A PSYCHOMETRIC EXAMINATION OF THE US SPANISH MMPI-3: RELIABILITY, VALIDITY, AND COMPARABILITY TO THE ENGLISH FORM

_____

A Dissertation

Presented to

The Faculty of the Department of Psychology and Philosophy

Sam Houston State University

_____

In Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

_____

by

Tessa A. Long

August, 2022

A PSYCHOMETRIC EXAMINATION OF THE US SPANISH MMPI-3: RELIABILITY, VALIDITY, AND COMPARABILITY TO THE ENGLISH FORM

by

Tessa A. Long

_____

APPROVED:

Jaime Anderson, PhD
Committee Director

Marc Boccaccini, PhD
Committee Co-Director

Ryan Marek, PhD
Committee Member

Jorge Varela, PhD
Committee Member

Chien-pin Li PhD
Dean, College of Humanities and Social Sciences

DEDICATION

This dissertation is dedicated to my parents, Von and Gerlina Long, without whom my life, my career, and this project would not have been possible. I love you both and thank you for all the sacrifices you made and the opportunities you afforded me.

It is also dedicated to my grandmother, Betty Long, who passed away only a few days before I publicly defended. I saw all those cardinals, Grandma.

Finally, it is dedicated to the population it is intended to support. May our field continue to embrace cultural humility, especially where it has been overlooked and ignored for far too long.

ABSTRACT

Long, Tessa A., *A psychometric examination of the US Spanish MMPI-3: Reliability, validity, and comparability to the English form.* Doctor of Philosophy (Clinical Psychology), August, 2022, Sam Houston State University, Huntsville, Texas.

The US Spanish Multiphasic Personality Inventory-3 (MMPI-3) is a recently released translated version of the well-researched English MMPI-3. The current study aimed to examine the psychometric properties of the US Spanish MMPI-3 and its comparability to the English version. Data was extracted from a larger study on the functionality of the MMPI-3 in bilingual college students. Subjects (n = 303) were Latinx Spanish/English bilingual college students recruited from two Texas universities (Sam Houston State University and University of Texas-Rio Grande Valley) who were administered both translations of the MMPI-2-Restructured Form-Extended Battery (MMPI-2-RF-EX) and later the MMPI-3 in a counterbalanced design across two timepoints.

First, we examined internal consistency and inter-item correlations for all Spanish and English MMPI-3 scales. Overall, scales exhibited adequate internal consistency and inter-item correlations. Next, we conducted test-retest correlations between same language MMPI-3's administered a week apart to determine test-retest reliability of the separate forms, which rendered adequate test-retest reliability. We then ran correlation analyses between the two language versions of the MMPI-3 and found adequate convergence and divergence between the forms. Lastly, we conducted correlational analyses between the Spanish and English MMPI-3 versions with external criterion measures of personality and general psychopathology. Steiger's z-tests were used to determine whether associations with external criteria differ across test versions. Analyses

suggested minimal differences between the forms with some notable differences, particularly within the Psychoticism domain. There were also some scales, specifically externalizing and substance use, with range restriction that limited significant findings. Overall, the current study demonstrated the US Spanish MMPI-3 can be used within a Latinx, bilingual college sample.

KEY WORDS: MMPI-3; Spanish; Latinx; Bilingual; College students

ACKNOWLEDGEMENTS

It has taken a village of love and support to complete both this project and graduate training overall. There are many I am sure to have left off this list, and even more I could say about each one, but I'll try to keep it short.

Drs. Anderson, Henderson, Varela, and Venta— You have each been patient and challenged me to achieve far beyond what I thought I could accomplish. Thank you for demonstrating perseverance, dedication, and how to push through self-perceived limitations.

Drs. Johnson and Groberio— Thank you for teaching me how to practice and for always putting my stressors into perspective.

Drs. Hunter, Penick, and Poje— Thank you for your support through a professionally and personally challenging year. I know I finished internship a better person and practitioner because of your mentorship.

Lauren— There's no one else I would have rather spent hours driving, running, singing, crying, Internet shopping, furiously (and last minute) writing, scheming, planning, complaining, studying, eating/drinking, dog parking, and wedding-ing with. Thank you for being the best work colleague and friend.

Betsy— Our travels, discussions, and shared oranges shaped me not only as a professional but as a person. Thank you for helping me feel less alone and for openly and vulnerably being yourself, especially in environments where it is not always celebrated.

Gabby— I'm pretty confident about our friendship now. Thank you for making graduate school much more fun and for making the darkest moments lighter. Also thank you for being the World's #1 Grandmother!

Elise— I’m still not sure how we became friends. What I do know is you have been my role model, friend, and confidant through it all. I cherish the hours we spend having 14 discussions simultaneously. Graduate school was hard, but you always help put things into perspective and I’m so lucky to call you a friend.

Stephanie— 1) I am sorry for stealing that curly fry. 2) Thank you for caring for Malone and for letting Bentley teach Malone how to dog. 3) We did it!!!

The 2016 Cohort (Ellen, Nick, JJ, Sam, and Sam)— We went through it all together. Thank you for the hours we spent talking, discussing, learning, and supporting each other.

The Reverberators (Angela, Beth, Jessica, Nellie, and Rebekah)—I could not have hand selected a better internship cohort. Thank you for helping such a chaotic year feel more comfortable. I couldn’t have done it without you. (Y’all know the joke!)

Bosley— You’ve moved nine times with me since 2011. You’ve been there through all my experiences over the past decade, and despite several close calls when you were an outside cat, we always found each other.

Gambino and Malone (and Rex)— You have always been right next to me, whether it be sleeping, writing, or completing comps. Thank you for all the cuddles and kisses.

Tiffany— Thank you for being the best older sister. I learned almost everything I know about music, clothes, and making excel tables from you.

And lastly, Chris— Thank you for going through the last six years with me. You’ve been by my side through it all—the successes, the failures, the sleepless nights, the yelling at the screen when things wouldn’t format correctly. Thank you for always making me

laugh even when I’m in a bad mood and for supporting me through. It looks like we made it. I love you.

TABLE OF CONTENTS

Page

LIST OF TABLES

CHAPTER I

Literature Review

The United States is diversifying at an exponential rate. According to the US Census Bureau (2017), the population is projected to be nonwhite majority by 2050. Presently, about 60 million Latinx individuals reside in the US, comprising about 18% of the total population, an increase of 11.5% from 1980 (Noe-Bustamante & Flores, 2017). These shifting dynamics, though unprecedented and exciting, come with the simultaneous need to ensure appropriate care for the changing population, including mental health care.

According to the American Psychiatric Association (APA, 2017), Latinx individuals experience a large number of barriers to mental health care, including lack of insurance or adequate insurance coverage, cultural stigma, lack of culturally-sensitive services and professionals, and language barriers. Even though prevalence rates suggest Latinx individuals are at a decreased risk for lifetime mental illness compared to non-Hispanic Caucasian individuals (Alegría et al., 2008; APA, 2017), Latinx individuals who do experience mental illness have an increased risk for pervasive and persistent symptomatology (Breslau et al., 2005). Research suggests limited proficiency in English by Spanish bilinguals lessens likelihood for individuals to recognize the need for specialized mental health care or to use healthcare services (Bauer et al., 2010). Additionally, Latinx individuals may be inaccurately diagnosed due to language barriers and lack of cultural awareness by mental health professionals (Hamilton et al., 2018; Minsky et al., 2003).

It is therefore important to ensure culturally relevant and linguistically accurate evaluation practices in order to promote appropriate mental healthcare for Latinx

individuals. Personality assessment measures are a key component of mental health care and are used in various ways, including psychodiagnostic assessments, employment screenings, pre-surgical evaluations, and in various forensic evaluations. Given the ubiquitous nature of personality assessment instruments, it is important to ensure the tests are appropriate to use across various cultural and ethnic groups, including the US Latinx population.

One of the most well-known personality and psychopathology measures is the Minnesota Multiphasic Personality Inventory (MMPI) family of instruments. The MMPI has undergone several changes since its initial introduction in the 1940s and is currently on the fourth iteration, the MMPI-3, which was released in Fall 2020 (Ben-Porath & Tellegen, 2020). The MMPI is used across various contexts and is available in Spanish to meet the specific needs of Spanish-speaking Latinx individuals within the US; however, little research has thus far been conducted on the reliability of the US Spanish measure and its comparability to the English version. The current study aimed to address this by evaluating the reliability of the US Spanish MMPI-3 and determining the comparability of the US Spanish version to its English counterpart. The overall intent of the current study is to provide empirical support for the use of the Spanish MMPI-3 with Latinx individuals, therefore improving one facet of mental healthcare for this growing population within the US.

History of the MMPI-3 Family of Instruments

The Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1943) is an omnibus measure of personality and psychopathology, written in order to ease the process of differential diagnosis, while accounting for potential response

bias on the account of the examinee. As noted, the MMPI is currently on its fourth iteration, including the original instrument (Hathaway & McKinley, 1943), the MMPI-2 (Butcher et al., 1989), the MMPI-2-RF (Tellegen & Ben-Porath, 2008/2011), and the most recently developed MMPI-3 (Ben-Porath & Tellegen, 2020). Thorough histories of the development of the MMPI family of instruments have been written elsewhere (e.g., Ben-Porath, 2012; Ben-Porath & Archer, 2014; Tellegen & Ben-Porath, 2008; Ben-Porath & Tellegen, 2020); however, a brief overview is outlined here. Notably, this section will discuss only the development of the English MMPI family of instruments. Spanish translations, including the adaptation used in the proposed study, will be described separately.

Prior to the creation of the MMPI, a clear need existed amongst practitioners for reliable objective psychodiagnostic tools. Psychology was undergoing a paradigm shift, transitioning from Freudian-based psychodynamic theory to the Kraeplenian nosology for mental illness (Shorter, 2015). Psychological tests available at the time were predominantly projective and aimed to assess psychodynamic functioning. These tests were difficult to administer, interpret, and apply to the new nosology. In contrast, objective self-report measures of the time were viewed as "overly transparent, and, as a result, subject to manipulative distortion" (Ben-Porath, 2012). As the field of psychology expanded into psychiatric and medical settings, there became a need for omnibus measures to assess broadband psychological functioning and apply across environments (Hathaway & McKinley, 1940). Aware of this need, Hathaway and McKinley set out to create a reliable objective tool to assess personality and psychopathology: the MMPI.

As described in their 1940 paper *A Multiphasic Personality Schedule (Minnesota): Construction of the Schedule*, Hathaway and McKinley created an item pool based on clinical experience and by aggregating material from previously published psychiatric forms, textbooks, neurological and medical cases, and scales on personal and social attitudes. It included 504 true/false items and featured scales measuring a variety of pathological issues. Importantly, the MMPI featured a set of three validity scales meant to determine a respondent's truthfulness. The L (Lie) scale featured 15-items which are admirable but rare in the average person, on which high scores suggest an attempt to paint oneself in an overly positive light. The F scale included 60-items which are uncommonly endorsed by normal populations. High F scales suggests the individual is attempting to make themselves look more pathological than they truly are. The third scale (K) was added at a later date and was meant to gauge potential defensiveness.

Items on individual substantive MMPI scales were chosen based on a method called empirical criterion keying. This method focuses on the use of items which empirically discriminate particular criterion groups (e.g,, diagnostic groups) from a normal comparison group. This method also makes it possible for items to appear less face-valid to respondents, and therefore subject to less distorted responding. In other words, items which demonstrate discriminant validity between two groups may not necessarily contain information relevant to the criterion in question. Therefore, it is less dlikely respondents will know which way to answer the item with particular intent. To establish item content of the measure, two groups were used: a clinical sample, comprised of psychiatric inpatients at the University of Minnesota Hospital, and a comparison group. This normative sample comprised predominantly of family members

visiting the hospital— demographically rural Minnesotans with an average of eight years of education and jobs as farmers or skilled laborers (Ben-Porath, 2012; Hathaway & McKinley, 1943). The same data became the norms for the finalized test, limiting generalizability to more diverse populations.

The MMPI was well-received and quickly became the most widely used psychological instrument across research and clinical settings. To illustrate the exponential growth of the MMPI— in 1941, the year following the introduction of the MMPI, two articles were published using the measure (University of Minnesota, 2011-2020). In 1950, there were 93 articles published with the MMPI, and by 1960, there were 216 (University of Minnesota, 2011-2020). This growth was apparent not only in research settings but applied, clinical settings as well. The MMPI was viewed as an improvement on previously available self-report inventories due to the validity scales, decreased likelihood for distorted/manipulated responses, and usefulness within clinical settings.

Despite the popularity of the MMPI, simultaneous critiques and areas of improvement became apparent within the original MMPI schedule. Primarily, critiques highlighted sexist and already outdated terminology in some items, culturally specific content (e.g., religious questions specific to Christianity), absence of clinically relevant information (e.g., substance use and suicide-related questions) and low generalizability due to sampling (Ben-Porath, 2012). It also became clear the instrument did not meet the standards intended by the authors for use in differential diagnosis. The original MMPI had several psychometric shortcomings, such as low applicability to nonclinical samples, lack of support for the ten clinical scales, and low discriminant validity (Costa et al.,

1985; Popham & Holden, 1991). By the 1950s, several new scales or methods of interpreting the protocols were developed, including a system referred to as code types (Ben-Porath, 2012), which were used to examine patterns of elevations on the MMPI, rather than individual scale elevations. Notably, Hathaway and McKinley were aware of the shortcomings of the original MMPI and intended for the measure to be flexible. Just as the MMPI was created during a nosology shift, they were aware future changes may occur and wanted the measure to demonstrate similar dynamics (Ben-Porath & Tellegen, 2012). Therefore, the need for an updated measure was apparent.

MMPI-2

The MMPI Re-standardization Committee aimed to address critiques of the measure while upholding the integrity of the original MMPI. The committee therefore focused on re-wording problematic items and collecting updated norms. Item level changes were largely grammatical, or terminology based to update temporally related colloquialisms (e.g., removing "streetcars") and remove possibly sexist terminology (Ben-Porath, 2012; Nichols, 2011). Regarding updated norms, the final sample included 2600 individuals (56% female) from across the United States. The committee aimed for the sample to be a more accurate representation of the ethnic demographics in the US; however, there was marked underrepresentation of Hispanic respondents (Nichols, 2011). The MMPI-2 (Butcher et al., 1989) was released in 1989 and featured a total of 567-items.

