Evaluating the Translation Adequacy of a Filipino MMPI: A Reliability Study

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Abstract

This study evaluates the translation adequacy of a Filipino MMPI by employing multiple measures of instrument reliability. One hundred forty three subjects were administered both versions of the MMPI within a one-week interval utilizing a counterbalanced test-retest procedure. An adequate Filipino translation is positively indicated. Item endorsement stability was achieved where 88 percent of 566 items registered significant chi-square values ($p < .05$). Scale membership of items showed minimal translation modification warranted for 25 non-significant items. K and non K-corrected profile analyses show similarities in slope and configuration with the exception of scale Hs. Greater interversion profile similarity was noted between male mean profiles than that of females. The Filipino version likewise benefits from K-correction as a means of achieving greater profile similarity with the English K-corrected profile. High point code type consistency was achieved for two-thirds of profiles with either the same high points or one scale shift among individually paired English and Filipino protocols. The relationship between MMPI scales and sex suggests a preliminary validation of the Mf scale where sex differences and role identification is achieved by both versions to a similar degree. Pending translation modification of inequivalent Filipino MMPI items, findings sufficiently reinforce the continued use of the Filipino version provided interpretations are made with consideration of the inherent limitations posed by each MMPI scale.

Introduction

For roughly 30 years now, the MMPI in the Philippines has enjoyed wide application for clinical diagnostic, educational and industrial selection purposes. Despite this, local research evaluating its cross-cultural utility has been minimal. In addition, the inability of a large segment of psychiatric patients and job applicants to thoroughly understand the English MMPI prompted practitioners to translate the instrument and immediately apply local versions to various groups without the benefit of formal reliability and validation studies. It has therefore become customary to score and profile MMPI protocols of local versions using white, middle-class rural Minnesota normative data. Because crucial decisions are often made on their basis, such practices easily fail to meet minimum psychometric standards and may be regarded as *worse* than no test at *all* (Lanyon & Goldstein, 1971; Butcher & Pancheri, 1976).

Local literature is replete with largely critical reviews on the dearth of research in the field of psychological testing, particularly the concern over the uncritical application of packaged western test instruments (Lazo, 1974, 1977; Lazo, de Jesus & Edralin-Tiglao, 1976; Ramos, 1977; Santos, 1978; Carlota, 1980; Vasquez-de Jesus, 1981). Hence the urgent need for empirical test validation of the translated versions of the MMPI, of which there are reportedly an undetermined number including, but not limited to, Tagalog, Ilocano, Bontoc, and Visayan versions (Alcuaz-Reyes, 1981).

Successful transplanting and cross-cultural test adaptation also require meticulous translation procedures to ensure equivalence between versions. Only once this is completed can the practitioner proceed with the validation and restandardization of instruments such as the MMPI. Previous research that investigated translated tests include the Sacks Sentence Completion Test (Tan, 1968), the Association Adjustment Inventory (Gavino, 1968), and the Zacks Personality Inventory (Enriquez, 1971).

The Filipino MMPI Version

In the early '70s, C. Diy reports having developed a Filipino version of the MMPI by employing the standard double-back translation method. The translation procedure was not documented at that time and no reliability studies establishing evidence of translation adequacy have been reported.

The Diy translation includes efforts to modify item content apparently to increase cultural sensitivity to the local population. English items that make reference to singularly American historical facts, traditions and literary figures are substituted with parallel culture-relevant figures or situations. Idiomatic expressions are translated in such as way as to convey the same meaning rather than through the direct translation of item content.

Statement of the Problem

This study was designed to determine whether the Filipino translation of the English MMPI is, in fact, an equivalent version, the extent of this equivalence and the implications for use of the local version. Specifically, research procedures are intended to investigate the following: (1) is stimulus identity evidenced at the item level across English and Filipino versions?; (2) what are the implications of item endorsement results on the Validity and Clinical Scales?; (3) how do the test-retest correlations of English and Filipino MMPI scale scores perform against English-English MMPI reliability standards?; (4) do English and Filipino versions meet standard psychometric criteria and qualify them as parallel tests?; (5) how do mean profile configurations of the English MMPI compare with Filipino MMPI profiles including K and non K-corrected profiles and high point code types?; and (6) what is the relationship between sex and each of the Validity and Clinical Scales?

Statement of the Hypotheses

If the Filipino version of the MMPI was adequately translated, it may be expected to reliably yield item, scale and profile characteristics comparable to those of the English MMPI. As such, the following hypotheses are forwarded: (1) stimulus identity would be indicated by statistically significant item endorsement consistently upon English and Filipino MMPI re-resting; (2) the Filipino version measur-

ing Validity and Clinical MMPI scales are also consistent with English scale counterparts; (3) no significant differences are expected between test-retest correlation coefficients and independent English-English reliability standards; (4) non-significant means, variances and intercorrelations should be anticipated, hence qualifying both versions as parallel forms; and (5) mean profile configurations and high point code types are consistent across versions and the effects of K-correction factor not result in significant differences between profiles. Finally, it is hypothesized that a relationship can be established between sex and MMPI scales.

Review of Related Literature

A study that investigated translation equivalence indices (Lazo, 1974) involved the quantitative analysis of monolingual and bilingual meaning errors on the Mf and Sc scales on an experimental Galvez (1971) MMPI translation. Endorsement differences failed to result in significance for either scale leading to conclusions of inequivalence of the Galvez version. Another study (Clark, 1982) undertaken for a Japanese translation consolidated an MMPI based on the four most widely used local versions and successfully established reliability from one-week test-retest correlations. The equivalent Hebrew version (Gur, 1974; Butcher & Gur, 1976) yielded reliability indices resulting from item response consistencies and code type analyses on a bilingual group (N=28) across English and Hebrew versions. Similar results are reported in Butcher and Pancheri's (1976) cross-national MMPI compilation.

