

## Korean Adolescent Performance on the Korean Translation of the MMPI-A

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The purpose of this study was to provide initial information about cross-cultural performance on the Korean translation of the MMPI-A. A sample of Korean adolescents (105 boys and 142 girls) was compared with the American normative adolescent sample (805 boys and 815 girls) on scale scores and item endorsement frequencies. Mean Korean adolescent T-scores on the MMPI-A validity, clinical, and content scales all fell within one SD of the U.S. adolescent means. These T scores were much less elevated than those obtained by Korean college students using U.S. adult norms. Item endorsement differences between Korean adolescents and American adolescents were also much smaller than those between Korean college students and American college students. Gender-related item differences for Koreans were strikingly similar to those for Americans. Examination of the best discriminating items between the two cultures suggested both some degree of item inequivalence and bonafide cultural difference.

The original MMPI has been used for many years with both adolescents and adults. However, practitioners and researchers who attempted to use the MMPI with adolescents faced several problems. For example, the original MMPI item pool did not provide enough coverage of topics related to adolescent problems since it was developed for use with adults. The adult norms were also found to

be inappropriate for use with adolescents (Williams, Butcher, Ben-Porath, & Graham, 1992). In review of the studies regarding the use of the MMPI with adolescents, Archer (1987) pointed out that adolescents respond differently to the MMPI than adults in terms of item endorsement rates, scale elevations, and profile configurations. Recognition regarding the differences between adult and

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adolescent responses on the MMPI has led to the development of a revised version of the original MMPI for adolescents, the MMPI-A (Butcher et al., 1992). A systematic effort was made to improve the relevance of the instrument to adolescent life experiences. For example, the items considered to be inappropriate for adolescents were removed and a number of new adolescent specific items were included. Several new content scales were developed to provide the practitioner and researcher with more information regarding adolescent problems such as school problems, alienation, conduct problems, alcohol and drug usage, and acknowledgment of alcohol and drug problems. In addition, the new adolescent-specific norms were developed based on a geographically and ethnically diverse sample, which eliminated the confusion regarding the most appropriate norms for interpretation of adolescent MMPI results (Butcher et al., 1992)

Recently Cheung and Ho (1997) applied the Chinese version of the MMPI-A to adolescents in Hong Kong. They found that the Chinese adolescents' MMPI-A *T* scores based on the U.S. adolescent norms were elevated more than 1 SD on Scale 2 as well as on Scale L for girls and Scale A-lse (Adolescent Low Self-Esteem) for boys. However, none of the clinical scales exceeded a *T* score 65, the clinical cutoff score based on U.S. norms. Cheung and Ho suggested that these elevations might be due to cultural differences in item interpretation.

Building on the work of Han's (1996) translation of the MMPI-2 into Korean, we adapted the MMPI-A for use with the Korean adolescents. The purpose of the present study was to provide initial information about cross-cultural performance on this Korean translation of the MMPI-A. There are

many methods of establishing cross-cultural equivalence of an instrument, and it is important to employ as many methods as possible to thoroughly examine conceptual, functional, metric, and scalar equivalence of the two versions. In this paper, however, we report mainly on scale score comparisons and comparisons of item endorsement frequencies as an initial check of the integrity of MMPI-A translation.

## Method

### Participants

The Korean MMPI-A was administered to 254 Korean adolescents attending middle and high schools in Seoul. Data from seven participants were eliminated from the study for either 15 or more "Cannot Say" responses, or for a raw score of 25 or greater on the *F* scale. The final sample consisted of 247 students (105 boys and 142 girls), with a mean age of 15.8 years for the boys, and 15.9 for the girls. The students were predominantly in grades 8 through 11, similar to the distribution of the U.S. normative sample. The comparison group for the current study consisted of the 1620 American adolescents (805 boys and 815 girls) who participated in the U.S. MMPI-A Standardization Project (Butcher et al., 1992).

