Figure 2. MMPI-A Basic Scale Profiles for females from five countries.
Although there were some significant scale differences, these were essentially within the normal range and not interpretable as reflecting psychopathology differences. They could simply be sampling differences.

Discussion

This study addresses an important question—whether a clinical-assessment instrument, the Hispanic MMPI-A, which was developed for use with Spanish-speaking adolescents in the United States, can be used to assess young people in other Spanish-speaking countries. There are clear practical reasons to explore this question. The adaptation into other languages and cultures of clinical-assessment instruments that were developed in English can facilitate the development of clinical psychology in other countries. The cost of developing psychological tests with a substantial validation base for other countries often is prohibitive. It is very time and labor intensive to develop valid and useful psychological procedures. Many psychologists in other countries have shown in recent years that personality scales developed in the United States can be applied effectively with clients in their own countries (Butcher, 1996). Second, the availability of effective clinical-assessment instruments, like the MMPI-A, in other languages can facilitate cross-cultural research on psychopathology and serve as a basis for personality-assessment research across cultures.

This study examined personality-test responses in samples of normal adolescents obtained from five different countries. The samples studied were obtained from schools in the respective countries. Examination of the responses of normal adolescents on the MMPI-A was considered critical to its cross-cultural use in order to determine if the test is going to be effective at discriminating normal adolescents from pathological groups. Adolescents who are tested in typical school settings are expected to perform in a similar manner—that is, produce nonelevated MMPI-A scales. This information is crucial if the instrument is to be considered comparable and assess similar characteristics across cultures.

The results of this study have established comparability for the Spanish-language MMPI-A in school-based samples across several Spanish-speaking countries. The group mean clinical and content-scale profiles show high similarity in the response patterns of normal adolescents across the five national groups. Although there were some small differences between countries, for example, between Peruvian adolescents and Mexican adolescents, most of the scale score differences obtained were trivial and within the range of the standard error of measurement for the scales (Butcher et al., 1992). The MMPI-A appears to measure similarly adolescent personality constructs across five Spanish-speaking normal groups.

This study does have its limitations. First, the sample sizes for the five groups were relatively small and somewhat heterogeneous in make up. The samples included in the study were collected in a "field-research" study rather than in a controlled research design. Therefore, it was not possible to balance or stratify the samples on factors such as age or socioeconomic status. There were no biases in the schools selected other than they were considered representative of the community and were willing to cooperate in the research. Having larger samples would have allowed further item-analytic comparisons that could have been informative.

In spite of these limitations, the results of this study are valuable as initial efforts to test the MMPI-A across these diverse national groups. The findings are encouraging and suggest that the MMPI-A-based test constructs are operating in a similar manner among normal adolescents in cross-cultural settings.
Additional research on the clinical validity of the MMPI-A with both normative and patient samples in the different countries is needed to validate further the MMPI-A as a measure of psychopathology in adolescents.

Conclusion

The Spanish-language MMPI-A, developed for Hispanics living in the United States, has shown comparability when used to assess adolescents in other countries. When the MMPI-A is administered to normal adolescents from public schools in Peru, Colombia, Spain, and Mexico, the adolescents respond in a similar manner to that of American adolescents. The Spanish-language MMPI-A shows promise in assessing normal adolescents in other Spanish-speaking countries. Additional research to assess further the clinical validity of the MMPI-A in these Spanish-speaking populations is recommended.

References


This article presents the results of 2 studies conducted with Spanish versions of the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) with Latino students. Study 1 compared the results of 2 administrations of the MMPI-2, one in English and the other in Spanish. Study 2 compared the results of administrations of 2 Spanish ver-
sions of the MMPI-2, the official Mexican adaptation and the Version Hispana. In both cases, scale score differences were not found. Comparability, as operationally defined by test–retest reliability, was found to be higher for the group that was administered the English and Spanish versions than the group administered the 2 Spanish versions. Overall, the results were found to suggest correspondence. Yet, the authors warn against concluding “perfect” correspondence because other key groups need to be studied, including psychiatric patients and persons from the Latino community. Also, the determination of linguistic equivalence needs further refinement.