Method

This investigation was structured according to the bilingual research technique (Rosen, 1958 cited in Butcher, 1979) for evaluating translation adequacy. It employs a test-retest procedure for obtaining measures of item endorsement consistency and scale and profile comparisons across versions. This study is also an expanded replication of the methodological approach to establish the reliability of the Hebrew MMPI version (Butcher & Gur, 1974).

Sample. This study involved a sample of 143 University upper classmen with a mean age of 19, of which 73 were male and 70 female. At least average intelligence may be assumed for this sample

given the university's high academic selection standards and rigorous admission procedures. Language proficiency was likewise built into the sample since subjects had already taken and passed required courses in English and Filipino. Half of the sample were enrolled in a class with a medium of instruction in Filipino, half in English.

Difficulties were noted with respect to examinee cooperation and fatigue due to the lengthy nature of the MMPI, in addition to the unenviable task of taking the inventory twice within a one-week interval which subsequently resulted in diminished variations in sample size.

In all, only a fourth of all subjects completed both versions and yielded valid profiles. An additional 50 subjects were included for item endorsements but could not be used for correlational analyses due to their failure to complete one or the other version of the MMPI.

Procedure. Using the MMPI Group Form, half of the sample accomplished the English MMPI while the other half took the translated version. The same hour a week later, the same subjects again took the test with the order counterbalanced and test conditions held constant.

Data Analysis. Establishing translation equivalence involved relatively simple to more complex analysis at different levels. Item level analysis focused on determining response consistency through endorsement percentages for each item per subject across the two versions of the MMPI. Chi-square values established significance for percentage levels at $p<.05$. Scale level analysis included (a) determining the extent to which item endorsement consistencies impact on scales to which these items belong; (b) scale raw scores on Filipino and English versions summed and correlated using z transformations. Mean intercorrelations per subject yielded a coefficient that would define the overall relationship between both versions; (c) Pearson's product moment correlation matrix obtained for each of the 13 scales from test-retest across versions were analyzed according to the multi-trait multi-method approach (Campbell & Fiske, 1959) and included tests of significance for scale and interscale correlations; (d) Tests of significance using Fisher's Z comparisons of English-Filipino reliability coefficients with English-English MMPI reliability standards. Group data analysis included (a) establishing equal or non-significant differences between raw scale score group means (t-tests) and variances (F-ratio) to meet parallel test criteria; (b) examination of mean differences and pronounced trends in profile configurations of non-k

corrected T-scores of English male and female samples; (c) comparisons between k-corrected profiles of English and Filipino protocols as well as in contrast with non-k corrected profiles; (d) comparisons of consistency in three-high point code types for both k and non-k corrected profiles on both language versions on both individual and group data level. MMPI Scale Relationships with Sex. Correlations were obtained between MMPI Validity and Clinical Scales and subjects' gender since equivalence implies that scales across versions should correlate with sex to the same degree.

Results

Based on multiple measures of translation equivalence, the Filipino version of the MMPI was found to compare favorably with its original English form.

Item Level Analysis

Based on item sample from 30 to 89 subjects, the resulting item endorsement consistencies registered impressively. Table 1 shows the distribution of items with a range of 64 and a modal percentage falling between 80 to 84 percent. Corresponding variations in sample size are presented in averages of subjects for individual items.

Chi-square values computed for each item endorsement percentage evidenced substantial overall endorsement stability. Of the 566 items, 496 (or 88 percent) registered significance at $p<.05$. Moreover, only six items show percentages that fall below chance where two of these six are significantly low at $p<.05$.

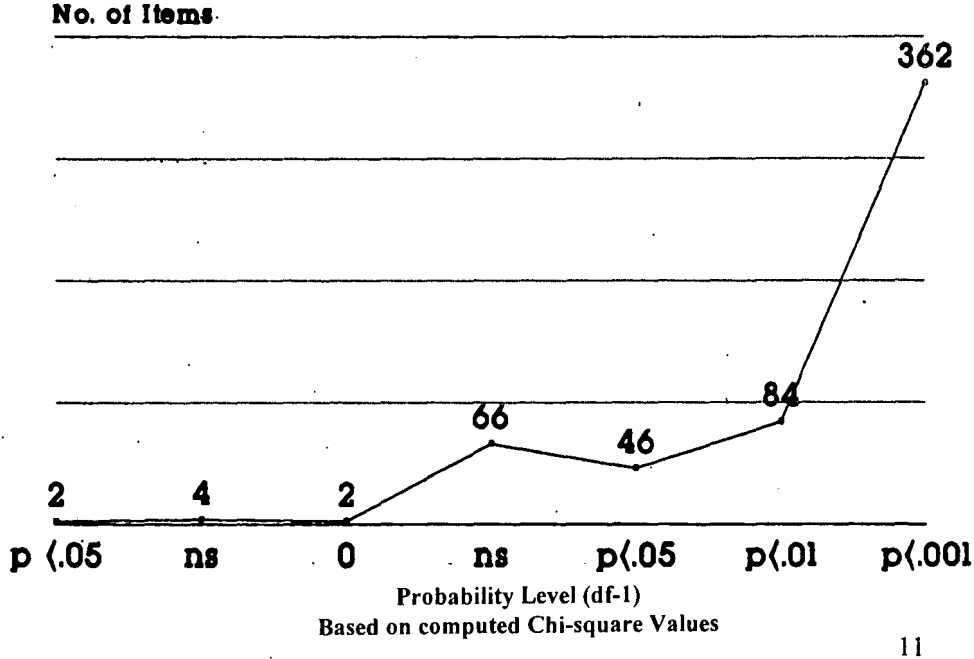
In all, the asymmetrical distribution of items according to chi-square levels of significance is shown on Figure 1. Skewed negatively, the bulk of items are significant even at $p<.001$, rendering overall endorsement consistency between the English and translated items.