### Instrument

The Korean version of the MMPI-A was developed by Han and Lim by first adopting the items of the Korean MMPI-2 (Han, 1996) that are common to the MMPI-2 and MMPI-A, and then by each author independently translating into

Korean the items that are unique to the MMPI-A. Discrepancies between the two independent translations were solved by consensus. These items were then submitted to a bilingual student for back-translation into English. The original English MMPI-A items and the back-translated English items were then 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 led to a review and retranslation of several items.

## Results and Discussion

### Scale Level Comparisons

Table 1 presents means, standard deviations, and effect sizes for cross-cultural comparisons of each of the MMPI-A validity, clinical, content, and supplementary scales. T-scores were derived based on the U.S. adolescent normative sample. Mean Korean adolescent T-scores all fell within one SD of the U.S. adolescent means. T-scores ranged from 44 to 56 for both boys and girls. The scales showing the largest mean differences between Korean boys and American boys were D (56), LSE (55), Pt (55), Hs (55), and CYN (44). The scales showing the largest mean differences between Korean girls and American girls were D (56), L (55), Mf (54), CYN (44), and FAM (45). The absolute values of the effect sizes for group mean differences on these scales ranged from .43 to .65, in a range that Cohen (1988) described as a "medium effect size," with a range of overlapping area between the two population distributions 59% to 72%. For both boys and girls, the two scales

that showed the greatest mean T-score differences were D and CYN. Although it may be premature to attribute mean differences to true cultural difference, differences on these two scales suggest that Korean adolescents compared to their American counterparts tend to be slightly more pessimistic and self-effacing, and tend to hold less negative attitudes about those close to them.

Overall, mean profiles of Korean adolescents are very similar to that of American counterparts, which is quite an unexpected finding. In a previous study (Han, 1996), a Korean college sample showed highly elevated mean scale profiles when plotted against American adult norm. For Korean male college students, the highest scores were on MMPI-2 scales Sc (68), F (65), D (64), Pt (64), and Ma (63). Means on scales F (71), Sc (71) D (68), Pt (66), Hs (62), and Ma (62) were the highest for Korean female college students. This disparity between these MMPI-2 results and the results of the present study are particularly surprising in that the two instruments (MMPI-A and MMPI-2) share so many items in common. However, different degrees of scale elevation between adolescent and college students were also found in studies with Chinese samples. While Hong Kong adolescents had only one clinical scale score with one SD above the American mean (D), Hong Kong college students scored one SD above the American mean on four scales (Hs, D, Pt, and Sc) (Cheng & Ho, 1997; Cheng, Song, & Zhang, 1996). However, in both the Chinese and Korean studies, differences from the American might have been inflated because the college samples were plotted against American adult norms, rather than against American college norms, which have higher mean scale scores than the adult norms.

Table 1. Korean Adolescent Sample Descriptive Statistics Compared to American Adolescent Norms: Validity, Clinical, Content, and Supplementary Scales

