Korean and U.S. psychiatric patients. Between these two national clinical samples 53 items showed a 25% or greater difference in endorsement. The greatest item endorsement difference was found in item 220, indicating that more Korean patients reported that they never worry about their looks. The items that discriminate well between the two national clinical samples and that likely reflect a true cultural difference are items 297("My mother or father often made me obey even when I thought that it was unreasonable"), 378("I get angry when my friends or family give me advice on how to live my life"), and 375("It makes me nervous when people ask me personal questions"). Korean youngsters are brought up to obey their parents and to respect family values in a more family-oriented environment compared to American youngsters. Therefore, Korean youngsters are considered to be more obedient to their parents and used to being influenced by

family members. In addition, Korean people often ask personal questions in order to get close to a person, which may be considered to be impolite in American society.

Discussion

Consistent with Han's original study(1996), our college sample scored significantly higher than did American normative adult or college samples. It has been shown that other Asian college or adult samples also scored high when the U.S. norms were used(Cheong, Song, & Zhang, 1996; Tran, 1996). Cheong et al. (1996) explained that scale elevations on the MMPI clinical scales may indicate differences in cultural acceptance of certain behaviors or attitudes: that is the behaviors may be undesirable in the American culture but desirable, and therefore not abnormal, in the other culture. Thus, the high scores by normal Korean subjects

on scale Sc of the MMPI-2, for example, may be a reflection of Korean's unique belief system, "Shamanism," rather than an indication of schizophrenic features.

Unexpectedly, Korean psychiatric sample scored only slightly higher on the MMPI-2 scales than did Korean college sample, resulting partly in a small difference between Korean and American psychiatric samples. It may be possible that the range of reported behaviors among psychiatric sample is more restricted in Korea, and that the gap between normals and clinical samples is narrow. In other words, since Korean normals are prone to endorse psychopathological items, the differences on item(or scale) responses between patients and normals are more modest than they are in the American samples. It is also plausible that some of the MMPI-2 items do not discriminate well between normals and clinical samples in Korea as they do in the American samples. Moderate gap on clinical scale scores between normals and psychiatric samples were also reported in Cheong et al. (1996)'s study with Chinese and Hong Kong samples.

Scale Sc discriminated well between the patients with schizophrenia and those with depression. Although patients with depression scored the highest on Scale D, it did not discriminate well between the two diagnostic groups. Patients with schizophrenia scored as high as those with depression on scale D, indicating that depression may be underlying characteristics of all Korean psychiatric patients. Due to a nonaggregated nature, results from item-level analyses were less clear, making harder to draw any meaningful conclusions.

Although this study provides some invaluable

information on the performance of Korean psychiatric sample on the Korean MMPI-2, there are several limitations of the study. First, data from each diagnostic group in the American psychiatric sample were not available, prohibiting us from making cross-cultural comparisons on scale- and item-level, separately by each diagnostic group. Second, the limited sample size in each diagnostic group of the Korean psychiatric sample did not allow us to make meaningful comparisons across diagnostic groups on MMPI-2 performance. In future studies, predictive validity of individual clinical scales using a large sample should be examined. Third, although a college group is a part of adult population, and some effort has been made to narrow a group variance through using American college sample as a comparison group, rather than American adult sample, we acknowledge that our college sample may not be an ideal comparison group, which, in future studies, should be carefully selected through matching on important variables, such as SES, age, and marital status across normal and psychiatric samples. Last, external validity indicator(i.e., therapist's rating) should be included to examine criterion validity of the MMPI-2. Additional research is clearly called for at this point to explore further the utility of the MMPI-2 as a clinical tool. Until such explorations are undertaken, however, we believe the results of the study should be interpreted with caution.

References

Archer, R.P., Griffin, R., & Aiduk, R. (1995).