Despite changes to the measure's items and normative sample, more similarities between the MMPI and the MMPI-2 existed than differences. There were no changes to the standard validity and clinical scales, and the scale level factor structure of the MMPI-

2 was “essentially identical” to that of the MMPI (Nichols, 2011). The primary differences between the two versions, in addition to those described above, were the introduction of three new validity scales (Back F, Variable Response Inconsistency [VRIN], and True Response Inconsistency [TRIN]) and the MMPI-2 content scales. Although minimizing changes between the two forms aligned with the committee’s goal of retaining as much of the original MMPI possible, there remained concerns regarding the scale’s reliability, validity, and mounting evidence of structural issues of the scales (Ben-Porath, 2012). Further, a major issue with the MMPI-2 was the tendency for elevations on numerous (or sometimes all) clinical scales, leading to limited clinical utility and confusion for interpreters and clients alike (Tellegen et al., 2003).

The second MMPI-2 manual (Butcher et al., 2001) attempted to remedy these concerns with minimal success. First, several scales with limited empirical support, including the Wiener and Harmon Subtle and Obvious scales, Schlenger PTSD scale, and Kean PTSD scales, were discontinued. Second, two additional validity scales were added: Fp (Infrequent Psychopathology; Arbisi & Ben-Porath, 1995) and Superlative Self-Presentation (S; Butcher & Han, 1995). Content component scales, as well as the Personality Psychopathology Five (PSY-5; Harkness et al., 1995; Harkness et al., 2002) scales, and additional supplemental scales were added, aimed to improve the clinical utility of the instrument. However, even with the updated manual, interpretation of the MMPI-2 was largely unchanged from the MMPI. Without significant changes to scales, continued reliance on code-types, and the preference of interpreting some scales over others, interpretation of the MMPI-2 is commonly referred to as an “art,” and exhibits

limited inter-rater reliability (Deskovitz et al., 2016) in addition to other psychometric and validity concerns.

MMPI-2 Restructured Clinical Scales

The Restructured Clinical (RC; Tellegen et al., 2003) scales of the MMPI-2 were an important divergence from the original MMPI-2, both in terms of empirical basis and development strategy. Due to the noted homogeneity of the MMPI-2 scales, the RC scales were created to improve convergent and discriminant validity and ultimately clinical utility of the measure (Ben-Porath & Tellegen, 2008).

Ben-Porath and Tellegen (2003) hypothesized general distress to pervade throughout the clinical scales, leading to homogenized elevations amongst the scales. In other words, they asserted multiple clinical scale elevations on the MMPI/MMPI-2 resulted from a shared distress factor across diagnostic criterion groups. Therefore, through factor analyses, they extracted the Demoralization scale (RCd) to remove the impact of general distress from each clinical scale. For additional clinical scales, exploratory factor analyses were performed to extricate the most meaningful items on each scale and create more "pure" indicators of their intended constructs (Tellegen et al., 2003). Finally, items were added back into the scales to improve internal consistency, ultimately leading to nine distinct RC scales (Table 1).

Table 1

MMPI-2-RF Scales

Scale Abbreviation	Scale Name
Validity Indicators	
CNS	Cannot Say
VRIN-r	Variable Response Inconsistency
TRIN-r	True Response Inconsistency
F-r	Infrequent Responses
Fp-r	Infrequent Psychopathology Responses
FS	Infrequent Somatic Responses
FBS-r	Symptom Validity
RBS	Response Bias
L-r	Uncommon Virtues
K-r	Adjustment Validity
Higher Order (H-O) Scales	
EID	Emotional/Internalizing Dysfunction
THD	Thought Dysfunction
BXD	Behavioral Dysfunction
Restructured Clinical Scales	
RCd	Demoralization
RC1	Somatic Complaints
RC2	Low Positive Emotion

(continued)

Scale Abbreviation	Scale Name
RC3	Cynicism
RC4	Antisocial Behavior
RC6	Ideas of Persecution
RC7	Dysfunctional Negative Emotions
RC8	Aberrant Experiences
RC9	Hypomanic Activation
Somatic/Cognitive Scales	
MLS	Malaise
GIC	Gastro- Intestinal Complaints
HPC	Head Pain Complaints
NUC	Neurological Complaints
COG	Cognitive Complaints
Internalizing Scales	
SUI	Suicidal/Death Ideation
HLP	Helplessness/Hopelessness
SFD	Self-Doubt
NFC	Inefficacy
STW	Stress/Worry
AXY	Anxiety
ANP	Anger Proneness

(continued)

Scale Abbreviation	Scale Name
BRF	Behavior-Restricting Fears
MSF	Multiple Specific Fears
Externalizing Scales	
JCP	Juvenile Conduct Problems
SUB	Substance Abuse
AGG	Aggression
ACT	Activation
Interpersonal Scales	
FML	Family Problems
IPP	Interpersonal Passivity
SAV	Social Avoidance
SHY	Shyness
DSF	Disaffiliativeness
Interest Scales	
AES	Aesthetic-Literary Interests
MEC	Mechanical-Physical Interests
Personality Psychopathology Five (PSY-5) Scales, Revised	
AGG-r	Aggressiveness-Revised
PSYC-r	Psychoticism-Revised
DISC-r	Disconstraint-Revised
NEGE-r	Negative Emotionality/Neuroticism-Revised
INTR-r	Introversion/Low Positive Emotionality-Revised

MMPI-2-RF

To recall the original intent of Hathaway and McKinley, the MMPI was designed to be a dynamic measure. Similar to how the MMPI was created during a zeitgeist shift within the field, from psychodynamic methodologies to Kraeplinian nosology, the MMPI-2-RF was created during a time of the emphasized importance of hierarchical dimensional models of psychopathology over traditional categorical models (Cuthbert, 2005; Kotov et al., 2017; Widiger & Clark, 2000; Widiger & Samuel, 2005). Given the limited discriminant validity of the MMPI-2, the MMPI-2-RF was developed to improve alignment with contemporary views within psychology.

Despite improvements upon the original MMPI with the MMPI-2, there remained notable concerns with the MMPI-2, such as structural and psychometric issues with the clinical scales and minimal validity for the content scales (Ben-Porath, 2012). Further, as researchers began to emphasize the importance of dimensional models for clinical diagnoses, it became evident there was limited utility for code type interpretations and a need for updated protocols. Furthermore, despite the improvements with the RC scales, practitioners and researchers using the MMPI-2 did not readily adopt the RC scales (see Simms, 2006 for summary of initial critiques of the RC scales). Therefore, to address these issues, the MMPI-2-RF used the RC scales as the basis for creating a restructured alternative instrument (Tellegen & Ben-Porath, 2008/2011).

The authors of the MMPI-2-RF aimed to improve upon the MMPI-2 in a variety of ways. Using the RC scales as the core of the instrument, they extracted relevant item content from the MMPI-2 to develop lower order Specific Problem (SP) scales representing the areas of somatic/cognitive, internalizing, externalizing, and interpersonal

dysfunction. Though not subscales per se, they act as more specific lower level constructs in a hierarchical psychopathology structure (e.g., stress/worry is a lower order facet of broader negative affect; substance abuse is a lower order facet of broader antisocial behavior). Further, the authors revised the PSY-5 scales and developed three higher order factors (i.e., the Higher-Order [H-O] scales) that reflected three broad domains of psychopathology (i.e., internalizing, externalizing, and thought dysfunction) identified consistently in the psychopathology literature (McCord et al., 2017; Romero et al., 2017).

In addition to the goal of mapping the instrument onto contemporary psychopathology literature, the authors aimed to improve upon shortcomings of the MMPI-2. For instance, the authors removed item overlap between the scales and removed unnecessary items, thereby increasing content validity of the scales while decreasing item-content (Ben-Porath, 2012; Tellegen & Ben-Porath, 2008). This resulted in a shorter, easier to interpret measure with fewer scale elevations to interpret, a common problem with the MMPI-2. By removing homogeneity of scale evaluation common in the MMPI-2 (p. 8-10), the MMPI-2-RF ensures increased clinical utility and effective interpretation. It is important to note authors used only existing items from the MMPI-2, so clinicians and researchers were able to re-code data already gathered on the MMPI-2 with the new scale structures. Scale additions and changes are available for viewing in Table 1.

Extant research (over 500 studies) has supported the reliability and validity of the MMPI-2-RF across symptoms and settings (see Sellbom, 2019 for an overview). Exploratory factor analysis studies have supported the MMPI-2-RF as a psychometrically sound measure (Hoelzle & Meyer, 2008; Tellegen & Ben-Porath, 2008), research has supported

the discriminant and predictive validity of the MMPI-2-RF across symptomatology (Gervais et al., 2017; Hunter et al., 2014), test-retest reliability over a one week period (Ben-Porath & Tellegen, 2008) and studies have demonstrated increased validity across multiple settings, including universities, forensics, clinical populations, medical settings, and employment screenings (Ben-Porath, 2013; Ben-Porath et al., 2017; Forbey et al., 2010; Marek & Ben-Porath, 2017). Finally, several studies have supported the use of the MMPI-2-RF in the use of modern transdiagnostic approaches and dimensional classifications of mental illness and personality pathology (Anderson et al., 2013; Franz et al., 2017; Marek et al., 2020; McCord et al., 2017; Sellbom, Anderson, & Bagby, 2013; Rogers et al., 2017; Romero et al., 2017; Sellbom, 2017; Sellbom & Arbisi, 2017). Indeed, the structure of the MMPI-2-RF maps onto contemporary models of psychopathology (e.g., Marek et al., 2020) and the PSY-5 scales, in particular, are highly relevant in the assessment of dimensional personality psychopathology constructs as laid out in the DSM-5 Alternative Model for Personality Disorders (AMPD; Anderson et al., 2013; Finn et al., 2014).

Although the MMPI-2-RF is highly reliable and improved upon the clinical utility and psychometric properties of the MMPI-2, it has been met with some criticism. Notably, the MMPI-2-RF is scored using the same norming sample from the MMPI-2 and was introduced as an alternative, rather than a replacement, of its previous version. Additionally, because item content was not revised from the MMPI-2, there was no ability for the addition of scales which may be clinically meaningful to assess, such as non-suicidal self-injury or eating disordered behaviors. Further, because the MMPI-2-RF was intended as an alternative measure, the MMPI-2 is still in use. Both the MMPI-2 and

MMPI-2-RF are available for purchase through Pearson Assessments, and there is continued debate on which measure is preferred (e.g., Ben-Porath, 2017; Ben-Porath, 2019; Ben-Porath & Tellegen, 2018; Butcher et al., 2018; Leone et al., 2018; Williams & Lally, 2017). Therefore, over three decades since the MMPI-2 was created, a completely updated MMPI was necessary.

MMPI-3

The MMPI-3 addressed these concerns through various means by using the structure and scale content of the MMPI-2-RF as its basis. First, the authors of the MMPI-3 gathered new, representative norming data for the measure to match the 2020 census. Demographics, available in the MMPI-3 manual, are representative of the current population (Ben-Porath & Tellegen, 2020). Thus, the normative sample is more ethnically, educationally, and regionally diverse than the samples for the MMPI and the MMPI-2, and is therefore be more generalizable to our current demographics. The sample includes over 20,000 participants and is the largest sample ever obtained for norming purposes of the MMPI. Due to the ubiquitous use of the MMPI, data were collected across many contexts, including universities, mental health, medical, forensic, disability, public safety, and community settings. Ethnically, the sample is comprised of 60.3% White, 14.0% Hispanic, 12.4% Black, 5.1% Asian, 4.5% Mixed Race, and 3.7% Other—an accurate representation of the projected 2020 US population.

The MMPI-3 features revised validity and substantive scales in addition to new scales: Combined Response Inconsistency (CRIN), Eating Concerns (EAT), Compulsivity (CMP), Impulsivity (IMP), and Self-Importance (SFI). Some scales have been significantly modified; for example, anxiety (AXY) has been changed to anxiety-

related experiences (ARX) and stress/worry (STW) has been separated into two distinct content scales (STR and WRY). Less relevant content scales (gastro-intestinal complaints, head pain complaints, multiple specific fears) and the interest scales (e.g., remnants of the MMPI/MMPI-2 Masculinity/Femininity scale, mechanical and aesthetic interests) have been removed. Table 2 provides a full description of scale changes between the MMPI-2-RF and MMPI-3, including removals and additions. The measure features 220 of the original MMPI items (47 of which were revised either during the MMPI-2 or MMPI-3 processes), 43 items of the MMPI-2 (5 revised for the MMPI-3), and 72 new items with a total of 335 (Ben-Porath & Tellegen, 2019). Finally, the reading level necessary to complete the MMPI-3 is a grade equivalency of 4.2 rather than a 4.5, slightly extending inclusivity for respondents with lower reading levels (Ben-Porath & Tellegen, 2020).

Table 2

MMPI-3 Scales

Scale Abbreviation	Scale Name
Validity Indicators	
CRIN	Combined Response Inconsistency
VRIN	Variable Response Inconsistency
TRIN	True Response Inconsistency
F	Infrequent Responses
Fp	Infrequent Psychopathology Responses
FS	Infrequent Somatic Responses
FBS	Symptom Validity
RBS	Response Bias
L	Uncommon Virtues
K	Adjustment Validity
Higher Order (H-O) Scales	
EID	Emotional/Internalizing Dysfunction
THD	Thought Dysfunction
BXD	Behavioral/Externalizing Dysfunction
Restructured Clinical Scales	
RCd	Demoralization
RC1	Somatic Complaints
RC2	Low Positive Emotions

(continued)

Scale Abbreviation	Scale Name
RC3**	Cynicism
RC4	Antisocial Behavior
RC6	Ideas of Persecution
RC7	Dysfunctional Negative Emotions
RC8	Aberrant Experiences
RC9	Hypomanic Activation
Somatic/Cognitive Scales	
MLS	Malaise
GIC**	Gastro-Intestinal Complaints
HPC**	Head Pain Complaints
NUC	Neurological Complaints
EAT*	Eating Concerns
COG	Cognitive Complaints
Internalizing Scales	
SUI	Suicidal/Death Ideation
HLP	Helplessness/Hopelessness
SFD	Self-Doubt
NFC	Inefficacy
STW**	Stress/Worry
STR	Stress/Worry
WRY	Worry

(continued)

Scale Abbreviation	Scale Name
AXY**	Anxiety
ARX	Anxiety-Related Experiences
ANP	Anger Proneness
BRF	Behavior-Restricting Fears
MSF**	Multiple Specific Fears
Externalizing Scales	
FML***	Family Problems
JCP	Juvenile Conduct Problems
SUB	Substance Abuse
IMP*	Impulsivity
AGG	Aggression
ACT	Activation
CYN*	Cynicism
Interpersonal Scales	
IPP**	Interpersonal Passivity
SFI*	Self-Importance
DOM*	Dominance
SAV	Social Avoidance
SHY	Shyness

(continued)

Scale Abbreviation	Scale Name
DSF	Disaffiliativeness
Psychopathology Five (PSY-5) Scales	
AGGR	Aggressivness
PSYC	Psychoticism
DISC	Disconstraint
NEGE	Negative Emotionality/Neuroticism
INTR	Introversion/Low Positive Emotions

Note. * indicates a new or updated scale from the MMPI-2-RF. ** indicates a scale which was removed on the MMPI-3. *** indicates a scale which changed domains.