Scale	Males ( <i>N</i> = 105)			Females ( <i>N</i> = 142)		
	M	SD	d	M	SD	d
L	53.03	10.99	.30	55.41	11.20	.53
F	51.34	6.95	.14	50.17	7.30	.02
F1	49.39	6.57	-.07	49.04	7.94	-.10
F2	52.90	8.87	.28	50.99	7.79	.11
K	50.44	11.19	.04	52.20	8.67	.23
VRIN	52.31	8.42	.24	52.39	7.80	.25
TRIN	59.35	6.55	.32	59.52	7.38	.28
Hs	54.68	10.52	.47	52.89	9.36	.30
D	56.30	10.04	.65	56.40	10.95	.65
Hy	53.92	8.43	.40	50.82	10.53	.08
Pd	53.61	10.30	.37	49.77	9.11	-.01
Mf	49.30	8.50	-.07	54.21	8.96	.43
Pa	50.75	10.13	.08	47.01	9.01	-.30
Pt	54.92	12.34	.48	48.76	9.23	-.12
Sc	53.17	10.81	.32	48.35	8.41	-.16
Ma	53.25	10.24	.33	48.63	9.62	-.12
Si	53.78	10.77	.37	52.59	9.39	.25
ANX	51.17	10.33	.13	48.70	9.72	-.14
OBS	53.37	10.64	.35	50.28	9.49	.05
DEP	53.23	10.51	.32	49.85	9.71	-.01
HEA	51.54	8.71	.16	50.35	7.81	.03
BIZ	52.12	8.96	.21	48.49	7.89	-.17
ANG	51.67	11.56	.16	49.77	10.01	.00
CYN	44.08	7.15	-.58	44.10	5.41	-.62
ALN	50.44	10.44	.04	48.22	10.80	-.17
CON	47.79	10.21	-.21	48.21	9.14	-.19
LSE	55.10	14.06	.49	51.38	10.08	.14
LAS	51.76	10.09	.18	52.46	9.33	.26
SOD	54.14	11.87	.39	53.21	10.63	.34
FAM	48.90	9.65	-.12	45.10	8.39	-.49
SCH	52.47	10.78	.24	51.31	9.03	.12
TRT	50.34	11.49	.04	49.68	9.17	-.05
A	52.93	10.33	.29	49.67	9.14	-.04
R	51.90	8.81	.20	53.56	10.49	.36
MAC-R	51.41	9.42	.13	52.30	9.78	.23
ACK	49.93	8.74	.01	47.56	7.43	-.26
PRO	50.35	10.66	.03	47.56	8.61	-.25
IMM	52.16	9.52	.22	52.04	8.57	.21

Notes: "d" represents the effect size.

### Item Level Comparisons

Item level comparisons were conducted in two ways. First, intercorrelations of item true endorsement percentages between Korean and the U.S. were compared. Second, items that best discriminated Koreans from Americans were identified. These two item-level analyses were also conducted across genders within cultures.

Intercorrelations of true item endorsement percentages were .79 between Korean boys and American boys and .84 between Korean girls and American girls. Between the Korean and American male groups 44 items showed a 25% or greater difference in endorsement, and between female groups 59 items showed such a difference. Thirty-one of these items replicated the 25% or greater endorsement difference across genders. MMPI-A scales that contain the largest numbers of those items are CYN (6 items), Hy (6), Pt (5), and Ma (6). As expected from the scale-level comparisons, item endorsement patterns between the two national adolescent groups are much more similar than those found previously between two national college groups. The correlations between endorsement percentages for Korean and American college sample (Han, 1996) are .74 for males and .70 for females. With the same criterion of 25% or greater difference in true item endorsement percentage, 125 items between two national male college students and 137 between two national female college students were identified.

Table 2 shows the 10 items that discriminate best between the Korean and American samples. For both genders, the item showing the largest true endorsement difference is item 194, with Korean adolescents indicating less frequently that "some of my family have habits that bother and annoy

me very much."<sup>1</sup> This large difference was also found in the comparisons between Korean and American college students (Han, 1996), to a lesser degree. These cross-cultural differences between Korean and American populations may be meaningfully viewed in reference to American students' "struggles with individualization from the family" (Archer, 1997, p. 8).

Two additional items (items 310 and 417) discriminate well between the two cultures for both boys and girls. A majority of Korean adolescents (75% of boys and 81% of girls) report that they have to stop and think before they act in even small matters,<sup>1</sup> an item that also appeared in the Korean college sample as one of the 10 best items discriminating Koreans from Americans. Sixty-two percent of boys and 65% of girls believe that "ghosts or spirits can influence people for good or bad,"<sup>1</sup> partly reflecting the Shamanistic influence in Koreans' unique philosophical and value system (Han, 1996). It is interesting to note that adolescent samples in both nations endorsed the item more frequently than did college samples (62% of Korean adolescent boys versus 52% of Korean college males; 26% of American adolescent boys versus 7% of American college males, and 29% of American adolescent girls versus 8% of American college females). It may be possible to interpret the differences between the two age groups in both cultures as a reflection of magical thinking or immature cognitive functioning in adolescents' thought and belief systems.