Table 1. Frequency distribution of Consistent Item Endorsement Percentages from a one-week English-Filipino MMPI Test-Retest with corresponding sample size variations for 566 items.

Range of Endorsement Percentages	No. of Items*	Average n
95-99	11	72
90-94	49	72
85-89	66	69
80-84	112	65
75-79	102	57
70-74	89	6
65-69	73	55
60-64	25	51
55-59	25	42
50-54	8	37
45-49	2	32
40-44	1	32
35-39	3	70

**Cannot Say (?) or unanswered items on either one version excluded from tabulations.*

Figure 1. Distribution of Item Endorsement Percentages of 566 items for English-Filipino re-testing according to obtained Chi-square levels of significance.



Scale Level Analysis. Items classified according to the scales to which they belong show that the 13 scales of the Filipino MMPI present stimuli comparable to those that comprise the English scales. Based on scale membership of items, Validity scales L, F, and K perform reliability across versions. Similarly, clinical scales Hs, D, Hy, Pd, and Mf yield no more than three inconsistently endorsed items per scale significant at $p<.05$. Table 2 shows the extent of item endorsement consistency for each of the scales.

English-Filipino Scale Correlations. Correlations were computed from a sample of 39 subjects which combines 23 males and 16 females for this level of analysis. Each of the 39 subjects' Filipino scale scores were compared with their English scale raw scores using Z transformations of individual subject's English and Filipino correlated summed scores. The resulting correlations are high ranging with a mean of .91 and a standard deviation of .19. Findings may again be cited to favor the translated version's reliability.

A matrix of English and Filipino Pearson's product moment correlations obtained from each of the 13 scale raw scores given on Table 3 indicate that all scales across separate administrations of both versions correlate significantly at $p<.05$ (df=40). Moderate to high ranging correlations show a medium correlation of .69.

English-Filipino Scale Intercorrelations. A Multi-trait Multi-Language Square Matrix Analysis of intercorrelations by scale specifies a validity diagonal as shown on Table 3 consisting of mono-trait (same scale) multi-method (Filipino-English) values. Convergent validity represented by the agreement of independent approaches (i.e., language versions) is indicated as well, since correlations along this diagonal show values significantly larger than zero. Both translation adequacy and discriminant validity are evidenced to a moderate to high degree on six Filipino scales namely L (.69), K (.81), Hy (.55), Mf(.80), Ma (.71) and Si (.82). However, the degree to which Filipino-English scale intercorrelations evidence both translation adequacy and discriminant validity is minimal for F, Hs, Pd, and Pa.

Table 2. Mean Item Endorsement Percentages by Scale with Corresponding Variations in Sample Size and Item Performance on Separate English-Filipino MMPI Administrations.

Scale	Mean Endorsement (%)	Range of Sample Size Average n	NO OF ITEMS that comprise scale (%)	with significantly high endorsement	with non-significant or significantly low endorsement (%)
Lie (L)	82	85	15	15	none
Infrequency	86	84	64	64	none
K	75	70	30	28	171, 397
Hypochondriasis (Hs)	77	85	33	32	103
Depression	77	85	60	59	13a
Hysteria (Hy)	76	85	60	59	103
Psychopathic (Pd) Deviate	77	83	50	48	91, 171
Masculinity-Feminity (Mf)	78	83	60	58	254, 279
Paranoia (Pa)	76	68	40	36	313, 319, 327, 338
Psycosthenia (Pt)	76	65	48	46	353, 356
Schizophrenia (Sc)	79	69	78	75	103, 279, 345, 356
Mania (Ma)	74	82	46	43	13a, 171, 181a
Social Introversion (Si)	73	57	70	57	91, 171, 254, 353, 371, 436, 450, 455, 473, 481, 505, 549, 564

Inconsistently endorsed items significant at $p<.05$.

Comparison Between English-Filipino and English-English Scale Correlations. Table 4 presents correlations between the Filipino-English re-test and Cottle's (1960) English-English study of 100 subjects using a similar one-week retest interval. Fisher's Z transformations of these two sets of correlations reveal that nine out of 12 Validity and Clinical scales are not significantly different from their English-English retest reliability coefficients. Another comparison with Butcher's 1979 composite of correlations from nine English-English estimates of MMPI re-test reliability show correlations to be equal to those of English-Filipino results. Combined interversion correlations suggest that scales Hs and Pd remain to be the two scales that compare least favorably with the maximum standards provided by English-English retest scale correlations.

Table 3. Pearson Product-Moment Correlations between English and Filipino Scale Raw Scores (N=39).