MMPI Family of Instruments Cross-Culturally

The MMPI was published during World War II, a time when the political and social climate of the US rapidly changed. Although World War II coincided with an increase in racial tension and use of propaganda within the US, the time period also coincided with an increase in employment opportunities and migration for ethnic minorities. African Americans and Mexican Americans played integral roles in the military, as well as filled necessary labor jobs within the US as personnel was largely used on war efforts. For example, the US and Mexico signed into agreement The Bracero Program, which brought over 4.6 million Mexican workers into the US to complete agricultural and menial tasks (Center for History and New Media, 2020; UCLA Labor Center, 2014). Following World War II, the US also experienced a steady increase in foreign immigrants, both legal and undocumented, largely from Mexico (Migration Policy Institute, 2001-2020). Since that time, the US demographic has been shifting from a Caucasian majority to unprecedented increases in ethnic minorities.

These demographic shifts impacted, and continue to affect, the use of the MMPI. Questions of the instrument's cross-cultural validity quickly surfaced. Though research on the MMPI has frequently included diverse samples, research specifically examining its use with diverse populations is fairly sparse. Indeed, most of this research focuses on comparisons of predominantly African American/Black and Caucasian samples across contexts (e.g., Ben-Porath et al., 1995; Gonzales et al., 2019; Marek et al., 2014; Marek, et al., 2015; Munley et al., 2001; Timbrook & Graham, 1994), though there has also been some research specific to Latinx populations. For the purposes of the proposed study, we

will focus on the use of the MMPI with Latinx populations and specific studies on the MMPI-2 and MMPI-2-RF.

MMPI in Latinx Populations

In regards to Latinx populations, there are a few key challenges to highlight. First, what is referred to as "Latinx" contemporarily is a heterogenous group which has historically been labeled various names— "Habanero" (Amaro, 1953), Hispanic, Chicano/a, or Latino/a. Who is classified as Latinx has shifted throughout the years. According to Greene (1987), much early research on Latinx groups were based on surname alone, such that if a subject's last name *sounded* Latinx, they were classified as Latinx, with no regard for their cultural alignment or self-identified ethnic group. The label of Latinx also spans a wide range of countries of origin or cultural groups. For example, within the US, those considered ethnically Latinx are predominantly from Mexican heritage but can also be culturally Puerto Rican, Venezuelan, Spanish, or from many other Central or South American areas. These represent culturally distinct groups which are all labeled using the same identifier. Third, the range not only encompasses national and geographic diversity but linguistic diversity, as Spanish as a language has innumerable regional dialects and cultural nuances. The heterogenous nature of "Latinx" as an ethnic group (both historically and presently), in addition to the vast linguistic differences makes drawing historical comparisons especially challenging. Although we recognize the vast heterogeneity of previous research, we will consider all past MMPI work on Hispanic or Latino/a groups under the umbrella term Latinx. We choose the term Latinx because Latinx is a widely accepted gender-neutral term for Latino/a. Additionally, the National Latinx (formerly Latino) Psychological Association (NLPA)

recently adopted the term Latinx in their name and associated publications (Journal of Latinx Psychology and Latinx Psychology Today), so we chose the same terminology for consistency and solidarity.

The MMPI was used with Latinx populations in several ways. Early research on the MMPI focused on mean differences between Caucasian and Latinx groups (Greene, 1987). Researchers and clinicians used the English MMPI with Latinx individuals, which came with two fundamental issues. First, there was virtually no representation of Latinx individuals within the clinical and norming samples of the MMPI. Therefore, it was difficult to conclude if the empirical findings of MMPI profiles were meaningful and representative for Latinx individuals. Second, many Latinx individuals within the US are Spanish monolinguals or Spanish/English bilinguals. Given the various degrees of English proficiency, individuals may yield invalid or incorrect profiles due to misunderstanding item content. It is also best practice to offer bilingual individuals the opportunity to choose the language in which they complete assessments, as there is a full spectrum of language fluency and individuals may differ on their comfort or capability of disclosing emotionally-based information when using their non-predominant language (Butcher et al, 2007; Kazanas et al., 2019; Velasquez et al., 1997).

Notably, the MMPI-2 normative sample comprised of 2,600 individuals, 73 (2.8%) of which were Latinx (Butcher et al., 2001). Although this is presumably more Latinx representation than the original norms (and was matched to the projected 1990 census), this number is not proportional to current US demographics. This is especially important to consider given the fact the MMPI-2-RF uses the same normative sample as the MMPI-2.

Spanish Translations of the MMPI Family of Instrument/MMPI-Hispana

Despite noted issues with the original MMPI, there were over 150 translations of the measure for use cross-culturally (Butcher et al., 2007), including multiple Spanish translations for regional use. The "official" Spanish translation of the MMPI for the United States was published in 1967 and translated by Rafael Nuñez (Hathaway and McKinley, 1967). Several notable criticisms of the Nuñez translation include the lack of adhering to protocol for measure translation, confusing item translation, and tendency to over-pathologize Latinx responders (Valesquez et al., 1997). With the introduction of the MMPI-2, two separate translations occurred: the *Inventario Multifasico de la Personalidad-2-Minnesota, Version Hispana* (MMPI-Hispana; Garcia-Peltoniemi & Chaviano, 1993) and a translation for Mexico by Lucio, Reyes-Lagunes, & Scott (1994). The MMPI-Hispana replaced the Nuñez translation as the official test for Latinx individuals and used proper translation procedures, including translation and back-translation.

Importantly, no norming sample was collected specific to the MMPI-Hispana; therefore, the same sample for the MMPI-2 was used for comparisons. Additionally, because it was based on the MMPI-2, the MMPI-Hispana was similar to the MMPI in scoring and interpretation. Although the MMPI-Hispana exhibited improved utility with Latinx populations over the MMPI (Velasquez et al., 1997), there were still issues to be addressed. Specifically, due to the heterogony of the Spanish-language, some items are termed in a confusing manner. For example, the word used to translate "excited" does not mean emotionally excited as the English-item but rather sexually excited (Velasquez et al., 1997).

The possibility for inherent ethnic bias (due to lack of representative norms) and applicability for cross cultural use was a major concern with the original MMPI and MMPI-Hispana. Research on the MMPI-Hispana is mixed, with some evidence of over-pathologizing Latinx respondents and others suggesting comparability (Butcher et al., 2007; Greene, 1987; Silberman, 2002; Velasquez et al., 1997; Velasquez et al., 2000). Specifically, a review conducted by Green (1987) found an overall tendency of the MMPI-2/MMPI-Hispana for Latinx individuals to score higher than Caucasian respondents on L and F scales. Due to the limited amount of research, it is difficult to extract broad implications; however, there appears to be an equal number of studies suggesting psychometric soundness and concern.

It is important to note there are three Spanish versions of the MMPI-2-RF: Spanish for Mexico and Central America; Spanish for Spain, South America, and Central America (Castilian); and Spanish for the US. We will be focusing on the development of the US Spanish version; however, each Spanish version for regional use underwent similar procedures for translation and standardization. Each Spanish translation is listed on the University of Minnesota Press and available to purchase through separate retailer (University of Minnesota Press, 2011-2020).

US Spanish MMPI-2-RF

The MMPI-Hispana paved the way for the US Spanish MMPI-2-RF. The US Spanish version of the MMPI-2-RF was created using the Spanish items of the MMPI-Hispana, in a similar procedure as to the creation of the MMPI-2-RF scales from the MMPI-2. In other words, the current US Spanish MMPI-2-RF was created from an extracted item pool of the MMPI-Hispana. Similar to the MMPI-Hispana, no norming

data was collected specific to the US Spanish MMPI-2-RF, meaning the measure continued to use the original MMPI-2 sample for norms. This norming sample is not only ethnically unrepresentative, but linguistically unrepresentative, as the original norms were collected in English. Having appropriate reference groups is imperative in producing accurate personality measure reports and interpretations (Gaddis et al., 2015), and the lack of a representative norming sample may negatively impact the results of a US Spanish MMPI-2-RF protocol. The question of potential bias within the measure, similar to the MMPI-Hispana, also remains.

The effects of the under representative norming sample and potential for bias within the US Spanish MMPI-2-RF are difficult to determine as there is a noted paucity of research on the measure. Available literature includes two doctoral dissertations and one peer-reviewed article. Notably, the peer-reviewed article is published in Spanish and is therefore limited for only Spanish-speakers to interpret. Further, although the doctoral dissertations are thorough in their investigations of the US Spanish MMPI-2-RF, these articles have not undergone the rigor of the peer-review process.

One of the earliest studies on the US Spanish MMPI-2-RF compared MMPI-2 scales to extracted MMPI-2-RF scales in Latinx respondents with depression (Khouri, 2010). The primary goal of the study was to determine if depression difficulties manifested in a comparable manner for Latinx respondents between the MMPI-2 and MMPI-2-RF. The study combined both English and Spanish administrations of the measure (e.g., MMPI-2-RF/US Spanish MMPI-2-RF) for data analyses, so we are unable to extract information regarding specifically the functionality of the US Spanish MMPI-2-RF; however, it is still an important foundational study for the measure. Results

indicated more scale elevations in the MMPI-2-RF scales, specifically Infrequent Responses, Infrequent Somatic Responses, Symptom Validity, Malaise, Neurological Complaints, Cognitive Complaints, and Anxiety. Authors determined this suggested use of the MMPI-2-RF with Latinx respondents was "premature;" however, this finding could also be interpreted as improved sensitivity to pathological symptoms of depression within the MMPI-2-RF.

Most applicable to the proposed study, Kermott (2017) examined comparability of the English MMPI-2-RF with the US Spanish MMPI-2-RF and a smaller sample of the Castilian version. Participants (N = 63) were bilingual adults living in southern California. Subjects were administered both the English and US Spanish MMPI-2-RFs with n = 22 also administered the Castilian version in a single session. Mean results on all scales were then compared using multivariate analysis of various (MANOVA) tests. All analyses between the scale means of the US Spanish and English versions yielded non-significant results, which the researcher suggests implies comparability of the two versions. Because of the limited amount of research on the MMPI-2-RF, it is difficult to extract clear patterns on how the measure functions within Latinx populations; however, it appears the measure has negligible differences within Latinx populations when compared to Caucasian populations.

Spanish MMPI-3

Special considerations by the MMPI-3 authors were taken to ensure the measure is culturally sensitive and linguistically appropriate. Like the English MMPI-3, the US Spanish MMPI-3 features an updated norming sample. For the first time, the MMPI-3 team gathered data not only on ethnically diverse, but linguistically diverse individuals to

ensure appropriate sensitivity (Ben-Porath, 2019; Ben-Porath & Tellegen, 2022). The sample includes 491 bilingual individuals for comparison in addition to 607 Spanish-speaking monolinguals. Additionally, the MMPI-3 re-worded some of the previously noted problematic items. Existing items of concern, in addition to the new items, were translated by Dr. Antonio Puente at University of North Carolina-Wilmington (Ben-Porath & Tellegen, 2019).

Importantly, the Spanish MMPI-3 features its own dedicated manual (Ben-Porath & Tellegen, 2020). The manual features a thorough history of the development of the US Spanish MMPI-3, as well as norming information and instructions on how to accurately use the measure, including administration, scoring, and interpretation. It is important to note some of the data collected for the proposed study are included in the manual's reliability and validity calculations, in addition to data collected through various projects. The sample in the manual features over 1000 unique individuals and is more representative of subjects who will likely use the Spanish MMPI-3 clinically. Taken together, it is clear the MMPI-3 is proactively addressing concerns of ethnic or linguistic bias within the previous editions.

Importance of Culturally Adapted Measures

Test adaptation, while historically focused on direct item translation, has now been acknowledged as a complex and nuanced procedure (Bolaños-Medina & González-Ruiz, 2012). The International Test Commission (ITC; 2018) released a series of guidelines for properly adapting measures, now on its second iteration. The guidelines include 18 considerations for not only properly translating measures, such as traditional translation and back-translation practices, but adapting them to the target cultures, such as

evaluating construct overlap between original and target cultures, minimizing the influence of cultural and linguistic differences, and ensuring translation and adaptation processes consider linguistic, psychological, and cultural differences. Further, the guidelines emphasize the importance of adequate empirical support of the validity and reliability of the translated measure within the target population and the collection of appropriate norming data.

Test bias has also long been discussed in the field (Cleary, 1968); however, there has been a recent emphasis on ensuring culturally sensitive measures beyond the possibility for measurement bias. Indeed, the American Psychological Association (APA, 2002) has guidelines for ethical practices of psychological testing and assessment with ethnic minorities. These include the use of psychological tests which have been validated in the target population and ensuring culturally competent interpretations. Historically, much of the cross-cultural research has focused on group differences, examining Caucasian populations against ethnic minorities and comparing means. This methodology has been deemed outdated and inadequate in ensuring culturally sensitive measures, as group differences do not necessarily reflect bias. Therefore, recent emphasis has been placed on conducting in-depth research on target populations (Leong & Park, 2016).

The MMPI is perfectly slated for this type of cultural competency. The measure has a long history of reliability and validity across numerous populations. Indeed, over 500 studies have examined the reliability/validity of the MMPI-2-RF alone. However, research with ethnic minorities, and the use of unrepresentative norms, has historically been limited. Although research does exist comparing scores of ethnic groups, diversity and multicultural issues are not typically the focus of previous research. Little research

has been conducted on the use of the MMPI in Latinx populations, and a marked dearth of research exists on the US Spanish MMPI. Therefore, it is important to examine not only cross-cultural mean differences, but the function of the form in specific target groups, as well as to further examine the psychometric properties of MMPI translated forms.

The Current Study

Therefore, the current study aimed to examine the functionality of the MMPI-3 with Latinx respondents and to examine psychometric properties of the Spanish translated instrument. The current study was one of the first empirical examinations of the Spanish MMPI-3 and is an important first step in supporting the utility of the translated measure in Latinx populations, in alignment with ITC guidelines (ITC, 2018). The aims of the current study were:

Aim One: Examine the Reliability of the US Spanish MMPI-3

First, we conducted analyses to determine internal consistency of the substantive (content-related) MMPI-3 scales. We predicted the scales would be adequately reliable such that Cronbach alpha scores are .70 or above, with some potentially low values on shorter scales (such as BRF or HLP as reported in the US Spanish MMPI-3 manual). For those scales with lower Cronbach's alpha values, we expected inter-item correlations to be within acceptable ranges.