**MMPI-2 • bilingualism • Latinos • translations • language**

As a psychologist, imagine yourself in a situation in which the client you are about to evaluate is a monolingual Spanish-speaking client. The client indicates to you that he or she wants to fully participate in this evaluation because he or she recognizes and appreciates the value of this process. You are able to interview the client in Spanish, including the administration of a mental status examination, but you are still in need of objective test data to substantiate your diagnostic and treatment decisions. In particular, you use the Minnesota Multiphasic Personality Inventory–2 (MMPI-2) on a regular basis with English-speaking clients of all cultural backgrounds, including Latinos, because of its ease in administration, scoring, and interpretation. You also choose to use this measure because it offers a wealth of clinical data, because it is cost and time efficient, and because there is a significant body of research with the Latino population in the United States including Puerto Rico (see Velasquez, Ayala, & Mendoza, 1998; Velasquez et al., in press).

Given this challenging scenario, which is becoming more common everyday, what should you do? Do you translate the MMPI-2 for the client, item by item? Do you administer the English-language MMPI-2 and wait to see what happens? Do you administer one of the many Spanish translations of the original MMPI (e.g., the “Nunez” version)? Or do you administer an “official” translation of the MMPI-2? The only answer to all of these questions is that you should administer a translation of the MMPI-2, not only because of its availability but also because of the rigorous back-translation techniques that were used to arrive at such a version. Ethically speaking, you would not consider a Spanish version of the original MMPI because practitioners should be using only the most contemporary measures, in either language. Also, translations of the original MMPI, like the “Nunez” adaptation, were extremely flawed in all aspects of the translation (Velasquez et al., 1997).

A systematic review of over 40 studies on Latinos with the MMPI-2/MMPI—Adolescent Version (MMPI-A) revealed only one study that has examined the psychometric correspondence of different- or same-language versions with Latinos (Garcia, 1995). In that investigation, Garcia examined the performance of bilingual Puerto Rican adolescents on the English and Spanish translation of the MMPI-A by considering the between-languages test–retest reliability obtained when administering both linguistic versions. Garcia also administered the Spanish translation on two occasions to Spanish-speaking adolescents to determine within-language reliability. No differences were found in the first phase, but differences were found in the second phase. Significantly higher scale scores were found on the Lie, Infrequency, and Masculinity–Femininity scales on the first administration. Garcia concluded that these differences were perhaps more due to the artifact of readministration of the same language test or the demeanor or response style of the participants.
Given the increasing representation of Spanish-speaking Latinos in a variety of mental health and psycholegal settings (e.g., evaluation of child custody cases), it is vital that equivalence be established to minimize the possibility of bias. It is our belief, and that of others (e.g., Butcher, 1996; Geisinger, 1994), that high correspondence between linguistic versions suggests the possibility of greater psychometric equivalence (i.e., validity). Also, if there is high correspondence between two distinct Spanish translations, then one can expect intertest equivalence. In recent years, these issues have become quite salient in the psycholegal realm, in which use of translations has come under greater scrutiny (see Gray-Little & Kaplan, 1998).

The purpose of this study was twofold. First, we sought to examine the equivalence between the English and a Spanish translation of the MMPI-2. Butcher and Clark (1979), in discussing cross-cultural adaptation of test measures like the MMPI, stated that “the final stages of translation should include test-retest reliability studies, both monolingual [e.g., Spanish–Spanish] . . . and bilingual [e.g., English–Spanish]” (p. 207). Studies conducted in other parts of the world with bilingual participants indicate high comparability or equivalence as defined by several psychometric indexes, including test–retest reliability (see Almagor & Nevo, 1996; Deinard, Butcher, Thao, Vang, & Hang, 1996; Konraos, 1996; Rissetti, Himmel, & Gonzalez-Moreno, 1996). For example, Rissetti et al. (1996) administered the English-language and Chilean translation of the MMPI-2 to 22 bilingual professionals in Santiago, Chile. They reasoned that “[if the two] versions were linguistically equivalent, bilingual test–retest correlations would be of such magnitude that they would correspond primarily to measures of scale reliability” (p. 227). The findings supported their expectations, with a mean correlation of .80 for all of the scales.