FILIPINO	L	F	K	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma	Si
ENGLISH													
L	(.69)	−.02	.43	−.32	−.03	.06	−.15	−.06	−.13	−.57	−.41	.30	−.21
F	.06	(.63)	−.03	.41	.29	.40	.44	−.12	.28	.19	.36	.15	.09
K	.39	−.22	(.81)	.38	.16	.13	.29	.10	.22	.74	.61	.37	.37
Hs	−.09	.26	−.04	(.38)	.19	.34	.00	.26	.22	.17	.17	.10	.03
D	.05	.36	.14	.23	(.61)	.34	.17	.23	.13	.14	.21	−.32	.40
Hy	.26	.21	.41	.18	.24	(.55)	.18	.22	.17	−.17	−.03	−.12	−.19
Pd	.05	.52	−.06	.34	.23	.39	(.57)	.08	.29	.19	.38	.08	−.04
Mf	.22	.07	−.03	.30	.19	.37	.18	(.80)	.25	.18	.21	.07	.05
Pa	−.13	.38	−.27	[.55]	.34	.41	.40	.08	(.49)	.47	.54	.35	.20
Pt	−.26	.53	−.44	[.61]	.51	.32	.57	.09	.42	(.78)	.75	.26	.49
Sc	−.24	[.66]	−.44	[.67]	.44	.40	[.65]	.16	[.53]	.68	(.79)	.34	.36
Ma	−.13	.40	−.39	.36	−.13	.14	[.60]	−.08	.36	.44	.51	(.71)	−.14
Si	−.12	.42	−.14	.25	.59	.03	.26	.16	.23	.42	.36	−.13	(.82)

◯ – referred to as the validity diagonal or the principal diagonal;

□ – correlations that exceed values on the principal diagonal

Group Level Analysis

Group Scale Means and Variances. Again utilizing the sample of 39 subjects that completed both English and Filipino versions, raw scale score means and variances are shown on Table 5. Measures of central tendency reveal that eight out of the 13 scale means satisfy the psychometric criteria for equivalence. The K scale registers the largest mean difference at $p<.001$, indicating a greater tendency towards subtle defensiveness on the Filipino MMPI.

Variances suggest that scales 1 and 3 on the Filipino version yield significantly higher deviations than those on the English MMPI ($p<.05$, two-tailed). Based on standard deviations alone, eleven out of the 13 scales meet the psychometric criteria for equivalence.

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Table 4. Comparisons of Test-Retest Correlations between Filipino Bilinguals and English Subjects by Scale.

Scale	English Filipino (N=39)	English-[a] English (N=100)	Fisher's Z	Composite of Nine English-English Studies
L	.69	.46	−1.77	.61
F	.63	.75	−1.22	.71
K	.81	.76	−0.63	.69
HS	.38	.81	3.70***	.59
D	.61	.66	0.43	.74
Hy	.55	.72	1.45	.62
Po	.57	.80	2.31	.71
Mf	.80	.91	2.24	.80
Pa	.48	.56	0.52	.61
Pt	.78	.90	2.22*	.77
Sc	.79	.86	1.11	.63
Ma	.72	.76	0.51	.70
Si	.82	0.00	–	0.00

* Cottle's (1960) one-week re-test correlation using card and group forms combined (Hathaway, The Manual, 1979).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5. Raw Score Means and Variances for English and Filipino MMPI Scales for Males and Females Combined (N = 39).

Scale	Means		t	S.D.		F
	Filipino	English		Filipino	English	
L	5.28	4.92	1.10	2.37	2.37	1.33
F	8.92	9.49	−.70	6.03	5.56	1.18
K	14.36	12.54	3.79***	4.80	4.81	1.00
Hs	8.26	7.44	.74	7.18	4.64	2.36**
D	22.21	20.13	2.96**	5.06	4.84	1.09
Hy	20.79	20.72	.09	6.07	4.38	1.92*
Pd	16.49	17.38	−1.13	5.68	4.89	1.35
Mf	29.28	30.79	−2.61*	5.33	5.89	1.23
Pa	11.79	12.87	−1.60	4.54	3.57	1.62
Pt	16.21	18.77	−2.85**	7.69	8.82	1.32
Sc	19.69	22.49	−1.44	10.90	11.40	1.09
Ma	21.69	22.49	−1.25	5.18	5.36	1.07
Si	24.03	26.85	−3.12	9.24	9.17	1.06

* $p < .05$. ** $p < .01$. *** $p < .001$.

Non-K Corrected Mean Profiles. Non-K corrected mean raw scores plotted against T-score conversion tables of the MMPI Manual (Hathaway & Mckinley, 1967) for 23 Males and 16 female subjects yield two separate profiles presented in Figures 2 and 3. Mean profiles generally fall within the 50-70T score range and appear sufficiently typical of normal subjects responding to the MMPI on both language versions for male and female group.

Validity Scales. Both male and female samples tended to score higher on the Filipino K scale although the latter group also registered higher L scale scores suggesting the likelihood of a more defensive stance among subjects responding to the local version.

Clinical Scales. In general, males tended to score higher than females. With the exception of scale Si at about 50T, English and Filipino male T-scale score range differences are negligible (56T to 68 and 69T). Female profiles tend to show more variability on the English version which have wide ranging scores from 51T to 68T, but with high points that are identical on both versions. Females on the Filipino version also tend to score higher on the neurotic triadö (Hs, D, Hy). Low points on their profiles are entirely changed when English and Filipino profiles are contrasted.

For both males and females, a peak on D on the Filipino version is evident. Since this scale has been found to be fairly unstable due to its sensitivity to examinee mood fluctuations (Carson, 1969), the counterbalanced administration of both versions should have effectively controlled for this instability. Similarity across both versions for male and female profiles also includes upward slopes on Pt and Sc peaking on Ma at about 68T and sloping downward to Si within the 50-53T score range Despite profile similarities for the scales, mean scale T-scores are consistently higher on the English MMPI. This suggests therefore that the Filipino version may tend to underestimate these scales when the K-correction weights are not applied for profiling. Hence, non-K corrected mean profiles of the English and Filipino versions tend to show greater reliability across versions for males rather than for female subjects.