Aim Two: Examine Comparability of the US Spanish and English MMPI-3

We determined comparability in two ways: 1) comparison of test-retest reliability and 2) convergence and divergence between the forms. Iracheta et al. (2020) submitted preliminary findings regarding test-retest reliability of the US Spanish and English

MMPI-3 to the 55th Annual Symposium on Recent MMPI Research, which suggested negligible differences between the forms. This project was the basis for expecting similar findings within the current study.

Regarding convergence, we first compared same scale mean differences between each language form. We expected there would be no significant differences between means of each scale, suggesting no substantial difference in measurement of each construct. We then anticipated correlation patterns between the forms to demonstrate adequate convergent and divergent validity. Specifically, we expected same scales to render high coefficients and unrelated scales to provide low coefficients.

Aim Three: Examine the Convergent Validity of the US Spanish MMPI-3 with External Psychopathology Criteria

Finally, we determined the US Spanish MMPI-3's convergence with established measures of psychopathology by examining associations with existing measures of personality pathology and broad psychopathology. We expected the scales to be strongly correlated with related-content domains. For example, we anticipated internalizing scales (e.g., SUI or ARX) to correlate with internalizing external criterion measures (e.g., Cross-Cutting Symptom Measures depression and anxiety) and externalizing scales, such as ANP or AGG, to correlate with other externalizing scores, such as PID-5-SF Antagonism. We expected the Spanish MMPI-3 to demonstrate discriminant validity such that scales with unrelated content would not show moderate correlations. Although we anticipated possible evidence of low to moderate associations among several scales, we expected the strongest correlations of both English and Spanish MMPI-3 scales with theoretically expected CCSM and PID-5-SF counterparts.

CHAPTER II

Method

Participants

Participants were undergraduate students at Sam Houston State University (SHSU) and University of Texas-Rio Grande Valley (UTRGV) recruited via online research platforms, in-class announcements, announcements to Latinx student organizations, word-of-mouth, and flyers. For their participation, students enrolled in participating courses received a total of 4-extra credit points (1-point after time point one and 3-points after successful completion of the second time point). Students who are not enrolled in eligible courses are compensated with a $10 or $20 Amazon gift card (see *Procedure* for details) after completing both appointments. The total sample comprised of 320 individuals; however, this was prior to removing invalid protocols using standardized procedures outlined below. Only individuals who self-identified on a demographics questionnaire as Hispanic/Latino/a/Latinx were included in the study, resulting in a total sample of N = 303. The sample was predominantly female (78.0%) with a mean age of 21.34 (*SD* = 5.0). Additional characteristics of the sample are available in Table 3 below.

Table 3

Full Sample Subject Characteristics

	M/n (SD or %) N = 303
Age	21.34 (5.0)
Female Gender	238 (78.0)
First Year in University	124 (40.8)
Spanish Spoken at Home	225 (76.0)
English Primary Media Language	225 (75.3)
English Primarily Spoken with Friends	218 (74.1)
History of Counseling	91 (30.8)
History of Psychotropic Medication	37 (13.1)
History of Psychiatric Hospitalizations	11 (3.6)
History of Diagnosed Mental Illness	37 (12.3)
Current Prescription for Psychotropic Medication	16 (5.3)

Measures

Demographics. The primary investigators authored a brief questionnaire to obtain relevant demographic information in addition to demographic information included on the MMPI-2-RF-EX (discussed below). The demographic survey included three sections: general information (e.g., age, gender, ethnicity), immigration/background (e.g., immigration status, language background), and mental health history (e.g., diagnoses, treatment history).

Spanish Fluency Examination. A brief fluency check was authored by the primary investigator in English. It is a paragraph detailing information described in the consent form with five accompanying questions (see *Appendix* for a copy). The fluency examination was then translated into Spanish by a graduate student fluent in Spanish and back-translated by another Spanish-fluent graduate student. The examination was not used as a data point for the study but instead to ensure appropriate levels of Spanish reading comprehension prior to participation. Because each student was recruited from universities which complete instruction in English, the Spanish fluency check also confirmed Spanish/English bilingual status.

Minnesota Multiphasic Inventory-2-Restructured Form-Extended Battery. (MMPI-2-RF-EX; Tellegen & Ben-Porath, 2008/2011). The MMPI-2-RF-EX is an extended version of the MMPI-2-RF that includes the entirety of the MMPI-2-RF as well as experimental items for the MMPI-3. Both English and US Spanish translation of the MMPI-2-RF-EX described above were administered to the full sample. The entire MMPI-3 item pool can be scored from the MMPI-2-RF-EX. Only valid responses will be used in the current study. Profiles are deemed invalid if: there are 18 or more unanswered

items (CNS); Variable Response Inconsistency (VRIN) greater than a t-score of 80; True Response Inconsistency (TRIN) scores greater than 80; Combined Response Inconsistency (CRIN) greater than 80; Infrequent Responses (F-r) scores greater than 100; and Infrequent Psychopathology Responses (Fp-r) scores greater than 100. After the onset of the COVID-19 pandemic, participants were administered the MMPI-3 online with the permission of the authors (n = 22). A study conducted by Hall, Menton, and Ben-Porath (2022) showed equivalency between the forms, which allowed for inclusion of both the MMPI-2-RF-EX and MMPI-3 administrations in the current study.

The Personality Inventory for DSM-5-Short Form. (PID-5-SF; American Psychiatric Association [APA], 2013; Maples et al., 2015) is a shortened version of the PID-5. The survey was created to measure criterion B of the Alternative Model for Personality Disorders (AMPD; APA, 2013), which features five broad trait domains (Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism) and 25 personality trait facets. From the original 220-item inventory, Maples et al. (2015) used item response theory to extract 100-items to measure the same domains and facets of the full inventory. Items are measured on a four-point Likert scale ranging from 0 (very false or often false) to 3 (very true or often true). Coefficient alphas reported by Maples et al. (2015) on the PID-5-SF facets are moderate to high, ranging from .67 (Irresponsibility) to .91 (Anhedonia). Domain coefficients are similarly high, ranging from .87 (Antagonism) to .91 (Negative Affectivity). It is important to note there was a measure scaling error (i.e., a 5-point instead of a 4-point scale was used) in Qualtrics which decreased the number of viable protocols. A total of n = 35 participants were removed from these analyses for this reason.

DSM-5 Cross-Cutting Symptom Measures. ([CCSM] APA, 2013; Narrow et al., 2013). The CCSM are a set of brief self-report inventories created to assess various common psychopathological symptoms. The measures were adapted from information provided by the PROMIS Health Organization (PHO) and PROMIS Cooperative Group (2008-2012) or other existing symptom measures. The measures include a Level-1 screener comprised of 23-items rated on a five-point Likert scale from 0 (None or Not at all) to 4 (Severe or Nearly every day). If subjects provide answers which indicate high levels of difficulties over the last two weeks, providers can then administer the relevant Level-2 measures (Anger, Anxiety, Depression, Mania, Repetitive Thoughts and Behaviors, Sleep Disturbance, Somatic Symptom, and Substance Use). Both Level 1 and Level 2 measures were administered in the current study, though Level 2 measures will be the focus of analyses. Each Level 2 measure is brief, ranging from five (Anger, Mania, Repetitive Thoughts and Behaviors) to 15 (Somatic Symptom) items. Respective measures feature different scoring methods and clinically significant cutoff scores. For example, the Anger measure features a 5-point Likert scale which is summed into a total score and converted into T-scores. Cutoffs for the Anger scale are: Less than 55 (None to slight), 55.0-59.9 (Mild), 60-69.9 (Moderate), and 70 and over (Severe). The Somatic Symptom measure uses a 3-point Likert scale which is totaled and interpreted based on the following cutoffs: 0-4 (Minimal), 5-9 (Low), 10-14 (Medium), and 15-30 (High). Each CCSM is available for viewing here: https://www.psychiatry.org/psychiatrists/practice/dsm/educational-resources/assessment-measures.

Procedure

The current study used data collected as a part of a larger study. Appropriate IRB approval was obtained from both SHSU and UTRGV, with SHSU as the primary institution (IRB-86-2018; see approval letter in Appendix A). Subjects were recruited via the respective institution's online research platforms, in-class announcements, flyers, and word-of-mouth and signed up for the study online. Subjects enrolled in eligible courses were always granted course credit; subjects from additional recruitment sources were eligible for financial compensation up to $10. This was modified to $20 per person in the Fall of 2021 to increase participation in the study. Prior to the onset of the COVID-19 pandemic, individuals came into the laboratory to complete consent procedures and a brief Spanish fluency check with a trained undergraduate research assistant. Subjects who were unable to accurately complete the Spanish fluency examination were dismissed from the study, which occurred only once during the data collection phase. Following the onset of COVID-19, study procedures were shifted to completely remote administration (via Zoom), which was approved by the appropriate IRBs. These procedures contained similar processes, such that a trained research assistant completed consent procedures and a brief Spanish check with an individual participant.

Data were collected over two time points occurring one week apart. Participants were randomized into four MMPI conditions: Spanish/Spanish (Condition One), Spanish/English (Condition Two), English/Spanish (Condition Three), and English/English (Condition Four). Additional measures were administered in English regardless of condition, where the PID-5-SF was administered at Time One and the CCSM were administered at Time Two. All participants completed the MMPI at the

beginning of their appointment followed by additional measures. Prior to the onset of the COVID-19 pandemic, all measures were administered in paper-and-pencil formats then entered into an SPSS dataset by the author and trained undergraduate research assistants. Following the onset of the pandemic, all surveys were converted to Qualtrics and disseminated via a link. To mimic conditions of in-lab administration and maintain recommended virtual administration of the MMPI-3, a graduate research assistant remained on Zoom for the duration of the testing session. For the purposes of the current study, the aforementioned measures were selected from the larger study battery. Each appointment was approximately two hours, for a total of four participation hours. Following the completion of time point one, subjects were compensated with 1-hour of research credit or nothing, depending on recruitment source. After the completion of timepoint two, participants were granted 3-points of additional credit (total of 4 credits) or a $10 Amazon gift card ($20 Amazon gift card past Fall 2021). Participation was completely voluntary and subjects were not penalized for withdrawal, albeit not receiving compensation.

Data Analytic Plan

The analytic plan for the current study was multi-tiered in order to address the multiple aims. To assess the reliability of the Spanish and English versions of the MMPI-3 in Aim One, we examined the internal consistency and standard error of measurement of the MMPI-3 higher order, clinical, specific problem, and PSY-5 scales using Cronbach alpha analyses. Then, we conducted separate analysis of variance (ANOVA) tests between opposite form subscales to determine if there are mean differences between the scales. For Aim Two, we first examined baseline test-retest reliability of both the English

and Spanish MMPI-3 by conducting zero-order correlations between same language forms administered at time point one and two (e.g., Spanish/Spanish, English/English). We then conducted Steiger's z-tests (Stieger, 1980) to explore the possibility of test-retest magnitude differences between the forms. We then ran correlation analyses between English/Spanish and Spanish/English pairs of the MMPI-3 to determine convergence between the two forms. Finally, for Aim Three, we determined the MMPI-3's convergence with the PID-5-SF and Level 2 DSM Cross-Cutting measures. To do so, we ran separate correlation analyses between Spanish and English MMPI-3 scales with the PID-5-SF and CCSM. We then determined correlation magnitude differences between the US Spanish and English forms using Steiger's z-tests (Steiger, 1980) in order to examine whether the two versions of the instrument had comparable correlates.

Of note, the samples used across analyses differed slightly based on the conditions being used in the study, as not all participants took both versions of the instrument or in the same order. Aim One used only the Spanish and English MMPI-3 that were administered at Time One (i.e., Time One combined for Condition One and Two in Spanish; Time One combined for Condition Three and Four in English). Aim Two used only Condition One and Four for examining baseline test-retest reliability and only Condition Two/Three for Comparability between English and Spanish translations. Finally, Aim Three will again used only measures administered in Time One (i.e., Time One for Condition One and Two in Spanish; Time One for Condition Three and Four in English). Due to the difference in samples used to explore specific aims, a visual depiction is available in Table 4. Table 5 features subject characteristics and sample sizes for each extracted sample.

Table 4

Samples Used for Specific Aims

	Condition 1	Condition 2	Condition 3	Condition 4	Final Sample
Aim One Reliability	TP1	TP1	TP1	TP1	(1) TP1 + (2) TP1 (3) TP1 + (4) TP1
Aim Two Test-Retest	TP1/TP2	-	-	TP1/TP2	(1) TP1 vs. (1) TP2 (4) TP1 vs. (4) TP2
Aim Two Convergence	-	TP1/TP2	TP1/TP2	-	(2) TP1 vs. (3) TP2 (3) TP1 vs. (2) TP2
Aim Two Mean Differences	TP1	-	-	TP1	(1) TP1 vs. (4) TP1
Aim Three External Validity	TP1	TP1	TP1	TP1	(1) TP1 + (2) TP1 (3) TP1 + (4) TP1

Note. Condition 1 = Spanish/Spanish. Condition 2 = Spanish/English. Condition 3 = English/Spanish. Condition 4 = English/English.