- MMPI-2 codes. *Journal of Personality Assessment*, 65, 391-407.
- Ben-Porath, Y.S., Butcher, J.N., & Graham, J.R. (1991). Contribution of the MMPI-2 content scales to the differential diagnosis of schizophrenia and major depression. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 3, 634-640.
- Berry, D.R., Baer, R.A., & Harris, M.J. (1991). Detection of malingering on the MMPI:A Meta-Analysis. *Clinical Psychology Review*, 11, 585-598.
- Baer, R.A., Wetter, M.W., & Berry, D.R. (1992). Detection of underreporting of psychopathology on the MMPI: A Meta-Analysis. *Clinical Psychology Review*, 12, 509-525.
- Butcher, J.N., Dahlstrom, W.G., Graham, J.R., Tellegen, A., & Kaemmer, B. (1989). *MMPI-2 (Minnesota Multiphasic Personality Inventory-2): Manual for administration and scoring*. Minneapolis, Minnesota: University of Minnesota Press.
- Butcher, J. N., Graham, J. R., Dahlstrom, W. D., & Bowman, E. (1990). The MMPI-2 with college sample. *Journal of Personality Assessment*, 54 (1&2), 1-15.
- Butcher, J. N., & Han, K. (1996). Methods of establishing cross-cultural equivalence. In J.N. Butcher (Ed.), *International adaptations of the MMPI-2: A handbook of research and clinical applications* (pp. 44-63). Minneapolis, Minnesota: University of Minnesota Press.
- Butcher, J.N. & Williams, C.L. (1992). *Essentials of MMPI-2 and MMPI-A interpretation*. Minneapolis, Minnesota: University of Minnesota Press.
- Cheong, F. M., Song, W., & Zhang, J. (1996). The Chinese MMPI-2: Research and applications in Hong Kong and the People's Republic of China. In J.N. Butcher(Ed.), *International adaptations of the MMPI-2: A handbook of research and clinical applications* (pp. 137-161). Minneapolis, Minnesota: University of Minnesota Press.
- Chung, B., Lee, C., & Chin, W. (1967). *MMPI Damyunjeok Insungkeomsa Shilshiyokang*. Seoul: Korean Testing Center.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ:Lawrence Erlbaum Associates, Inc.
- Graham, J.R. (1988). *Establishing validity of the revised form of the MMPI*. Symposium presentation at the 96th Annual Convention of the American Psychological Association, Atlanta, GA.
- Graham, J.R. (1990). *MMPI-2: Assessing personality and psychopathology*. New York: Oxford University Press.
- Greene, R.L. (1991). *The MMPI-2/MMPI: An interpretive manual*. Needham Heights, MA: Allyn & Bacon.
- Han, K. (1996). The Korean MMPI-2. In J.N. Butcher(Ed.), *International adaptations of the MMPI-2: A handbook of research and clinical applications* (pp. 88-136). Minneapolis, Minnesota: University of Minnesota Press.
- Kim, Y. (1982). *MMPIeui Jindan Byunbyul Kineung Bunseok*. Unpublished doctoral dissertation. Seoul: Korea University.
- Kim, Z., & Lee, C. (1980). MMPIae natananeun contect effect. *Shinkyung Cbeongsbin Eubak*,

- 19, 274-277.
- Libb, J.W., Murray, J., Thurstin, H., & Alarcon, R.D. (1992). Concordance of the MCMI-II, the MMPI, and Axis I discharge diagnosis in psychiatric inpatients. *Journal of Personality Assessment*, 58, 580-590.
- Morrison, T.L., Edwards, D.W., & Weissman, H.N. (1994). The MMPI and MMPI-2 as predictors of psychiatric diagnosis in an outpatient sample. *Journal of personality Assessment*, 62, 17-30.
- Pancoast, D.L., Archer, R.P., & Gordon, R.A. (1988). The MMPI and clinical diagnosis: A comparison of classification system outcomes with discharge diagnoses. *Journal of Personality Assessment*, 52, 81-90.
- Tran, B. N. (1996). Vietnamese Translation and adaptation of the MMPI-2. In J.N. Butcher (Ed.), *International adaptations of the MMPI-2: A handbook of research and clinical applications* (pp. 175-193). Minneapolis, Minnesota: University of Minnesota Press.
- Weed, N.C., Butcher, J.N., McKenna, T., & Ben-Porath, Y.S. (1992). New measures for assessing alcohol and drug abuse with the MMPI-2: The APS and AAS. *Journal of Personality Assessment*, 58, 389-404.
- Zalewski, C.S., & Gottesman, I.I. (1991). Human versus mean revisited:MMPI group data and psychiatric diagnosis. *Journal of Abnormal Psychology*, 100, 562-568.

Footnotes

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한국판 MMPI-2의 임상적 유용성

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본 연구는 한국판 MMPI-2의 임상적 유용성을 평가하기 위해 이루어졌다. 정신과 환자 120명과 대학생 167명의 MMPI-2 자료를 수집하여 척도점수와 문항반응빈도를 비교하였고, 미국 정신과 환자 집단의 MMPI-2 프로파일과도 비교하였다. 중국 및 홍콩 표집을 이용한 연구에서 보고된 바와 마찬가지로 정상인 집단의 임상점수가 상승되었고, 정상인 집단과 정신과 환자 집단간의 임상점수의 차이는 크지 않았다. 한국 대학생들의 MMPI-2 척도들의 평균점수는 미국 정상인 집단에 비해 상당히 상승된 것으로 나타났다; 한국 정신과 환자들의 임상척도 상에서의 평균점수는 한국 대학생들에 비해 약간 상승되었고, 결과적으로 한국과 미국 정신과 환자 집단간의 MMPI-2 평균점수의 차이는 미미한 것으로 나타났다. 문항반응에 대한 분석 결과는 상이한 집단간의 비교에 대한 유의미한 결론을 도출할 만큼 명백하지 못했다. 본 연구에서 얻어진 결과는 단정적으로 받아들여지기보다는 본 연구의 제한점을 고려하여 주의 깊게 해석되어야 할 것이며, 한국판 MMPI-2의 임상적 유용성에 대한 더 많은 연구들이 이루어져야 할 것이다.

주요어 : MMPI-2, 임상평가