K-Corrected Mean Profiles. Findings of highly significant differences between English and Filipino scale K mean raw scores have implications for resulting MMPI profiles because this scale serves as a correction variable for scales Hs, Pd, Pt, Sc and Ma. As a suppressor

Figure 2. English and Filipino Non-K corrected Mean profiles of male subsample (n=23).

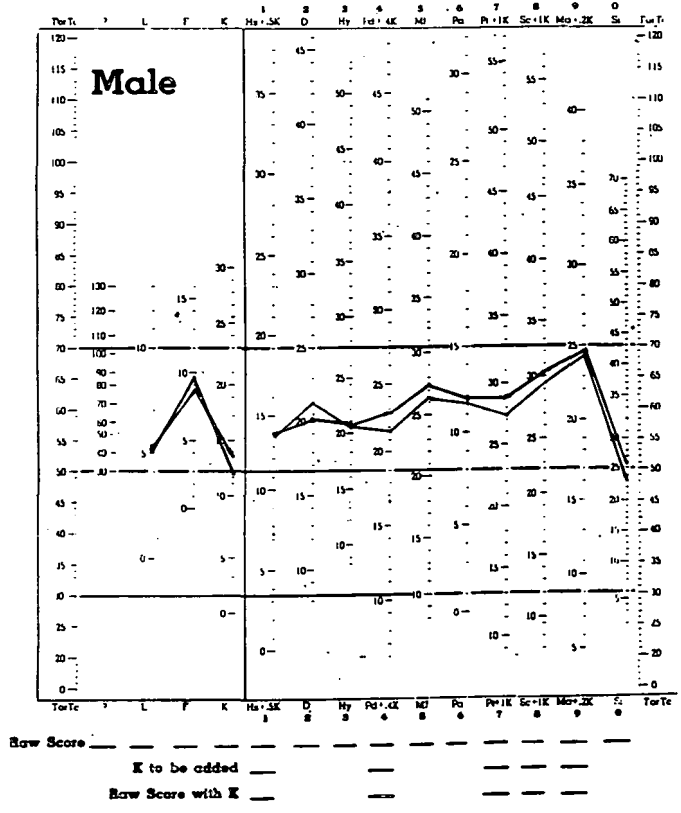
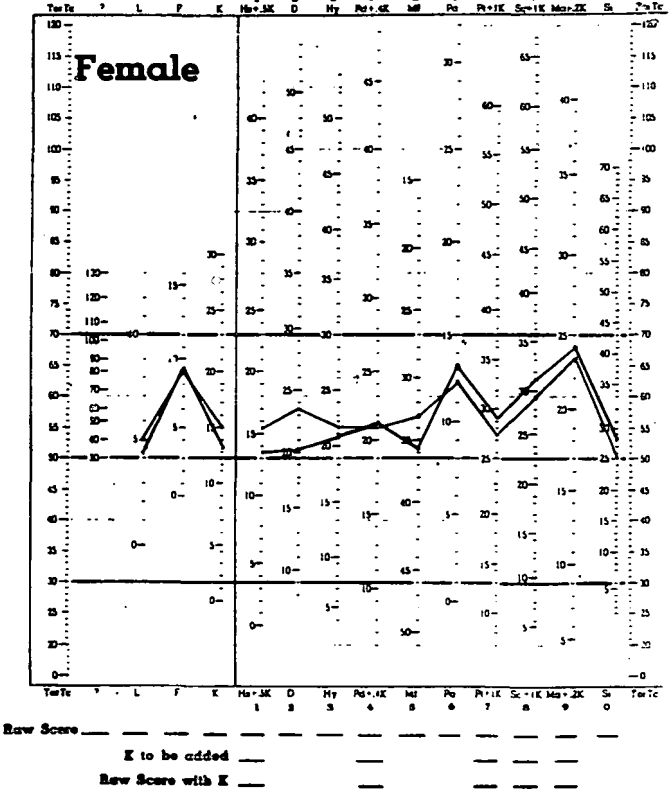


Figure 3. English and Filipino Non-K corrected Mean profiles of female subsample (n=16).



English Filipino

variable, K is intended to correct unconscious self-deception, the likelihood of which has been found to be most apparent on these five scales. K-corrected English and Filipino mean profiles are shown on Figures 4 and 5. These results indicate that the Filipino MMPI version benefits K-correction if it is employed to achieve greater profile similarity to the K-corrected English MMPI. When evaluating female profiles, this is true except for scale Hs which tends to substantially overestimate the same English scale measurements of Hypochondriatic symptoms.

Code Type Analysis Group Profiles. Profile configural analysis involving rank ordering of standard T-scale scores from both test administrations yielded the three highest scale scores which then represent a version's code type. English and Filipino high point code types of the male sample remain unchanged for K-corrected profiles although Sc is primed (exceeds 70T) on both versions. Uncorrected, male high point show scale shifts slightly below 70T.

Individual Profiles. Individual subject profiles on the English and Filipino profiles were paired and also compared for K-corrected profiles. Of the 39, less than half (n=15) had the same high point codes while 36 percent (n=14) had one scale shift among the three high point scales. Only two subjects had entirely different code types from one version's profile to another. Identical high point code types across versions are cited as stringent criteria for equivalence, and the Filipino MMPI may be regarded as having fulfilled this fairly, at best.