The second purpose of this study was to examine the correspondence between two Spanish translations of the MMPI-2. In discussing test adaptation issues, Geisinger (1994) noted that cultural adaptations of measures such as the MMPI-2, within a single language like Spanish, remain a major challenge for the profession. Moreover, Geisinger stated that “most . . . adaptations . . . involve the translation of an instrument from one language to another . . . however, adaptations . . . are needed even if the language remains the same, because culture or life experiences of those speaking the same language may be different” (p. 304). The design for this study is based on similar methodologies used by Garcia (1995) with the MMPI-A and by Rogers, Flores, Ustad, and Sewell (1995) and Novy, Nelson, Smith, Rogers, and Rowzee (1995) in their studies with the Spanish translations of the Personality Assessment Inventory and State–Trait Anxiety Inventory, respectively. Our expectations were the following: (a) Minimal, if any scale differences, would be found when contrasting a Spanish translation to the original U.S. English version of the MMPI-2, and (b) minimal differences between two Spanish versions, but lower correlation coefficients perhaps reflective of idiomatic differences or response style, would be found.

**Method**

**Study 1**

Participants were 57 adult undergraduate students (42 women, 15 men) from a major university in southern California. To be eligible to participate in this study, the participants had to produce valid MMPI-2 protocols in both English and Spanish according to the following criteria: “cannot say” = raw score < 30 and Fraw < 20. Participants were administered, in a counterbalanced fashion, the MMPI-2 in English and the Inventario Multifasico de la Personalidad—2—Minnesota, Version Hispana, which was translated by Garcia-Peltoniemi and Azan Chaviano in 1993 (available through National Computer Systems) and is considered to be the “official” U.S. Spanish translation. It is important to
note that in this study, the participants were only administered the first 370 items because of time constraints. It is also important to note that the first 370 items allow for scoring on the validity and clinical scales (Greene, 1991). Participants were administered the MMPI-2, under standard instructions, at an interval of 6 weeks. The participants were predominantly single (87%) and Mexican American or Chicano (80%). The average age of the sample was 24 years (SD = 7.88).

Study 2

Participants were 27 adult undergraduate students (17 women, 10 men) from the same university as mentioned in Study 1. The same eligibility criteria were used for this study but also included Variable Response Inconsistency Scale (VRIN) < 74 T score. Participants were administered, in counterbalanced fashion, two Spanish versions of the MMPI-2, the Version Hispana by Garcia-Peltoniemi and Azan Chaviano, and the Inventario Multifasico de la Personalidad de Minnesota-2 Espanol translated by Lucio and Reyes-Lagunes for use in Mexico (see Lucio, Reyes-Lagunes, & Scott, 1994). In this study, the participants were administered all 567 items, which allowed for scoring on the validity, clinical, content, and supplementary scales. Participants were administered the MMPI-2, under standard instructions, at an interval of 4 weeks. The participants were predominantly single (90%) and Mexican American or Chicano (85%). The average age of the sample was also 24 years (SD = 5.96).

The analyses that follow were conducted on the combined sample of men and women for each study to increase power. This is consistent with Stein, McClinton, and Graham (1998), who combined their samples in a study with the MMPI-A. Also, gender does not appear to affect test–retest reliability for the MMPI-2 (Schuerger, Zarella, & Hotz, 1989). It is important to note that both studies required the participants be administered the MMPI-2 in a counterbalanced fashion to minimize order effects (i.e., some participants were administered the English-language MMPI-2 first and then Spanish translation second, or vice versa).

Results

Study 1

Table 1 describes the performance of 57 bilingual participants who were administered both the English and Spanish translation of the MMPI-2. Included are the means and standard deviations for the 3 validity and 10 clinical scales, the results of t-test comparisons, and the test–retest correlation coefficients. No mean differences were found on any of the scales (including differences between scales of greater than 57 score points). The mean test–retest coefficient was .71, with coefficients ranging from a low of .60 for the Hypochondriasis scale and a high of .77 for several scales including Depression, Paranoia, Psychasthenia, Schizophrenia, and Hypomania.

Study 2

Table 2 describes the performance of 27 Latinos who were administered two Spanish versions of the MMPI, the Version Hispana and the Mexican adaptation. Included are the means and standard deviations for the 3 validity and 10 clinical scales, the results of t-test comparisons, and the test–retest correlation coefficients. As in Study 1, no mean differences were found on any of the scales. The mean test–retest coefficient was .42, with coefficients ranging from a low of .15 for the Depression scale and a high of .76 for the Lie scale.