An item that discriminates particularly well between the two male adolescent samples, and that likely reflect a true cultural difference is item 366 ("I have gotten many beatings.")<sup>1</sup> It is not uncommon for Korean children to receive physical punishment from parents or school teachers, and

Table 2. The 10 MMPI-A Items that Discriminate Best Between Korean and American Adolescents

Males					
Item	Diff	AM	KM	Item Content <sup>1</sup>	
194	48	66.6	19.0	Some of my family have habits that bother and annoy me very much.	
366	41	16.3	57.1	I have gotten many beatings.	
85	38	52.1	90.5	My hardest battles are with myself.	
237	37	24.0	61.0	I drink an unusually large amount of water everyday.	
310	37	38.5	75.2	I usually have to stop and think before I act in even small matters.	
121	37	34.6	71.2	Criticism or scolding hurts me terribly.	
70	36	23.1	59.0	I am certainly lacking in self-confidence.	
417	36	26.2	61.9	Ghosts or spirits can influence people for good or bad.	
91	35	81.8	46.7	I am happy most of the time.	
199	35	24.3	59.0	I have been inspired to a program of life based on duty which I have since carefully followed.	
Females					
Item	Diff	AF	KF	Item Content <sup>1</sup>	
194	52	79.2	27.5	Some of my family have habits that bother and annoy me very much.	
226	48	65.1	16.9	Once a week or oftener I become very excited.	
217	48	31.9	79.6	I like to be with a crowd who play jokes on one another.	
277	46	74.4	28.2	My mother or father often makes me obey even when I think it is unreasonable.	
105	41	87.9	47.2	I seem to be about capable and smart as most others around me.	
284	39	75.4	36.6	Sometimes I become so excited that I find it hard to get to sleep.	
143	38	12.8	50.7	The top of my head sometimes feels tender.	
212	38	66.7	28.9	Sometimes without any reason or even when things are going wrong I feel excitedly happy, "on top of the world."	
310	36	45.0	81.0	I usually have to stop and think before I act in even small matters.	
417	36	29.1	64.8	Ghosts or spirits can influence people for good or bad.	

Notes: AM: American Males; KM: Korean Males; AF: American Females; KF: Korean Females. "Diff" represents the difference between percentages of item endorsement.

its frequency is higher for boys (57% of item endorsement) than for girls (44% of item endorsement). Although Koreans' attitude toward physical punishment may have changed some recently, the endorsement difference between these national samples reflects the persistence of the phenomenon. Three items discriminates well between Korean girls and American (226, 284, and 212) indicate that American girls are more likely than Korean girls to report excitability.

There are several of these best discriminating

items (e.g., 237 and 143) whose source of endorsement differences between the cultures is unclear. Half of Korean female adolescents endorsed item 143, "The top of my head sometimes feels tender"<sup>1</sup> resulting in a 38% difference from their American counterparts. Large difference on this item also existed between Korean and American college female groups (35% of Korean and 7% of American, Han, 1996). Another item that shows a surprising difference is, "I drink an unusually large amount of water everyday."<sup>1</sup> (61%

of Korean Korean boys and 49% of Korean girls compared to 24% of and 20% of their American counterparts). These large endorsement differences may suggest error in item translation. This item was backtranslated as "I drink a considerable amount of water everyday," with no emphasis on an "unusually large" amount. On the other hand, water is still the most popular drink in Korean, which may account for these differences in part.

Item-level comparisons were also made across genders within cultures. Intercorrelations of true

item endorsement percentages were .92 between Korean boys and girls and .91 between American boys and girls, indicating greater cross-gender, within culture similarity than the within-gender, cross-cultural comparisons. Between the Korean males and females 15 items showed a 25% or greater difference in endorsement, and between American samples 13 items showed such a difference. Gender-related item differences for Koreans were strikingly consistent with those for Americans; six of the ten most gender discriminat-