Relationship Between MMPI Scales and Sex

Comparisons between raw scale scores of 23 males and 16 females show impressive results as shown on Table 6, where t-tests yield significant mean differences ($p<.001$) on both versions only on the Mf scale. Female profiles show a clear identification with the traditional feminine role (i.e., as defined by the US domain of female interests). Similarly, profile interpretation for males suggests male role identification for the male sample. Gender differentiation is therefore achieved from both versions, a favorable indication for cross-national comparisons.

Figure 5. English and Filipino K-corrected mean profiles of female subsample (n=16).

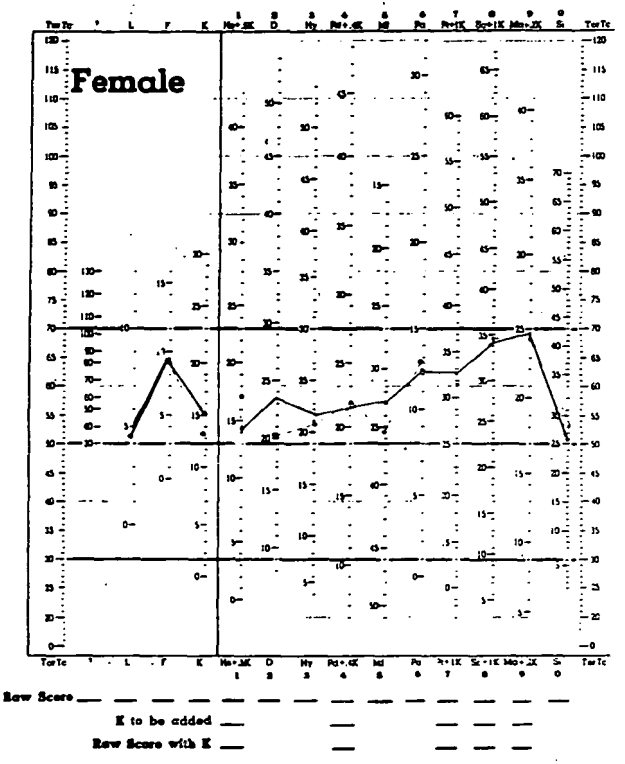


Figure 4. English and Filipino K-corrected mean profiles of male subsample (n=23).

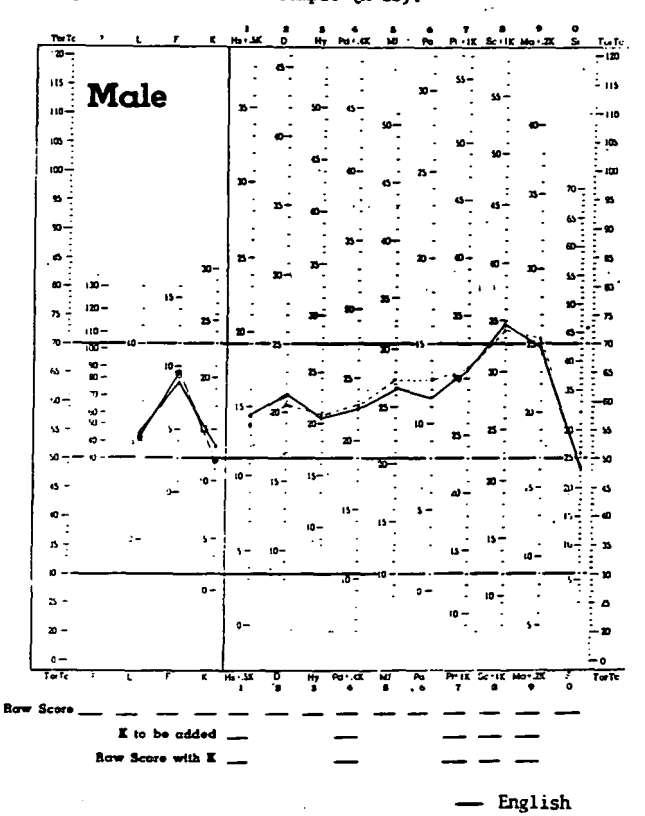


Table 6. Comparisons between Female and Male Raw Scale Score Means and Standard Deviations on the English and Filipino MMPI (N=39).

Scale		Filipino Males (n=23)	Filipino Females (n=16)	English Males (n=23)	English Females (n=16)
L	X	5.43	5.06	5.39	4.25
	SD	2.69	2.89	2.57	1.91
F	X	8.74	9.19	9.61	9.31
	SD	5.40	7.02	6.38	4.32
K	X	13.78	15.19	12.04	13.25
	SD	4.34	5.44	4.30	5.53
Hs	X	7.39	9.50	7.35	7.56
	SD	5.09	9.47	4.81	4.54
D	X	21.35	23.44	20.09	20.19
	SD	4.23	5.99	4.53	5.41
Hy	X	20.35	21.44	20.65	20.81
	SD	5.35	7.12	4.23	4.74
Pd	X	16.87	15.94	17.91	16.63
	SD	5.13	6.53	5.57	3.77
Mf	X	26.65***	33.06***	27.35***	35.75***
	SD	5.13	2.72	4.84	3.04
Pa	X	11.52	12.19	12.78	13.00
	SD	4.93	4.04	3.88	3.18
Pt	X	16.30	16.06	18.87	18.63
	SD	8.39	6.80	8.73	9.23
Sc	X	20.48	19.19	21.83	21.31
	SD	11.96	9.50	11.44	11.72
Ma	X	22.09	21.12	22.83	22.00
	SD	5.34	5.06	6.11	4.20
Si	X	23.17	25.25	26.00	28.06
	SD	9.63	9.28	8.41	10.32

*** $p < .001$.

As a requirement for establishing a test as a parallel form where the same scales from both versions must correlate with the same variable to the same or similar degree, this investigation confirms the equivalence, in addition to its ability to differentiate culturally prescribed gender interests and vocational choices which scale Mf measures as well as the English MMPI.