Discussion

The findings from Study 1 supported our expectations and appeared to be similar to the results obtained by researchers who have evaluated bilinguals with the MMPI-2 in
TABLE 1 Study 1: Participants' Performance on the English and Spanish Translation of the MMPI-2: Validity and Clinical Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>English M</th>
<th>English SD</th>
<th>Spanish M</th>
<th>Spanish SD</th>
<th>r</th>
<th>t(56)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lie</td>
<td>51.70</td>
<td>11.27</td>
<td>51.63</td>
<td>11.34</td>
<td>.68*</td>
<td>0.06</td>
</tr>
<tr>
<td>Infrequency</td>
<td>55.96</td>
<td>15.88</td>
<td>58.84</td>
<td>17.45</td>
<td>.66*</td>
<td>-1.58</td>
</tr>
<tr>
<td>Correction</td>
<td>46.98</td>
<td>8.85</td>
<td>48.32</td>
<td>7.70</td>
<td>.76*</td>
<td>-1.73</td>
</tr>
<tr>
<td>Hypochondriasis</td>
<td>51.60</td>
<td>10.01</td>
<td>51.33</td>
<td>9.70</td>
<td>.60*</td>
<td>0.23</td>
</tr>
<tr>
<td>Depression</td>
<td>52.22</td>
<td>10.59</td>
<td>52.45</td>
<td>12.04</td>
<td>.76*</td>
<td>-0.22</td>
</tr>
<tr>
<td>Hystera</td>
<td>48.24</td>
<td>10.01</td>
<td>48.84</td>
<td>9.98</td>
<td>.68*</td>
<td>-0.57</td>
</tr>
<tr>
<td>Psychopathic Deviate</td>
<td>53.54</td>
<td>12.44</td>
<td>52.12</td>
<td>11.94</td>
<td>.62*</td>
<td>1.02</td>
</tr>
<tr>
<td>Masculinity-Femininity</td>
<td>55.27</td>
<td>11.73</td>
<td>57.69</td>
<td>10.92</td>
<td>.77*</td>
<td>-2.35</td>
</tr>
<tr>
<td>Paranoia</td>
<td>50.37</td>
<td>13.29</td>
<td>49.85</td>
<td>12.04</td>
<td>.76*</td>
<td>0.44</td>
</tr>
<tr>
<td>Psychasthenia</td>
<td>53.96</td>
<td>13.06</td>
<td>55.59</td>
<td>11.29</td>
<td>.77*</td>
<td>-1.47</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>55.94</td>
<td>14.07</td>
<td>57.21</td>
<td>13.90</td>
<td>.76*</td>
<td>-1.32</td>
</tr>
<tr>
<td>Mania</td>
<td>59.08</td>
<td>15.76</td>
<td>59.51</td>
<td>14.08</td>
<td>.77*</td>
<td>-0.32</td>
</tr>
<tr>
<td>Social Introversion</td>
<td>49.50</td>
<td>9.99</td>
<td>49.02</td>
<td>10.63</td>
<td>.63*</td>
<td>0.43</td>
</tr>
</tbody>
</table>

Note. MMPI-2 = Minnesota Multiphasic Personality Inventory–2.
*p < .05.

The translations were administered by bilingual evaluators. The overall reliabilities were high for both translations. The basic scores for different parts of the world (e.g., Deinard et al., 1996; Konraos, 1996). That is, the mean reliability coefficient was considered to be moderately high, suggesting linguistic comparability. Also, no statistically significant differences were found between any of the scales. These findings are also consistent with the findings of Garcia (1995), who found no differences between the English and Spanish translation of the MMPI-A. It appears, preliminarily speaking, that the Version Hispana, as a generic version, can be used with Spanish-speaking Latinos in the United States with some degree of confi-