Table 3. The 10 Items that Discriminate Best Between Males and Females

Americans				
Item	Diff	AM	AF	Item Content <sup>1</sup>
61	59	19.0	77.9	I enjoy reading love stories.
131	54	19.3	73.5	I keep a diary.
59	51	9.3	60.6	I have often wished I were a girl. (Or if you are a girl) I have never been sorry that I am a girl.
139	39	16.9	55.5	I cry easily.
254	38	53.5	16.0	There never was a time in my life when I liked to play with dolls.
21	34	30.2	63.8	At times I have fits of laughing and crying that I cannot control.
64	32	37.6	70.1	I like poetry.
1	30	34.5	4.0	I like mechanics magazines.
114	28	15.2	43.2	I like collecting flowers or growing house plants.
121	27	34.6	61.4	Criticism or scolding hurts me terribly.
Koreans				
Item	Diff	KM	KF	Item Content <sup>1</sup>
1	50	53.3	3.5	I like mechanics magazines.
241	38	58.7	20.6	If I were reporter I would very much like to report sporting news.
407	34	21.9	55.6	The person to whom I have been most attached and whom I have most admired is a woman (mother, sister, aunt, or other woman).
114	31	22.9	54.2	I like collecting flowers or growing house plants.
59	31	25.7	56.3	I have often wished I were a girl. (Or if you are a girl) I have never been sorry that I am a girl.
254	30	38.1	7.7	There never was a time in my life when I liked to play with dolls.
64	29	27.6	57	I like poetry.
190	29	35.2	6.3	I very much like hunting.
131	28	16.3	44.4	I keep a diary.
403	28	52.4	24.6	I like to read about science.

Notes: AM: American Males; KM: Korean Males; AF: American Females; KF: Korean Females. "Diff" represents the difference between percentages of item endorsement.

ing items for Koreans are among the top ten for Americans (See Table 3).

In conclusion, results from scale-level and item-level comparisons showed that differences between Korean adolescents and American adolescents appeared to be smaller than those between Korean college students and American college students. These findings may reflect an increasing Westernization of Korean society as well as maturational effect on the adoption of cultural values. A finding that gender differences in MMPI-A item endorsement were remarkably similar between the two cultures could be investigated further in the context of the effect of globalization on gender role. Although cross-cultural differences in item endorsement may possibly reflect to some degree a lack of equivalence between the American MMPI-A and the Korean version of the MMPI-A, they could be also considered as bonafide cultural differences. Further validation studies are needed to demonstrate item equivalence of the Korean MMPI-A and to separate bonafide cultural difference from item inequivalence.

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## Footnotes

- <sup>1</sup> Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A). Copyright the Regents of the University of Minnesota 1942, 1943 (renewed 1970), 1992. Reproduced by permission of the publisher. "Minnesota Multiphasic Personality Inventory-Adolescent" and "MMPI-A" are trademarks owned by the University of Minnesota.

## MMPI-A (청소년용 미네소타 다면적 인성검사)에 나타난 한국 청소년들의 특징

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본 연구는 MMPI-A (청소년용 미네소타 다면적 인성검사)를 한국어로 번역하고, 비교문화적 관점에서 그 특징을 알아보고자 하였다. 청소년 246명(남자 105명, 여자 142명)에게 한국판 MMPI-A를 실시하여 얻은 결과를 미국 MMPI-A 표준화 집단(남자 805명, 여자 815명)의 자료와 척도 점수, 문항반응 빈도를 중심으로 비교하였다. MMPI-A 타당도 척도와 임상척도, 그리고 내용 척도상에서 한국 청소년들의 평균 T점수는 미국 청소년들의 평균 T점수와 1표준편차이내의 차이를 나타내었고, 이는 두 집단간의 MMPI-A 프로파일이 매우 흡사함을 시사하였다. 한국 청소년들과 미국 청소년들간의 문항반응상의 차이는 그리 크지 않았으며, 한국 청소년들의 남녀간의 문항반응 차이는 미국 남녀 청소년들간의 차이와 매우 비슷한 양상을 보였다. 두 문화간의 MMPI-A 반응을 가장 변별해주는 문항들의 검토 결과, 문항반응상의 차이가 영문 MMPI-A와 한국어 번역판간의 문항 동질성의 결여 또는 문화적 차이를 어느 정도 반영하는 것으로 시사되었다.