Discussion

The results of this study support the Filipino translation as an adequate parallel of the original English MMPI.

Item Endorsement Stability. Analysis of item response properties upon retesting yielded highly favorable indicators of translation adequacy having generated data comparable with prior work on endorsement stability for the Hebrew version (Butcher & Gur, 1974). An overwhelming 88 percent of 566 items proved to be significantly consistent across versions and minimal work for translation modification seems warranted. Analysis of 72 items failing to register significant levels of endorsement consistency do in fact surface the need for linguistic refinements to achieve greater equivalence between versions despite the fact that these represent only 12 percent of all MMPI items.

Scale Comparability. Investigation of items according to scale membership also indicates that favorable judgment be given to instrument translation. Only 25 of the 74 items that do not turn in percentages of significantly high endorsement consistency are those actually scored for the 13 scales. Moreover, only two out of the 25 items clearly necessitate retranslation due to a significant pattern of inconsistent responding by subjects.

Further analyses across versions indicate that scales may be categorized according to the extent to which these are able to satisfy translation reliability indices based on five equivalence requirements as presented on Table 7. Consequently, varying degrees of reliability may be assigned to each of the 13 MMPI scales under investigation and based on overall results are rated as Excellent, Good, Fair, Poor, or Very Poor.

The scales that fully satisfy the stringent criteria for equivalence across versions are (1) Lie or L; (2) Scizophrenia or Sc; and (3) Hypomania or Ma.

L-Scale. Across all measures, the scale reliability of L is conclusive. Consistent with earlier findings (McQuary & Truax, 1952), L has been reported to be most stable on retest procedures. Moderate elevations on L are also similar to those reported by Alcuaz-Reyes (1981) and Diy (1967). Identical interpretations regarding test taking attitude and naive defensiveness are therefore possible for both Filipino and English versions.

Table 7. Summary Table of MMPI Scale Performance measure against translation equivalent criteria.

FILIPINO-ENGLISH VS. ENGLISH-FILIPINO (R)								
Scale	Consistently endorsed items (%)	Fil-Eng	No. of Scale Overlaps (Inter-r)	Cottle (1960)	Composite	Eng-Fil Scale Score Mean Differences	Engl-Fil Scale Score S.D. Differences	Overall Ratings
L	100	High (.69)	0	VS	VS	VS	VS	Excellent
F	100	Moderate (.63)	(1)	VS	VS	VS	VS	Good
K	93	High (.81)	0	VS	VS	(***)	VS	Fair
Hs	97	Low (.38)	(3)	(***)	(***)	VS	**	Very Poor
D	98	Moderate (.61)	0	VS	VS	(**)	VS	Good
Hy	98	Moderate (.55)	0	VS	VS	VS	(*)	Good
Pd	96	Moderate (.57)	(2)	(*)	(*)	VS	VS	Poor
Mf	97	High (.68)	0	(*)	VS	(M) VS / (F) (**)	(M) VS / (F) VS	Good
Pa	90	Moderate (.49)	(1)	VS	VS	VS	VS	Fair
Pt	96	High (.78)	0	*	VS	(**)	VS	Fair
Sc	96	High (.79)	0	VS	VS	VS	VS	Excellent
Ma	93	High (.71)	0	VS	VS	VS	VS	Excellent
Si	81	High (.81)	0	--	--	(**)	VS	Good

For male and female subsamples on Mf only females register significant mean differences at $p < .01$.

Sc Scale. Confidence in scale interpretation of Sc is likewise concluded where all equivalence requirements have been satisfied. The Filipino version of Sc may be regarded as capable of effectively measur-

ing Sc symptoms such as social alienation, bizarre mentation and general dissatisfaction as well as on the English version. Although Sc (.79) correlates at a level similar to English Scale Pt (.75), this interrelationship has long been established in the literature (Carson, 1956; Dahlstrom, Welsh & Dahlstrom, 1982).

Scale Ma. This scale registers correlations that are almost identical with reliability coefficients reported in the literature (Cottle, 1960; Butcher, 1979). Scale Ma performance against equivalence criteria shows that the Filipino version is effective at assessing classic features of Hypomania as well as the English scale Ma.

Good Scales. Majority of the 13 MMPI scales under the "good" rating succeed at satisfying all but one translation equivalence requirement. These are (1) Infrequency or F; (2) Depression or D; (3) Hysteria or Hy; (4) Masculinity-Femininity or Mf; and (5) Social Introversion or Si.

F Scale. While the F scale was found to be reliable, it was found to correlate with the English scale Sc at an almost identical level with .63 and .66 correlations respectively. While the F scale does consist of the most numerous uniquely scored items, previous studies have established scale overlaps between these two scales when compared with all other MMPI basic scales.

Scale D. Although moderately correlated with its English equivalent (.61), raw scale score means on both versions indicate that symptoms of depression and discouragement tend to be more readily admitted in the local version. Diy (1967) and Alcuaz-Reyes (1981) report similar high scale D scores when using the English version as a main personality measure. By implication, the Filipino MMPI should anticipate some degree of D scale overestimation for intepretation purposes.