Table 5

Subject Characteristics for Samples of Separate Aims

	Spanish MMPI-3	English MMPI-3
Aim One and Three		
n	79	80
Age	21.8 (5.2)	21.1 (5.3)
Female Gender	61 (77.2)	60 (75.0)
First Year in Uni	31 (39.2)	34 (42.5)
Spanish at Home	55 (71.4)	61 (78.2)
English Media	63 (81.8)	60 (76.9)
English with Friends	62 (82.7)	51 (66.2)
Hx of Counseling	20 (26.7)	24 (30.8)
Hx of Hospitalizations	3 (3.8)	1 (1.3)
Hx of MI	10 (12.7)	8 (10.5)
Hx of Psych Meds	9 (12.2)	8 (10.8)
Current Psych Meds	3 (3.8)	4 (5.1)
Aim Two		
n		
Age	68	76
Female Gender	21.4 (4.9)	21.1 (4.7)
First Year in Uni	52 (76.5)	63 (82.9)
Spanish at Home	29 (42.6)	28 (36.8)

(continued)

	Spanish MMPI-3	English MMPI-3
English Media	48 (76.2)	59 (77.6)
English Media	48 (76.2)	59 (77.6)
English with Friends	54 (81.8)	48 (63.2)
Hx of Counseling	46 (69.7)	57 (77.0)
Hx of Hospitalizations	23 (35.4)	23 (30.7)
Hx of MI	9 (13.2)	9 (12.0)
Hx of Psych Meds	10 (16.1)	9 (12.7)
Current Psych Meds	5 (7.5)	3 (4.0)

Note. Uni = University. Psych Meds = Psychotropic Medication. MI = Mental Illness

CHAPTER III

Results

Internal Consistency

First, we investigated the internal consistency for Spanish and English MMPI-3 Higher Order, Restructured Clinical, and Substantive scales using Cronbach's alpha. Scales were interpreted using guidelines suggested by George and Mallery (2003): greater than .90 = Excellent, between .80 and .89 = Good, between .71 and .79 = Acceptable, between .60 and .69 = Questionable, between .50 and .59 = Poor, and less than .49 = Unacceptable. The Spanish MMPI-3 had 33 scales with acceptable Cronbach's alpha values: (α = .71 [RC8] - .92 [ARX]). Four scales of the Spanish MMPI-3 were within the questionable range: (α = .65 [SAV] - .69 [RC2]). Finally, a total of five scales were in the Poor range: (α = .51 [STR] - .59 [MLS]). The English MMPI-3 had 31 scales within the acceptable to excellent reliability range: (α = .70 [RC4] - .92 [EID, RCd]). Six scales were within the questionable range: (α = .61 [AGGR] - .67 [RC2, MLS, ACT, DSF]). Finally, five scales were within the unacceptable range: (α = .49 [BRF] - .59 [STR]). Reliability coefficients for each scale score are available in Table 6 (p. 55-58). Means are also included in these tables and have been converted to T-scores for more accurate comparison.

We then calculated the inter-item correlation for each scale of the Spanish and English MMPI-3. Inter-item correlations should fall between the range of .15 to .50 and are unimpacted by the length of the scale. Most of the Spanish MMPI-3 scales were within the ideal range with some exceptions. Six scales were below the acceptable range: (r = .08 [AGGR] - .14 [THD, BXD, RC2, DOM]), and five scales were above the

acceptable range (r = .50 [DSF] - .59 [SUI]). For the English version, there were four scales below the acceptable range (*r* = .09 [AGGR] - .14 [RC2]), and there were no scales above the acceptable range. All inter-item correlation coefficients are available in Table 6 (p. 55-58).

Table 6

Reliability, Means, and Inter-Item Correlations of US Spanish MMPI-3

	Internal Consistency Cronbach's alpha		Mean (SD)		Average Inter-Item Correlation	
	Spanish	English	Spanish	English	Spanish	English
Higher-Order Scales						
EID	0.88	0.92	50.22 (10.3)	49.54 (9.6)	0.15	0.20
THD	0.80	0.85	49.10 (7.8)	49.65 (9.0)	0.14	0.18
BXD	0.83	0.81	49.79 (9.3)	50.67 (9.9)	0.14	0.15
Restructured Clinical Scales						
RCd	0.86	0.92	50.45 (10.2)	49.68 (10.1)	0.27	0.39
RC1	0.75	0.83	49.72 (10.5)	49.96 (9.8)	0.13	0.20
RC2	0.69	0.67	49.79 (10.1)	48.88 (8.5)	0.14	0.14
RC4	0.74	0.70	50.28 (9.9)	50.35 (10.2)	0.17	0.15
RC6	0.72	0.84	49.3 (8.5)	49.54 (8.9)	0.17	0.28
RC7	0.90	0.86	50.33 (9.9)	50.62 (10.3)	0.33	0.25
RC8	0.71	0.74	50.26 (9.4)	50.27 (9.6)	0.18	0.19
RC9	0.78	0.76	49.96 (9.1)	51.00 (9.8)	0.21	0.19

(continued)

	Internal Consistency Cronbach's alpha		Mean (SD)		Average Inter-Item Correlation	
	Spanish	English	Spanish	English	Spanish	English
Somatic/Cognitive Scales						
MLS	0.59	0.67	45.15 (5.5)	10.78 (10.6)	0.17	0.22
NUC	0.57	0.58	49.61 (10.2)	49.95 (9.8)	0.12	0.12
EAT	0.85	0.75	49.39 (10.1)	50.41 (11.8)	0.55	0.39
COG	0.86	0.87	49.99 (10.2)	50.33 (10.3)	0.34	0.38
Internalizing Scales						
SUI	0.91	0.84	49.04 (9.2)	48.32 (9.0)	0.59	0.44
HLP	0.86	0.73	49.89 (10.1)	48.96 (9.9)	0.53	0.35
SFD	0.85	0.87	50.41 (10.1)	48.83 (9.9)	0.44	0.48
NFC	0.84	0.79	50.16 (9.7)	49.26 (9.8)	0.36	0.29
STR	0.51	0.59	50.04 (10.1)	49.89 (9.9)	0.15	0.19
WRY	0.83	0.80	50.54 (10.3)	49.85 (10.4)	0.40	0.36
CMP	0.85	0.80	50.70 (10.0)	52.34 (9.9)	0.41	0.33
ARX	0.92	0.88	50.25 (10.4)	50.50 (10.0)	0.44	0.32
ANP	0.84	0.87	49.71 (10.0)	50.32 (10.4)	0.31	0.35
BRF	0.79	0.49	49.83 (9.5)	48.68 (9.7)	0.36	0.11

(continued)

	Internal Consistency Cronbach's alpha		Mean (SD)		Average Inter-Item Correlation	
	Spanish	English	Spanish	English	Spanish	English
Externalizing Scales						
FML	0.67	0.65	49.85 (9.6)	49.31 (10.6)	0.18	0.16
JCP	0.82	0.53	49.70 (9.5)	50.46 (10.5)	0.41	0.15
SUB	0.68	0.73	50.95 (10.0)	49.27 (9.4)	0.20	0.24
IMP	0.88	0.80	49.98 (10.1)	51.32 (10.7)	0.55	0.36
ACT	0.77	0.67	49.56 (9.1)	50.08 (10.2)	0.30	0.20
AGG	0.75	0.58	49.59 (9.5)	49.96 (10.4)	0.33	0.19
CYN	0.86	0.73	51.53 (9.9)	50.17 (8.4)	0.32	0.18
Interpersonal Scales						
SFI	0.76	0.76	50.07 (9.9)	50.33 (9.5)	0.23	0.24
DOM	0.58	0.67	51.74 (7.9)	49.78 (9.6)	0.14	0.19
DSF	0.87	0.72	49.53 (10.5)	50.40 (10.4)	0.50	0.27
SAV	0.65	0.78	50.79 (10.7)	48.94 (9.7)	0.17	0.28
SHY	0.72	0.76	49.89 (9.6)	48.56 (9.7)	0.27	0.30

(continued)

	Internal Consistency Cronbach's alpha		Mean (SD)		Average Inter-Item Correlation	
	Spanish	English	Spanish	English	Spanish	English
Personality Psychopathology Five Scales						
AGGR	0.56	0.61	50.68 (8.5)	49.91 (9.7)	0.08	0.09
PSYC	0.85	0.80	49.02 (7.6)	49.68 (9.4)	0.24	0.18
DISC	0.82	0.78	50.44 (9.6)	50.85 (10.0)	0.21	0.17
NEGE	0.82	0.85	50.08 (9.5)	50.66 (9.9)	0.24	0.28
INTR	0.73	0.79	49.36 (10.8)	49.24 (10.2)	0.16	0.22

Note. EID = Emotional/Internalizing Dysfunction; THD = Thought Dysfunction; BXD = Behavioral/Externalizing Dysfunction; RCd = Demoralization; RC1 = Somatic Complaints; RC2 = Low Positive Emotions; RC4 = Antisocial Behavior; RC6 = Ideas of Persecution; RC7 = Dysfunctional Negative Emotions; RC8 = Aberrant Experiences; RC9 = Hypomanic Activation. MLS = Malaise; NUC = Neurological Complaints; EAT = Eating Concerns; Cog = Cognitive Complaints; SUI = Suicidal/Death Ideation; HLP = Helplessness/Hopelessness; SFD = Self-Doubt; NFC = Inefficacy; STR = Stress; WRY = Worry; CMP = Compulsivity; ARX = Anxiety-Related Experiences; ANP = Anger Proneness; BRF = Behavior-Restricting Fears. FML = Family Problems; JCP = Juvenile Conduct Problems; SUB = Substance Abuse; IMP = Impulsivity; ACT = Activation; AGG = Aggression; CYN = Cynicism; SFI = Self-Importance; DOM = Dominance; DSF = Disaffiliativeness; SAV = Social Avoidance; SHY = Shyness. AGGR = Aggressiveness. PSYCH = Psychoticism. DISC = Disconstraint. NEGE = Negative Emotionality/Neuroticism. INTR= Introversion/Low Positive Emotions.

Test-Retest Reliability

Test-retest analyses were conducted using zero-order correlations between same language examinations administered at Time Point 1 and Time Point 2. These correlation coefficients are available in Table 7 (p. 61-64). The majority of the Spanish MMPI-3 test-retest coefficients were deemed acceptable. Scales within this classification ranged from *r* = .70 (ACT) to *r* = .90 (ARX). Nine scales fell below the acceptable range: RC2 (*r* = .61), MLS (*r* = .63), NUC (*r* = .62), HLP (*r* = .69), BRF (*r* = .68), AGG (*r* = .58), CYN (*r* = .69), DOM (*r* = .59), and AGGR (*r* = .60). Similarly, the majority of scales for the English MMPI-3 fell within the acceptable range, with the exception of 11 scales [THD (*r* = .64), RC1 (*r* = .64), RC6 (*r* = .51), RC8 (*r* = .63), NUC (*r* = .64), HLP (*r* = .55), STR (*r* = .62), IMP (*r* = .52), ACT (*r* = .66), DSF (*r* = .66), and PSYC (*r* = .54)].

We then compared the test-retest correlation coefficients for between scales on opposite language forms to determine if there were magnitude differences. Out of the 42 scales, there were only eight which exhibited significant differences, the majority of which were medium in magnitude. Thought Dysfunction ([THD]; *r* = .82 [Spanish]/.64 [English]; z = 2.04, *p* = 0.04, *q* = .40), Aberrant Experiences ([RC8]; *r* = .81 [Spanish]/.63 [English]; z = 1.98, *p* = 0.05, *q* = .39), Anxiety-Related Experiences ([ARX]; *r* = .90 [Spanish]/.74 [English]; z = 2.54, *p* = 0.01, *q* = .52), and Impulsivity ([IMP]; *r* = .83 [Spanish]/.52 [English]; z = 3.06, *p* = 0.02, *q* = .61) exhibited higher reliability in the Spanish version than the English version. Anger Proneness ([ANP]; *r* = .81 [Spanish]/.91 [English]; z = 2.06, *p* = 0.04, *q* = .40), Aggression ([AGG] *r* = .58 [Spanish]/.81 [English]; z = 3.01, *p* = 0.02, *q* = .47), Self-Importance ([SFI] *r* = .75 [Spanish]/.88 [English]; z = 2.06, *p* = 0.04, *q* = .40), and Aggressiveness ([AGGR] *r* =

.60 [Spanish]/.79 [English]; z = 1.99, $p = 0.05$, $q = .38$) showed higher reliability in the English form over the Spanish translation.

Table 7

Test-Retest Coefficients, Steiger's Z-Tests, and Mean Comparisons of the US Spanish and English MMPI-3

	Test-Retest		Steiger's Z-Test		Mean Comparison		Convergence
	Spanish	English	z	*p*	F	*p*	*r*
Higher Order Scales							
EID	0.87	0.91	1.04	0.30	0.10	0.75	0.90
THD	0.82	0.64	2.04	.04*	1.12	0.29	0.66
BXD	0.85	0.80	0.67	0.51	1.05	0.31	0.86
Restructured Clinical Scales							
RCd	0.86	0.87	0.28	0.78	0.29	0.59	0.87
RC1	0.73	0.64	0.84	0.40	0.45	0.50	0.73
RC2	0.61	0.71	0.92	0.36	0.13	0.72	0.84
RC4	0.81	0.85	0.67	0.51	0.24	0.62	0.82
RC6	0.71	0.51	1.66	0.10	1.99	0.16	0.68
RC7	0.80	0.89	1.49	0.14	0.70	0.41	0.82
RC8	0.81	0.63	1.98	.05*	0.93	0.34	0.69
RC9	0.74	0.72	0.24	0.81	4.74	.03*	0.80

(continued)

	Test-Retest		Steiger's z-test		Mean Comparison		Convergence
	Spanish	English	z	*p*	F	*p*	*r*
Somatic/Cognitive							
MLS	0.63	0.74	1.00	0.32	0.01	0.93	0.71
NUC	0.62	0.64	0.19	0.85	0.06	0.81	0.55
EAT	0.71	0.81	1.14	0.25	0.00	0.99	0.77
COG	0.88	0.79	1.51	0.13	0.20	0.65	0.88
Internalizing							
SUI	0.86	0.85	0.06	0.96	0.13	0.72	0.90
HLP	0.69	0.55	1.17	0.24	1.11	0.29	0.65
SFD	0.82	0.83	1.59	0.87	0.83	0.36	0.78
NFC	0.77	0.76	0.20	0.85	0.31	0.58	0.75
STR	0.72	0.62	0.93	0.35	0.65	0.42	0.69
WRY	0.73	0.73	0.09	0.93	0.02	0.88	0.84
CMP	0.77	0.77	0.11	0.91	3.41	0.07	0.76
ARX	0.90	0.74	2.54	.01**	0.02	0.89	0.85
ANP	0.81	0.91	2.06	.04*	0.16	0.69	0.85
BRF	0.68	0.75	0.74	0.46	7.10	.01**	0.64

(continued)

	Test-Retest		Steiger's z-test		Mean Comparison		Convergence
	Spanish	English	z	*p*	F	*p*	*r*
Externalizing Scales							
FML	0.82	0.85	0.46	0.65	0.22	0.64	0.79
JCP	0.81	0.77	0.51	0.61	0.47	0.50	0.77
SUB	0.84	0.87	0.43	0.67	0.29	0.59	0.82
IMP	0.83	0.52	3.06	.00***	1.59	0.21	0.78
ACT	0.70	0.66	0.42	0.68	1.33	0.25	0.74
AGG	0.58	0.81	2.30	.02*	0.50	0.48	0.72
CYN	0.69	0.74	0.53	0.60	0.20	0.66	0.81
Interpersonal Scales							
SFI	0.75	0.88	2.06	.04*	0.35	0.56	0.85
DOM	0.59	0.77	1.75	0.08	0.10	0.75	0.80
DSF	0.75	0.66	0.92	0.36	0.78	0.38	0.77
SAV	0.73	0.75	0.16	0.87	0.09	0.77	0.84
SHY	0.81	0.82	0.26	0.80	2.16	0.14	0.83