TABLE 2 Study 2: Participants' Performance on Two Spanish Translations of the MMPI-2: Validity and Clinical Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>Version Hispana M</th>
<th>Version Hispana SD</th>
<th>Mexican M</th>
<th>Mexican SD</th>
<th>r</th>
<th>t(26)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lie</td>
<td>56.77</td>
<td>11.99</td>
<td>58.51</td>
<td>11.01</td>
<td>.76*</td>
<td>-1.14</td>
</tr>
<tr>
<td>Infrequency</td>
<td>61.62</td>
<td>14.92</td>
<td>59.81</td>
<td>13.21</td>
<td>.44*</td>
<td>0.63</td>
</tr>
<tr>
<td>Correction</td>
<td>53.07</td>
<td>10.07</td>
<td>52.66</td>
<td>9.28</td>
<td>.60*</td>
<td>0.24</td>
</tr>
<tr>
<td>Hypochondriasis</td>
<td>55.62</td>
<td>8.11</td>
<td>57.88</td>
<td>7.09</td>
<td>.48*</td>
<td>-1.50</td>
</tr>
<tr>
<td>Depression</td>
<td>52.51</td>
<td>7.70</td>
<td>55.22</td>
<td>7.74</td>
<td>.15</td>
<td>-0.36</td>
</tr>
<tr>
<td>Hystera</td>
<td>52.07</td>
<td>8.64</td>
<td>49.70</td>
<td>9.45</td>
<td>.46*</td>
<td>-1.31</td>
</tr>
<tr>
<td>Psychopathic Deviate</td>
<td>53.09</td>
<td>8.69</td>
<td>53.44</td>
<td>8.22</td>
<td>.60*</td>
<td>-0.28</td>
</tr>
<tr>
<td>Masculinity–Femininity</td>
<td>54.03</td>
<td>10.33</td>
<td>55.21</td>
<td>12.16</td>
<td>.58*</td>
<td>-0.54</td>
</tr>
<tr>
<td>Paranoia</td>
<td>49.18</td>
<td>8.97</td>
<td>53.48</td>
<td>10.41</td>
<td>.19</td>
<td>-1.54</td>
</tr>
<tr>
<td>Psychasthenia</td>
<td>54.25</td>
<td>8.15</td>
<td>52.48</td>
<td>8.88</td>
<td>.43*</td>
<td>1.02</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>59.25</td>
<td>8.97</td>
<td>57.40</td>
<td>9.13</td>
<td>.22</td>
<td>0.85</td>
</tr>
<tr>
<td>Mania</td>
<td>56.57</td>
<td>9.83</td>
<td>58.29</td>
<td>10.44</td>
<td>.20</td>
<td>-0.78</td>
</tr>
<tr>
<td>Social Introversion</td>
<td>46.66</td>
<td>5.97</td>
<td>45.70</td>
<td>6.83</td>
<td>.39*</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Note. MMPI-2 = Minnesota Multiphasic Personality Inventory–2.
*p < .05.
dence. As Butcher (1996) noted, “a bilingual test–retest study is likely to provide valuable information about whether the MMPI-2 is measuring the same things in both languages” (pp. 39–40).

The findings from Study 2, while indicating no scale score differences, did result in a lower mean correlation coefficient. This, in turn, suggests variable performance when Spanish-speaking participants were administered two different Spanish translations of the MMPI-2. Unlike Study 1, in which participants were required to respond to an English and Spanish translation, the participants in Study 2 may have found this task to be less linguistically challenging because both instruments were in Spanish.

Also, the participants may have struggled with some of the idioms or sentence structures of the items. For example, the item “My judgment is better than it ever was” was translated on the Version Hispana to “Mi habilidad para juzgar y tomar decisiones es ahora mejor que nunca” and on the Mexican version to “Soy más sensato ahora que nunca.” The item “I am so touchy on some subjects that I can’t talk about them” was translated on the Version Hispana to “Soy tan quisquilloso(a) acerca de algunos asuntos que ni siquiera puedo hablar de ellos” and on the Mexican version to “Soy tan susceptible respecto a algunos temas que ni siquiera puedo hablar de ellos.” In another item appearing on the Version Hispana, the word excitacion is used in favor of the words “el alboroto,” which appears on the Mexican version. In Mexico, the word excitacion implies sexual excitement and not emotional excitement. Thus, this sample primarily composed of Mexican Americans may have found the item somewhat difficult to respond to or may have felt offended or embarrassed.