Scale Hy. Also moderately correlated (.55) with its English counterpart and with means that are not significantly different, scale Hy evidences reliability. Findings of statistically different standard deviations for raw scale scores across versions, however, may be interpreted within the context of scale Hy having the most number of overlapping items with the very poorly rated scale Hs.

Scale Mf. Rated good, scale Mf registers a high correlation (.80) with its corresponding English scale.

In the absence of scale overlaps, Mf succeeds at effectively differentiating itself from all other MMPI scales. Means and variances are statistically stable and support conclusions of reliability despite limitations of the small sizes of its male and female subsamples.

Scale Si. Consistent performance against translation equivalence requirements was found with the exception of significantly lower raw scale score mean differences on the Filipino version. High retest correlations for Si (.81) against maximum reliability standards support the Si scale reliability but interpretation must be made with consideration of a slight underestimation of social orientation on the local version.

Fair Scales. To the extent to which scales have been able to evidence properties of translation equivalence, the following scales have been rated as fairly reliable: (1) K; (2) Paranoia or P; (3) Psychasthenia or Pt.

Scale K. Although all but one index of translation equivalence requirement was met, it is the K scale that shows the largest scale mean difference ($p<.001$) between versions. K is critical since it functions as a correction variable for other scales. Findings indicate that there is cause to anticipate a higher degree of subtle defensiveness among profiles of subjects responding to the Filipino version of the MMPI.

Scale Pa. Results show that Pa performs well with respect to psychometric criteria and against independent reliability measures. However, retest correlations across versions for Pa is the second lowest at .49. This value is not significantly different from the combined independent English MMPI reliability coefficients. Intercorrelations, furthermore, seem to indicate that Pa has ostensibly weak discriminative properties characteristic of the original scale itself, rather than as a function of the local translation.

Scale Pt. Pt correlates at a moderately high level with its English parallel (.78) and evidences favorable scale discrimination properties. However, a significantly lower raw scale score mean on the Filipino version was found when compared with the English outcome. Items on Pt when phrased in English may tend to be more readily endorsed than in its translated form.

Poor. Results show that Pd fails to fullfill three psychometric requirements for equivalence despite non-significant difference between means and standard deviations of their raw scale scores.

Intercorrelations with five other scales indicate weak discriminative properties of the Filipino Pd. Present findings indicate that there is a need to determine sources of Filipino Pd covariation with other scales, whether American indicators of deviance are, in fact, comparable with the local culture and if psychological inequivalence is, in fact, a contributing factor to this scale's behavior when compared to its English equivalent.

Very Poor. Least reliable of all MMPI scales is that of Hy because it fails to fulfill any of the equivalence requirements with the exception of non-significant raw scale score mean differences across versions. Hy registers the lowest Filipino-English test-retest correlation coefficient at .38 which is significantly, but minimally, correlated. Against maximum (English-English) correlational standards, Hy also shows highly significant differences ($p<.001$). It may be hypothesized that the extent of Hy inequivalence may be traced to the fact that translation difficulties are more likely since there are no direct equivalents for common physical disorders. Interpretations assigned to resulting Filipino scale Hs scores must be made tentatively, at best.

Profile Similarity and Code Type Consistency

Findings based on comparisons of English and Filipino profiles plotted according to standard T-score conversions with or without K correction must take into account the limited range of subjects of male (n=23) and female (n=16) subsamples.

Profile similarity across versions are positively indicated particularly where the male sample is concerned. On male non-K corrected profiles, Filipino version scales consistently underestimate their English counterparts only by an average of 2T and a maximum of 4T with the exception of scale D.

When K corrections are applied, further improvement in profile similarity results. It may be helpful to assess profiles of males in the light of potentially lower patterns of scale scores obtained by the local version.

For female subjects, marked dissimilarities are noted for neuroticism scales (Hs, D and Hy) while profile similarities are consistent on those for psychoticism (Pt, Sc, Ma). Judicious interpretation of the local version is warranted for female subjects which

overestimates the first half of English scales (Hs, D, Hy, Pd,, and Mf) while the reverse is true for the rest of the profile (Pa, Pt, Sc, Ma, and Si).

Analysis by code types shows these to be comparable basis for profile interpretations on both versions of the MMPI given consistent high points found on resulting configurations. Pairs of high point codes of individually paired subject profiles show that slightly more than a third of subjects retained their high point from one administration to another, where another third had one scale shift. These results are less impressive than those of a previous study (Butcher & Gur, 1974) that found half of its sample (N=24) with identical high point codes and the other half with one scale shift.

Implications of Sex Membership for MMPI Use

This study shows that there is data to support the finding that sex membership is effectively differentiated by the Masculinity-Feminity scale. A preliminary validation of the Mf scale is suggested by results of highly significant differences between male and female mean raw scores only on this scale, and similarly significant correlations resulting between MMPI scales and sex for both English (.70) and Filipino (.60) versions. As such, this study defines a clear relationship between scale Mf and both versions of the MMPI. There is reason to attribute a high degree of confidence in sex differentiation and role identification resulting from scale Mf scores for local samples of males and females.

Conclusion

The findings of this study have shown that minimal translation modification is required for the Filipino version for it to achieve maximal equivalence. Validation studies may likewise be undertaken incorporating factor structure to resolve questions posed by this research on scale overlaps and intercorrelations. Finally, there is a need to determine an optimal K, the extent of applicability of K correction and the effects of fractional additions of K on resulting profile configurations among local samples.

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