(continued)

	Test-Retest		Steiger's z-test		Mean Comparison		Convergence
	Spanish	English	z	*p*	F	*p*	*r*
Personality Psychopathology Five Scales							
AGGR	0.60	0.79	1.99	.05*	0.31	0.58	0.81
PSYC	0.74	0.54	1.70	0.09	0.54	0.46	0.55
DISC	0.85	0.84	0.28	0.78	0.00	0.97	0.85
NEGE	0.78	0.75	0.40	0.69	0.91	0.34	0.87
INTR	0.77	0.83	0.87	0.39	0.07	0.79	0.82

Note. EID = Emotional/Internalizing Dysfunction; THD = Thought Dysfunction; BXD = Behavioral/Externalizing Dysfunction; RCd = Demoralization; RC1 = Somatic Complaints; RC2 = Low Positive Emotions; RC4 = Antisocial Behavior; RC6 = Ideas of Persecution; RC7 = Dysfunctional Negative Emotions; RC8 = Aberrant Experiences; RC9 = Hypomanic Activation. MLS = Malaise; NUC = Neurological Complaints; EAT = Eating Concerns; Cog = Cognitive Complaints; SUI = Suicidal/Death Ideation; HLP = Helplessness/Hopelessness; SFD = Self-Doubt; NFC = Inefficacy; STR = Stress; WRY = Worry; CMP = Compulsivity; ARX = Anxiety-Related Experiences; ANP = Anger Proneness; BRF = Behavior-Restricting FearsFML = Family Problems; JCP = Juvenile Conduct Problems; SUB = Substance Abuse; IMP = Impulsivity; ACT = Activation; AGG = Aggression; CYN = Cynicism; SFI = Self-Importance; DOM = Dominance; DSF = Disaffiliativeness; SAV = Social Avoidance; SHY = Shyness. AGGR = Aggressiveness; PSYC = Psychoticism; DISC = Disconstraint; NEGE = Negative Emotionality/Neuroticism; INTR = Introversion/Low Positive Emotionality. * = significant at .05 level.**=significant at .01 level. ***=significant at .001 level.

Convergence and Divergence between Forms

Next, we conducted zero-order correlations between opposite language forms conducted at two different time points using a within-subject design. The correlation coefficients are listed in Table 7 (p. 61-64) located above. The majority of the scales exhibited correlation coefficients above .80, meaning the scales for both language forms overlap as anticipated and were highly correlated. Two scales in particular, EID and SUI, produced .90 correlation coefficients. Most correlations fell in the range of .64 [BRF]-.88 [COG]. However, two scales, NUC (r = .55) and PSYC (r = .55) were within the moderately correlated range.

We also broadly examined correlational patterns to determine convergent and divergent scales. Given the number of correlations coefficients, these associations are available in supplementary tables but patterns of relations are discussed here. First, we examined each scale independently to determine if the strongest association was between the scale or another variable. This was largely true, with the exception of two scales, Self-Doubt (SFD) and Psychoticism (PSYC). Self-Doubt (SFD) was most strongly correlated with EID (r = .84) instead of SFD (r = .78). Although curious, this is not entirely surprising, as EID is the higher order internalizing scale and contains the majority of the items on SFD. Psychoticism (PSYC) was more strongly associated with THD (r = .59) and RC8 (r = .57) rather than PSYC (r = .55).

Patterns were then examined to determine if scales were associated with other theoretically aligned scales while not correlated with unrelated scales. Overall, scales demonstrated strong associations with anticipated scales and either weak or no association with theoretically unrelated scales. For example, BXD was most strongly

associated with RC4 (*r* = .73), RC9 (*r* = .61), JCP (*r* = .67), SUB (*r* = .63), and DISC (*r* = .80) and only exhibited weak correlations with scales measuring emotional dysfunction, internalizing issues, and psychotic symptoms. Further, RCd exhibited strong correlations with EID (*r* = .85), SFD (*r* = .74), NFC (*r* = .72), WRY (*r* = .66), SHY (*r* = .61), and NEGE (*r* = .67) and was weakly associated with scales focused on thought dysfunction, behavioral issues, and interpersonal dysfunction.

Associations with External Criterion Measures

We then compared the MMPI-3 to another broad measure of personality and psychopathology, the Personality Inventory for DSM-5-Short Form (PID-5-SF). Comparisons for these measures are available in Table 8 (p. 68-110). Broadly, MMPI-3 scales from both language versions were most highly correlated with conceptually aligned PID-5-SF domains and traits. For example, we hypothesized all MMPI-3 scales measuring internalizing issues would correlate with Negative Affectivity with some variability in relation to each facet. Specifically, we hypothesized Negative Affectivity would be at least moderately correlated with EID (*r* = .65/.65 [Spanish/English]) , RCd (*r* = .63/.66), RC7 (*r* = .64/.74), STR (*r* = .47/51), WRY (*r* = .61/.71), CMP (*r* = .31/.46), ARX (*r* = .60/.67), ANP (*r* = .33/.41), BRF (*r* .40/.46), SHY (*r* = .43/.41), and NEGE (*r* = .59/.74). To provide additional examples, Psychoticism and its facets were most strongly correlated with Thought Dysfunction ([THD] *r* = .56/.70), Aberrant Experiences ([RC8] *r* = .63/.74), and Psychoticism ([PSYC] *r* = .57/.71). Overall, scales generally showed anticipated associations; however, there were important deviations from the expected associations. Specifically, Compulsivity, Cynicism, Self-Importance, Dominance, Aggressiveness, produced only weak correlations, even with conceptually aligned

domains and facets. Steiger's z-tests demonstrated that correlations were generally consistent between the Spanish and English versions, with a few exceptions wherein the English version generally showed stronger correlations than the Spanish version of the instrument.

Table 8

Comparison of the Personality Inventory for DSM-5-Short Form (PID-5-SF) with the US Spanish and English MMPI-3

Scale	Spanish EID	English EID	Steiger's z-test z	Steiger's z-test *p*	Scale	Spanish THD	English THD	Steiger's z-test z	Steiger's z-test *p*	Scale	Spanish BXD	English BXD	Steiger's z-test z	Steiger's z-test *p*
Neg Affect	0.65	0.65	0.00	1.00		0.49	0.48	0.10	0.92		0.27	0.26	0.08	0.94
Anxiousness	0.64	0.65	0.13	0.90		0.48	0.42	0.57	0.57		0.17	0.17	0.00	1.00
Emo Lab	0.47	0.55	0.83	0.41		0.37	0.45	0.73	0.46		0.28	0.39	0.86	0.39
Hostility	0.37	0.50	1.23	0.22		0.31	0.41	0.88	0.38		0.30	0.52	2.04	.04*
Perseveration	0.55	0.53	0.22	0.83		0.51	0.50	0.10	0.92		0.43	0.33	0.89	0.37
Res Aff	-0.10	-0.15	0.39	0.70		-0.13	-0.15	0.16	0.88		-0.30	-0.32	0.17	0.87
Sep Ins	0.50	0.44	0.59	0.56		0.37	0.36	0.09	0.93		0.21	0.12	0.71	0.48
Submiss	0.38	0.31	0.61	0.55		0.30	0.28	0.17	0.87		0.02	0.16	1.08	0.28

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish EID	English EID	z	*p*	Spanish THD	English THD	z	*p*	Spanish BXD	English BXD	z	*p*
Detachment	0.58	0.64	0.73	0.47	0.38	0.27	0.94	0.35	0.18	0.24	0.48	0.63
Anhedonia	0.63	0.78	2.32	.02*	0.37	0.34	0.26	0.79	0.02	0.22	1.55	0.12
Depressivity	0.58	0.73	2.03	.04*	0.26	0.21	0.40	0.69	0.23	0.16	0.55	0.58
Int Avoid	0.31	0.23	0.66	0.51	0.26	0.10	1.26	0.21	0.21	0.07	1.09	0.28
Suspicious	0.39	0.38	0.09	0.93	0.47	0.57	1.05	0.30	0.02	0.30	2.21	.03*
Withdrawal	0.41	0.47	0.57	0.57	0.25	0.19	0.48	0.63	0.34	0.28	0.51	0.61
Antagonism	0.21	0.28	0.57	0.57	0.37	0.52	1.43	0.15	0.49	0.45	0.39	0.70
Attn Seek	0.02	0.16	1.08	0.28	0.15	0.28	1.04	0.30	0.35	0.29	0.51	0.61
Callousness	0.10	0.12	0.15	0.88	0.21	0.32	0.90	0.37	0.33	0.32	0.09	0.93
Deceitfulness	0.33	0.36	0.26	0.80	0.40	0.41	0.09	0.93	0.41	0.41	0.00	1.00
Grandiosity	0.10	0.17	0.54	0.59	0.20	0.47	2.34	.02*	0.30	0.39	0.78	0.44

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish EID	English EID	z	*p*	Spanish THD	English THD	z	*p*	Spanish BXD	English BXD	z	*p*
Manipulative	0.11	0.19	0.63	0.53	0.32	0.46	1.26	0.21	0.51	0.36	1.42	0.16
Disinhibition	0.48	0.49	0.10	0.92	0.39	0.49	0.95	0.34	0.60	0.51	1.00	0.32
Distractibility	0.49	0.58	0.96	0.34	0.32	0.25	0.58	0.56	0.41	0.39	0.18	0.86
Impulsivity	0.32	0.22	0.82	0.41	0.28	0.45	1.50	0.13	0.54	0.46	0.82	0.42
Irresponsibility	0.37	0.32	0.43	0.67	0.40	0.47	0.66	0.51	0.57	0.28	2.74	.01**
Rigid Perfect	-0.23	-0.36	1.09	0.28	-0.42	-0.43	0.09	0.93	-0.15	-0.27	0.96	0.34
Risk Taking	0.01	0.01	0.00	1.00	0.27	0.43	1.40	0.16	0.47	0.56	0.94	0.35
Psychoticism	0.42	0.34	0.71	0.48	0.56	0.70	1.79	0.07	0.41	0.46	0.47	0.64
Eccentricity	0.32	0.30	0.17	0.87	0.34	0.46	1.09	0.28	0.34	0.46	1.09	0.28
Percept Dys	0.33	0.39	0.53	0.60	0.45	0.69	2.77	.01**	0.23	0.32	0.74	0.46
Unusual	0.36	0.17	1.57	0.12	0.57	0.63	0.72	0.47	0.39	0.31	0.70	0.49

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish RCd	English RCd	z	*p*	Spanish RC1	English RC1	z	*p*	Spanish RC2	English RC2	z	*p*
Neg Affect	0.63	0.66	0.39	0.70	0.46	0.48	0.20	0.85	0.19	0.17	0.16	0.87
Anxiousness	0.61	0.62	0.12	0.90	0.38	0.48	0.94	0.35	0.21	0.24	0.24	0.81
Emo Lab	0.46	0.58	1.26	0.21	0.45	0.53	0.80	0.42	0.06	0.08	0.15	0.88
Hostility	0.33	0.50	1.58	0.12	0.25	0.43	1.56	0.12	0.12	0.14	0.16	0.88
Perseveration	0.57	0.57	0.00	1.00	0.32	0.33	0.09	0.93	0.12	0.18	0.47	0.64
Res Aff	-0.09	-0.15	0.46	0.64	-0.17	-0.02	1.16	0.25	-0.26	-0.23	0.24	0.81
Sep Ins	0.49	0.47	0.20	0.84	0.33	0.21	0.99	0.32	0.19	0.10	0.70	0.48
Submiss	0.33	0.33	0.00	1.00	0.30	0.11	1.52	0.13	0.13	0.05	0.62	0.54

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish RCd	English RCd	z	*p*	Spanish RC1	English RC1	z	*p*	Spanish RC2	English RC2	z	*p*
Detachment	0.56	0.60	0.46	0.65	0.43	0.27	1.40	0.16	0.45	0.56	1.13	0.26
Anhedonia	0.69	0.73	0.62	0.54	0.45	0.42	0.28	0.78	0.43	0.63	2.15	.03*
Depressivity	0.62	0.69	0.94	0.35	0.29	0.30	0.08	0.93	0.34	0.62	2.83	.01**
Int Avoid	0.28	0.25	0.25	0.81	0.17	-0.02	1.46	0.14	0.21	0.20	0.08	0.94
Suspicious	0.40	0.43	0.28	0.78	0.31	0.33	0.17	0.87	0.09	0.11	0.15	0.88
Withdrawal	0.34	0.42	1.05	0.29	0.37	0.23	1.18	0.24	0.40	0.48	0.76	0.45
Antagonism	0.25	0.33	0.67	0.51	0.01	0.31	2.37	.02*	0.04	0.03	0.08	0.94
Attn Seek	0.09	0.18	0.70	0.48	0.00	0.18	1.39	0.17	-0.27	-0.05	1.73	0.08
Callousness	0.06	0.14	0.62	0.54	0.17	0.14	0.23	0.82	0.14	0.07	0.54	0.59
Deceitfulness	0.35	0.42	0.63	0.53	0.15	0.42	2.26	.02*	0.18	0.05	1.01	0.31
Grandiosity	0.11	0.21	0.78	0.43	0.02	0.21	1.47	0.14	-0.08	0.00	0.61	0.54

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish RCd	English RCd	z	*p*	Spanish RC1	English RC1	z	*p*	Spanish RC2	English RC2	z	*p*
Manipulative	0.16	0.21	0.40	0.69	0.10	0.21	0.86	0.39	-0.03	0.02	0.38	0.70
Disinhibition	0.53	0.53	0.00	1.00	0.37	0.40	0.27	0.79	0.10	0.18	0.62	0.53
Distractibility	0.54	0.59	0.56	0.58	0.33	0.36	0.26	0.80	0.13	0.32	1.53	0.13
Impulsivity	0.34	0.25	0.75	0.45	0.30	0.27	0.25	0.80	0.01	-0.04	0.38	0.70
Irresponsibility	0.44	0.37	0.64	0.52	0.27	0.31	0.33	0.74	0.13	0.14	0.08	0.94
Rigid Perfect	-0.19	-0.36	1.41	0.16	-0.23	-0.33	0.83	0.41	-0.02	-0.12	0.77	0.44
Risk Taking	0.09	0.09	0.00	1.00	0.09	0.24	1.18	0.24	-0.16	-0.10	0.47	0.64
Psychoticism	0.45	0.41	0.37	0.71	0.42	0.50	0.78	0.44	0.20	0.13	0.55	0.58
Eccentricity	0.34	0.31	0.26	0.80	0.32	0.37	0.43	0.67	0.14	0.15	0.08	0.94
Percept Dys	0.34	0.47	1.19	0.23	0.38	0.46	0.74	0.46	0.21	0.14	0.55	0.58
Unusual	0.40	0.26	1.20	0.23	0.32	0.43	0.98	0.33	0.15	0.03	0.92	0.36