This finding appears to be consistent with the observation made by Geisinger (1994) that idiomatic adaptations of an instrument are needed because a particular language has many unique idiomatic nuances. Given these findings and Geisinger’s observation, one must ponder the possibility that maybe in the future, Mexican Americans may need to be administered a “Mexican” adaptation, whereas Puerto Ricans (living in the United States) may be better served with a Puerto Rican adaptation.

In explaining our findings, especially in the first study, we would be remiss or naive to not discuss other potential issues that affected this investigation. For example, we did not study a group of participants who were psychologically impaired. Instead, we examined a group of college students who were more likely to be healthy and free of major mental illness. Also, these participants were more likely to be competent in both languages than persons outside of a university environment. This type of study needs to be conducted with bilingual psychiatric clients because they may be prone to view and describe their problems very differently depending on which language they are being evaluated with measures such as the MMPI-2 (see Sandoval & Duran, 1998). Also, investigations like this need to be conducted with community samples because these types of samples have been a part of the development of norms for the MMPI-2 in English.

Velasquez et al. (1997) provided an illustrative example of dilemmas related to the clinical assessment of Latinos by presenting the case of “Sandra,” who obtained two different MMPI-2 profiles, which in turn suggested different psychiatric diagnoses and treatment options. When Sandra was administered the MMPI-2 in English, she produced a configuration with elevations (over 65T) on the Schizophrenia, Psychasthenia, and Paranoia scales (i.e., an 8-7-6 code type), which suggested a Diagnostic and Statistical Manual of Mental Disorders (4th ed., DSM-IV; American Psychiatric Association, 1994) diagnosis of schizophrenia, use of psychotropic medications, and possible hospitalization. When she was administered the MMPI-2 in Spanish, the three highest elevations (yet significantly lower than the first administration) were on the Psychasthenia, Schizophrenia, and Psychopathic Deviate scales (i.e., a 7-8-4 code type), suggesting a DSM-IV Axis II personality or characterological disorder.

Also, our results, combined with the
findings of studies in other parts of the world, suggest that the development of exact linguistic translations may never be completely possible given the nuances of language and emotion (see Novy et al., 1995; Rogers et al., 1995). Our findings beg the question: Is there a standard Spanish that can be used when translating and adapting psychological measures like the MMPI-2 when this language reflects national, regional, and local nuances? One way to study this issue is to field test the MMPI-2 with the target group (clinical and nonclinical) to evaluate semantic and linguistic habits (see Nichols, Padilla, & Lucio, in press). Thus, researchers may need to settle on an acceptable range or bandwidth of equivalence. Other types of research that need to be conducted include studies on item endorsement rates and replicatory factor analyses (Ben-Porath, 1990).

In conclusion, we believe that our findings point toward the need for greater research on bilingualism and the expression of psychopathology through instruments such as the MMPI-2. An examination of the research literature on Latinos indicates that this area of research has been largely neglected in favor of studies that typically compare Latinos with other ethnic groups, most notably Whites, on English-language versions of the MMPI and MMPI-2. It is clear that language remains crucial in the understanding of Latinos' mental health issues (see Sandoval & Duran, 1998). If psychologists are to use standardized measures such as the MMPI-2, they need to be fully aware of both the strengths and limitations that currently exist (Guttfreund, 1990). Given the fact that the Spanish language continues to thrive among Latinos, even after numerous generations in the United States, or that "language switching" continues to occur with regularity in treatment with Latino clients, it is essential that these measures be evaluated for validity. Also, researchers should consider the possibility of developing bilingual psychodiagnostic measures in light of many Latinos' equal use of both English and Spanish. Velasquez and colleagues (Velasquez, Gutierrez, Arellano, Jimenez, & McClendon, 1999; Velasquez, Jimenez, et al., 1998) recently began to investigate the viability of a bilingual MMPI-2 (i.e., items are in both English and Spanish). In their initial work, they have found no differences between Latinos who responded to the MMPI-2 in English, Spanish, or a combination of both languages. We strongly encourage researchers to consider investigations in this area of Latino mental health.

References


Personalidad-2–Minnesota, Version Hispana. Available from National Computer Systems, P.O. Box 1416, Minneapolis, MN 55440.