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish RC4	English RC4	z	*p*	Spanish RC6	English RC6	z	*p*	Spanish RC7	English RC7	z	*p*
Neg Affect	0.19	0.14	0.39	0.70	0.43	0.42	0.09	0.93	0.64	0.74	1.47	0.14
Anxiousness	0.10	0.07	0.23	0.82	0.42	0.37	0.45	0.65	0.66	0.71	0.72	0.47
Emo Lab	0.18	0.25	0.56	0.58	0.33	0.40	0.62	0.54	0.51	0.71	2.47	.01**
Hostility	0.15	0.47	2.74	.01**	0.50	0.33	1.58	0.12	0.50	0.62	1.34	0.18
Perseveration	0.28	0.17	0.89	0.38	0.50	0.39	1.05	0.29	0.57	0.54	0.33	0.74
Res Aff	-0.25	-0.32	0.58	0.56	-0.29	-0.13	1.28	0.20	-0.16	-0.05	0.85	0.40
Sep Ins	0.19	0.03	1.24	0.22	0.33	0.31	0.17	0.87	0.43	0.45	0.19	0.85
Submiss	-0.03	0.03	0.00	1.00	0.15	0.23	0.63	0.53	0.36	0.37	0.09	0.93

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish RC4	English RC4	z	*p*	Spanish RC6	English RC6	z	*p*	Spanish RC7	English RC7	z	*p*
Detachment	0.12	0.23	0.87	0.39	0.38	0.22	1.35	0.18	0.64	0.37	2.82	.01**
Anhedonia	0.21	0.22	0.08	0.94	0.38	0.31	0.61	0.55	0.41	0.48	0.67	0.51
Depressivity	0.19	0.16	0.24	0.81	0.32	0.16	1.30	0.19	0.30	0.37	0.60	0.55
Int Avoid	-0.01	0.04	0.38	0.70	0.22	0.06	1.25	0.21	0.27	0.12	1.19	0.23
Suspicious	0.27	0.18	0.72	0.47	0.55	0.55	0.00	1.00	0.48	0.42	0.57	0.57
Withdrawal	0.08	0.28	1.59	0.11	0.28	0.14	1.12	0.26	0.32	0.26	0.50	0.62
Antagonism	0.38	0.34	0.35	0.73	0.43	0.44	0.09	0.93	0.28	0.40	1.04	0.30
Attn Seek	0.27	0.24	0.25	0.81	0.18	0.35	1.40	0.16	0.12	0.25	1.03	0.30
Callousness	0.22	0.27	0.41	0.69	0.30	0.30	0.00	1.00	0.12	0.10	0.15	0.88
Deceitfulness	0.29	0.32	0.25	0.80	0.37	0.34	0.26	0.79	0.30	0.41	0.96	0.34
Grandiosity	0.27	0.32	0.42	0.68	0.29	0.43	1.23	0.22	0.18	0.32	1.14	0.25

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish RC4	English RC4	z	*p*	Spanish RC6	English RC6	z	*p*	Spanish RC7	English RC7	z	*p*
Manipulative	0.40	0.23	1.45	0.15	0.43	0.37	0.55	0.59	0.23	0.29	0.49	0.62
Disinhibition	0.47	0.37	0.93	0.35	0.45	0.38	0.65	0.52	0.54	0.57	0.33	0.74
Distractibility	0.32	0.33	0.09	0.93	0.34	0.18	1.31	0.19	0.49	0.51	0.20	0.84
Impulsivity	0.38	0.30	0.69	0.49	0.36	0.38	0.18	0.86	0.42	0.41	0.09	0.93
Irresponsibility	0.52	0.19	3.03	.00***	0.46	0.34	1.09	0.28	0.40	0.37	0.27	0.79
Rigid Perfect	-0.11	-0.14	0.23	0.82	-0.30	-0.48	1.63	0.10	-0.31	-0.50	1.75	0.08
Risk Taking	0.35	0.42	0.63	0.53	0.38	0.40	0.18	0.86	0.22	0.16	0.48	0.64
Psychoticism	0.33	0.25	0.67	0.51	0.44	0.58	1.45	0.15	0.49	0.44	0.49	0.63
Eccentricity	0.24	0.32	0.66	0.51	0.33	0.40	0.62	0.54	0.40	0.38	0.18	0.86
Percept Dys	0.23	0.16	0.56	0.58	0.34	0.53	1.80	0.07	0.28	0.42	1.22	0.22
Unusual	0.30	0.09	1.67	0.10	0.39	0.54	1.47	0.14	0.43	0.30	1.15	0.25

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish RC8	English RC8	z	*p*	Spanish RC9	English RC9	z	*p*	Spanish MLS	English MLS	z	*p*
Neg Affect	0.47	0.50	0.30	0.77	0.41	0.40	0.09	0.93	0.37	0.39	0.18	0.86
Anxiousness	0.49	0.42	0.67	0.50	0.35	0.29	0.51	0.61	0.31	0.37	0.52	0.60
Emo Lab	0.35	0.50	1.40	0.16	0.43	0.53	0.99	0.32	0.30	0.38	0.69	0.49
Hostility	0.29	0.48	1.71	0.09	0.37	0.48	1.03	0.31	0.21	0.28	0.57	0.57
Perseveration	0.47	0.51	0.40	0.69	0.52	0.43	0.89	0.38	0.27	0.32	0.43	0.67
Res Aff	-0.20	-0.17	0.24	0.81	-0.25	-0.07	1.41	0.16	-0.08	-0.17	0.70	0.49
Sep Ins	0.32	0.36	0.35	0.73	0.26	0.21	0.40	0.69	0.30	0.23	0.58	0.57
Submiss	0.32	0.29	0.25	0.80	0.16	0.31	1.21	0.23	0.15	0.17	0.16	0.88

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish RC8	English RC8	z	*p*	Spanish RC9	English RC9	z	*p*	Spanish MLS	English MLS	z	*p*
Detachment	0.39	0.29	0.86	0.39	0.30	0.07	1.83	0.07	0.37	0.44	0.64	0.52
Anhedonia	0.40	0.34	0.53	0.60	0.33	0.06	2.16	.03*	0.31	0.53	2.06	.04*
Depressivity	0.28	0.24	0.33	0.74	0.21	0.01	1.55	0.12	0.30	0.52	2.04	.04*
Int Avoid	0.23	0.11	0.94	0.35	0.19	0.07	0.93	0.35	0.21	0.23	0.16	0.87
Suspicious	0.39	0.50	1.05	0.29	0.41	0.37	0.36	0.72	0.27	0.15	0.96	0.34
Withdrawal	0.27	0.21	0.49	0.63	0.19	0.04	1.16	0.25	-0.08	0.27	2.72	.01**
Antagonism	0.37	0.51	1.33	0.18	0.41	0.41	0.00	1.00	0.19	0.12	0.55	0.58
Attn Seek	0.16	0.26	0.80	0.42	0.32	0.30	0.17	0.87	-0.04	0.14	1.38	0.17
Callousness	0.22	0.29	0.57	0.57	0.32	0.19	1.06	0.29	0.08	0.07	0.08	0.94
Deceitfulness	0.41	0.43	0.19	0.85	0.40	0.37	0.27	0.79	0.30	0.19	0.89	0.37
Grandiosity	0.21	0.42	1.79	0.07	0.19	0.30	0.89	0.37	0.02	0.03	0.08	0.94

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish RC8	English RC8	z	*p*	Spanish RC9	English RC9	z	*p*	Spanish MLS	English MLS	z	*p*
Manipulative	0.31	0.45	1.25	0.21	0.41	0.37	0.36	0.72	0.13	0.08	0.39	0.70
Disinhibition	0.46	0.51	0.50	0.62	0.70	0.53	2.11	.04*	0.28	0.41	1.13	0.26
Distractibility	0.43	0.30	1.15	0.25	0.52	0.31	1.95	.05*	0.33	0.50	1.58	0.12
Impulsivity	0.32	0.45	1.17	0.24	0.69	0.57	1.53	0.13	0.11	0.15	0.31	0.76
Irresponsibility	0.41	0.45	0.37	0.71	0.48	0.30	1.63	0.10	0.27	0.30	0.25	0.80
Rigid Perfect	-0.36	-0.36	0.00	1.00	-0.27	-0.33	0.50	0.62	-0.14	-0.12	0.16	0.88
Risk Taking	0.31	0.48	1.54	0.12	0.50	0.51	0.10	0.92	-0.06	-0.03	0.23	0.82
Psychoticism	0.63	0.74	1.59	0.11	0.49	0.51	0.20	0.84	0.25	0.13	0.95	0.34
Eccentricity	0.42	0.53	1.09	0.28	0.45	0.42	0.28	0.78	0.19	0.11	0.63	0.53
Percept Dys	0.49	0.68	2.24	.03*	0.22	0.40	1.53	0.13	0.19	0.17	0.16	0.87
Unusual	0.61	0.64	0.38	0.71	0.44	0.42	0.19	0.85	0.22	0.04	1.40	0.16

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish NUC	English NUC	z	*p*	Spanish EAT	English EAT	z	*p*	Spanish COG	English COG	z	*p*
Neg Affect	0.21	0.28	0.57	0.57	0.35	0.33	0.17	0.86	0.52	0.45	0.70	0.49
Anxiousness	0.18	0.28	0.81	0.42	0.28	0.27	0.08	0.93	0.48	0.44	0.39	0.70
Emo Lab	0.21	0.33	0.99	0.32	0.30	0.36	0.51	0.61	0.44	0.51	0.69	0.49
Hostility	0.06	0.29	1.82	0.07	0.42	0.31	0.97	0.33	0.28	0.44	1.41	0.16
Perseveration	0.11	0.26	1.19	0.24	0.44	0.40	0.37	0.71	0.51	0.36	1.42	0.16
Res Aff	-0.13	-0.04	0.69	0.49	-0.22	-0.11	0.86	0.39	-0.20	-0.15	0.39	0.69
Sep Ins	0.13	0.09	0.31	0.76	0.29	0.23	0.49	0.62	0.38	0.19	1.59	0.11
Submiss	0.17	-0.01	1.39	0.17	0.21	0.25	0.32	0.75	0.23	0.18	0.40	0.69

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish NUC	English NUC	z	*p*	Spanish EAT	English EAT	z	*p*	Spanish COG	English COG	z	*p*
Detachment	0.17	0.20	0.24	0.81	0.35	0.27	0.68	0.50	0.49	0.38	1.04	0.30
Anhedonia	0.21	0.31	0.82	0.41	0.28	0.40	1.04	0.30	0.51	0.48	0.30	0.76
Depressivity	0.08	0.21	1.01	0.31	0.13	0.30	1.36	0.17	0.37	0.42	0.45	0.65
Int Avoid	0.08	-0.02	0.76	0.45	0.14	0.06	0.62	0.54	0.29	0.11	1.46	0.15
Suspicious	0.20	0.22	0.16	0.87	0.24	0.29	0.41	0.68	0.38	0.22	1.35	0.18
Withdrawal	0.11	0.16	0.39	0.70	0.37	0.16	1.73	0.08	0.34	0.31	0.26	0.80
Antagonism	-0.01	0.21	1.70	0.09	0.36	0.24	1.01	0.31	0.20	0.20	0.00	1.00
Attn Seek	-0.05	0.04	0.69	0.49	0.15	0.24	0.71	0.48	0.08	0.10	0.15	0.88
Callousness	0.07	0.17	0.77	0.44	0.23	0.11	0.94	0.35	0.07	0.03	0.31	0.76
Deceitfulness	0.06	0.15	0.70	0.49	0.30	0.23	0.58	0.57	0.32	0.24	0.66	0.51
Grandiosity	-0.08	0.23	1.76	0.08	0.29	0.28	0.08	0.93	0.00	0.16	1.23	0.22

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish NUC	English NUC	z	*p*	Spanish EAT	English EAT	z	*p*	Spanish COG	English COG	z	*p*
Manipulative	-0.01	0.16	1.31	0.19	0.33	0.11	1.77	0.08	0.15	0.11	0.31	0.76
Disinhibition	0.11	0.25	1.11	0.27	0.43	0.29	1.23	0.22	0.72	0.65	1.01	0.31
Distractibility	0.09	0.18	0.70	0.48	0.30	0.30	0.00	1.00	0.76	0.79	0.57	0.57
Impulsivity	0.09	0.20	0.86	0.39	0.41	0.18	1.93	.05*	0.48	0.31	1.54	0.12
Irresponsibility	0.11	0.22	0.86	0.39	0.38	0.18	1.66	0.10	0.50	0.35	1.40	0.16
Rigid Perfect	-0.14	-0.19	0.39	0.70	-0.21	-0.25	0.32	0.75	-0.14	-0.27	1.04	0.30
Risk Taking	0.00	0.26	2.03	.04*	0.24	0.18	0.48	0.63	0.21	0.16	0.40	0.69
Psychoticism	0.17	0.36	1.57	0.12	0.32	0.30	0.17	0.87	0.52	0.30	2.04	.04*
Eccentricity	0.12	0.27	1.19	0.23	0.22	0.19	0.24	0.81	0.45	0.41	0.37	0.71
Percept Dys	0.14	0.34	1.63	0.10	0.22	0.26	0.32	0.75	0.34	0.17	1.39	0.16
Unusual	0.15	0.30	1.21	0.23	0.32	0.31	0.09	0.93	0.44	0.09	2.91	.00***

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish SUI	English SUI	z	*p*	Spanish HLP	English HLP	z	*p*	Spanish SFD	English SFD	z	*p*
Neg Affect	0.39	0.29	0.86	0.39	0.39	0.44	0.46	0.65	0.54	0.56	0.22	0.83
Anxiousness	0.36	0.37	0.09	0.93	0.41	0.43	0.19	0.85	0.51	0.56	0.54	0.59
Emo Lab	0.35	0.20	1.24	0.22	0.33	0.33	0.00	1.00	0.40	0.43	0.28	0.78
Hostility	0.16	0.19	0.24	0.81	0.28	0.34	0.51	0.61	0.27	0.40	1.12	0.26
Perseveration	0.23	0.26	0.24	0.81	0.31	0.46	1.35	0.18	0.45	0.39	0.56	0.58
Res Aff	-0.03	-0.02	0.08	0.94	-0.15	-0.32	1.38	0.17	-0.05	-0.03	0.15	0.88
Sep Ins	0.26	0.17	0.72	0.47	0.22	0.36	1.17	0.24	0.41	0.44	0.28	0.78
Submiss	0.08	0.18	0.78	0.44	0.22	0.32	0.82	0.41	0.31	0.26	0.42	0.68

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish SUI	English SUI	z	*p*	Spanish HLP	English HLP	z	*p*	Spanish SFD	English SFD	z	*p*
Detachment	0.41	0.32	0.79	0.43	0.44	0.60	1.69	0.09	0.50	0.53	0.31	0.76
Anhedonia	0.35	0.47	1.10	0.27	0.48	0.74	3.26	.00***	0.60	0.67	0.90	0.37
Depressivity	0.53	0.61	0.91	0.37	0.47	0.76	3.71	.00***	0.56	0.66	1.22	0.22
Int Avoid	0.32	0.11	1.69	0.09	0.26	0.26	0.00	1.00	0.27	0.21	0.49	0.63
Suspicious	0.30	0.16	1.13	0.26	0.34	0.40	0.53	0.60	0.30	0.34	0.34	0.73
Withdrawal	0.28	0.17	0.89	0.38	0.28	0.40	1.04	0.30	0.30	0.35	0.43	0.67
Antagonism	0.13	0.06	0.54	0.59	0.19	0.29	0.81	0.42	0.12	0.53	3.58	.00***
Attn Seek	0.04	0.19	1.16	0.25	0.05	0.26	1.65	0.10	0.01	0.10	0.69	0.49
Callousness	0.10	-0.04	1.07	0.29	0.10	0.21	0.86	0.39	0.02	0.03	0.08	0.94
Deceitfulness	0.17	0.18	0.08	0.94	0.20	0.36	1.33	0.18	0.26	0.31	0.42	0.68
Grandiosity	0.03	0.04	0.08	0.94	0.15	0.17	0.16	0.88	0.01	0.09	0.61	0.54

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish SUI	English SUI	z	*p*	Spanish HLP	English HLP	z	*p*	Spanish SFD	English SFD	z	*p*
Manipulative	0.12	-0.08	1.53	0.13	0.14	0.19	0.23	0.82	0.03	0.12	0.69	0.49
Disinhibition	0.33	0.14	1.54	0.12	0.36	0.47	1.02	0.31	0.40	0.39	0.09	0.93
Distractibility	0.30	0.29	0.08	0.93	0.31	0.50	1.75	0.08	0.39	0.49	0.95	0.34
Impulsivity	0.22	0.03	1.48	0.14	0.26	0.25	0.08	0.94	0.26	0.15	0.88	0.38
Irresponsibility	0.32	-0.07	3.06	.00***	0.34	0.30	0.34	0.73	0.32	0.25	0.58	0.56
Rigid Perfect	-0.20	-0.23	0.24	0.81	-0.19	-0.36	1.41	0.16	-0.14	-0.30	1.29	0.20
Risk Taking	0.14	-0.05	1.46	0.15	0.15	0.05	0.77	0.44	-0.05	-0.02	0.23	0.82
Psychoticism	0.31	0.09	1.76	0.08	0.31	0.33	0.17	0.87	0.34	0.26	0.67	0.50
Eccentricity	0.21	0.08	1.01	0.31	0.22	0.32	0.82	0.41	0.26	0.20	0.48	0.63
Percept Dys	0.27	0.15	0.96	0.34	0.29	0.32	0.25	0.80	0.25	0.33	0.67	0.51
Unusual	0.27	0.02	1.96	.05*	0.25	0.16	0.72	0.47	0.30	0.16	1.13	0.26

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish NFC	English NFC	z	*p*	Spanish STR	English STR	z	*P*	Spanish WRY	English WRY	z	*p*
Neg Affect	0.47	0.55	0.83	0.41	0.47	0.51	0.40	0.69	0.61	0.71	1.36	0.17
Anxiousness	0.50	0.52	0.21	0.84	0.41	0.53	1.18	0.24	0.71	0.71	0.00	1.00
Emo Lab	0.35	0.53	1.71	0.09	0.48	0.47	0.10	0.92	0.38	0.60	2.24	.03*
Hostility	0.25	0.48	2.04	.04*	0.22	0.29	0.57	0.57	0.34	0.44	0.90	0.37
Perseveration	0.55	0.49	0.63	0.53	0.35	0.33	0.17	0.86	0.49	0.43	0.58	0.56
Res Aff	-0.11	-0.08	0.23	0.82	0.06	0.10	0.31	0.76	-0.08	-0.07	0.08	0.94
Sep Ins	0.35	0.34	0.09	0.93	0.28	0.30	0.17	0.87	0.40	0.46	0.56	0.57
Submiss	0.27	0.36	0.76	0.45	0.32	0.21	0.90	0.37	0.35	0.35	0.00	1.00

(continued)

Scale			Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish NFC	English NFC	z	*p*	Spanish STR	English STR	z	*p*	Spanish WRY	English WRY	z	*p*
Detachment	0.36	0.35	0.09	0.93	0.24	0.21	0.24	0.81	0.31	0.37	0.52	0.60
Anhedonia	0.40	0.50	0.96	0.34	0.19	0.32	1.06	0.29	0.36	0.44	0.73	0.47
Depressivity	0.30	0.44	1.24	0.22	0.16	0.26	0.80	0.42	0.31	0.40	0.79	0.43
Int Avoid	0.27	0.08	1.50	0.13	0.24	0.07	1.33	0.18	0.18	0.15	0.24	0.81
Suspicious	0.32	0.29	0.25	0.80	0.15	0.17	0.16	0.88	0.33	0.32	0.09	0.93
Withdrawal	0.18	0.22	0.32	0.75	0.13	0.08	0.39	0.70	0.18	0.28	0.81	0.42
Antagonism	0.09	0.35	2.01	.04*	-0.02	0.14	1.23	0.22	0.11	0.27	1.27	0.20
Attn Seek	0.09	0.08	0.08	0.94	0.05	0.07	0.15	0.88	0.05	0.23	1.40	0.16
Callousness	-0.04	-0.01	0.23	0.82	-0.10	-0.10	0.00	1.00	-0.05	-0.01	0.31	0.76
Deceitfulness	0.17	0.29	0.97	0.33	0.02	0.17	1.16	0.25	0.19	0.29	0.81	0.42
Grandiosity	0.02	0.16	1.08	0.28	-0.06	0.03	0.69	0.49	0.05	0.13	0.62	0.54

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish NFC	English NFC	z	*p*	Spanish STR	English STR	z	*p*	Spanish WRY	English WRY	z	*p*
Manipulative	0.03	0.14	0.85	0.40	-0.01	0.15	1.23	0.22	0.05	0.26	1.65	0.10
Disinhibition	0.53	0.54	0.11	0.92	0.26	0.30	0.33	0.74	0.43	0.43	0.00	1.00
Distractibility	0.53	0.57	0.22	0.82	0.26	0.42	1.39	0.17	0.41	0.45	0.37	0.71
Impulsivity	0.34	0.33	0.09	0.93	0.18	0.11	0.55	0.59	0.34	0.22	1.00	0.32
Irresponsibility	0.42	0.32	0.89	0.38	0.20	0.13	0.55	0.58	0.27	0.35	0.68	0.50
Rigid Perfect	-0.16	-0.37	1.73	0.08	-0.25	-0.22	0.24	0.81	-0.21	-0.42	1.80	0.07
Risk Taking	0.11	0.10	0.08	0.94	-0.09	-0.13	0.31	0.78	0.10	0.08	0.15	0.88
Psychoticism	0.38	0.34	0.35	0.73	0.12	0.08	0.31	0.76	0.40	0.33	0.62	0.54
Eccentricity	0.32	0.29	0.25	0.80	0.19	0.05	1.09	0.28	0.34	0.29	0.42	0.67
Percept Dys	0.25	0.32	0.58	0.56	0.03	0.15	0.92	0.36	0.27	0.33	0.50	0.62
Unusual	0.32	0.22	0.82	0.41	0.03	0.01	0.15	0.88	0.33	0.22	0.09	0.93

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish CMP	English CMP	z	*p*	Spanish ARX	English ARX	z	*p*	Spanish ANP	English ANP	z	*p*
Neg Affect	0.31	0.46	1.35	0.18	0.60	0.67	0.90	0.37	0.33	0.41	0.71	0.48
Anxiousness	0.32	0.47	1.36	0.17	0.64	0.73	1.30	0.19	0.35	0.34	0.09	0.93
Emo Lab	0.29	0.44	1.32	0.19	0.45	0.62	1.83	0.07	0.32	0.51	1.76	0.08
Hostility	0.25	0.40	1.28	0.20	0.32	0.47	1.36	0.17	0.80	0.78	0.41	0.69
Perseveration	0.30	0.35	0.43	0.67	0.53	0.45	0.80	0.42	0.42	0.39	0.27	0.78
Res Aff	-0.17	-0.14	0.23	0.82	-0.04	0.00	0.31	0.76	-0.16	-0.15	0.08	0.94
Sep Ins	0.17	0.24	0.56	0.58	0.40	0.34	0.53	0.60	0.15	0.19	0.31	0.75
Submiss	0.13	0.26	1.03	0.30	0.29	0.23	0.49	0.62	0.16	0.10	0.47	0.64

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish CMP	English CMP	z	*p*	Spanish ARX	English ARX	z	*p*	Spanish ANP	English ANP	z	*p*
Detachment	0.28	0.21	0.57	0.57	0.41	0.37	0.36	0.72	0.26	0.20	0.48	0.63
Anhedonia	0.36	0.22	1.17	0.24	0.45	0.48	0.29	0.77	0.26	0.19	0.56	0.57
Depressivity	0.31	0.13	1.45	0.15	0.28	0.41	1.13	0.26	0.23	0.14	0.71	0.48
Int Avoid	0.18	0.11	0.55	0.59	0.20	0.12	0.63	0.53	0.09	0.08	0.08	0.94
Suspicious	0.33	0.25	0.67	0.51	0.41	0.35	0.54	0.59	0.40	0.26	1.20	0.23
Withdrawal	0.18	0.17	0.08	0.94	0.30	0.24	0.49	0.62	0.24	0.21	0.24	0.81
Antagonism	0.23	0.32	0.74	0.46	0.22	0.35	1.08	0.28	0.42	0.30	1.05	0.29
Attn Seek	0.05	0.13	0.62	0.54	0.07	0.16	0.70	0.49	0.15	0.19	0.31	0.75
Callousness	0.14	0.15	0.08	0.94	0.05	0.09	0.31	0.76	0.30	0.12	1.44	0.15
Deceitfulness	0.19	0.31	0.98	0.33	0.29	0.38	0.77	0.44	0.35	0.27	0.68	0.50
Grandiosity	0.19	0.26	0.56	0.57	0.05	0.26	1.65	0.10	0.34	0.28	0.51	0.61

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish CMP	English CMP	z	*p*	Spanish ARX	English ARX	z	*P*	Spanish ANP	English ANP	z	*p*
Manipulative	0.21	0.26	0.40	0.68	0.19	0.25	0.48	0.63	0.38	0.23	1.27	0.19
Disinhibition	0.28	0.39	0.95	0.34	0.49	0.47	0.20	0.84	0.43	0.39	0.37	0.49
Distractibility	0.28	0.34	0.51	0.61	0.51	0.46	0.50	0.62	0.29	0.29	0.00	0.51
Impulsivity	0.24	0.26	0.16	0.87	0.30	0.28	0.17	0.87	0.42	0.39	0.27	0.30
Irresponsibility	0.13	0.32	1.53	0.13	0.40	0.35	0.44	0.66	0.37	0.16	1.73	0.40
Rigid Perfect	-0.42	-0.46	0.39	0.71	-0.30	-0.39	0.78	0.44	-0.23	-0.33	0.83	-0.30
Risk Taking	0.28	0.24	0.33	0.74	0.09	0.14	0.39	0.70	0.35	0.30	0.43	0.09
Psychoticism	0.32	0.26	0.33	0.74	0.45	0.50	0.49	0.62	0.30	0.33	0.25	0.45
Eccentricity	0.34	0.27	0.59	0.56	0.39	0.41	0.18	0.86	0.18	0.29	0.89	0.39
Percept Dys	0.27	0.24	0.25	0.81	0.24	0.45	1.83	0.07	0.27	0.29	0.17	0.24
Unusual	0.33	0.14	1.54	0.12	0.39	0.37	0.18	0.86	0.28	0.23	0.41	0.39

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish BRF	English BRF	z	*p*	Spanish FML	English FML	z	*p*	Spanish JCP	English JCP	z	*p*
Neg Affect	0.35	0.27	0.68	0.50	0.20	0.10	0.78	0.44	0.35	0.27	0.68	0.50
Anxiousness	0.36	0.25	0.93	0.35	0.12	0.03	0.69	0.49	0.36	0.25	0.93	0.35
Emo Lab	0.32	0.33	0.09	0.93	0.12	0.18	0.47	0.64	0.32	0.33	0.09	0.93
Hostility	0.31	0.32	0.09	0.93	0.12	0.38	2.13	.03*	0.31	0.32	0.09	0.93
Perseveration	0.25	0.25	0.00	1.00	0.33	0.14	1.54	0.12	0.25	0.25	0.00	1.00
Res Aff	-0.08	-0.15	0.54	0.59	-0.29	-0.30	0.08	0.93	-0.08	-0.15	0.54	0.59
Sep Ins	0.19	0.10	0.70	0.48	0.25	0.04	1.64	0.10	0.19	0.10	0.70	0.48
Submiss	0.11	0.10	0.08	0.94	0.06	0.05	0.08	0.94	0.11	0.10	0.08	0.94

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish BRF	English BRF	z	*p*	Spanish FML	English FML	z	*p*	Spanish JCP	English JCP	z	*p*
Detachment	0.41	0.31	0.88	0.38	0.13	0.12	0.08	0.94	0.41	0.31	0.88	0.38
Anhedonia	0.41	0.40	0.09	0.93	0.22	0.11	0.86	0.39	0.41	0.40	0.09	0.93
Depressivity	0.23	0.41	1.54	0.13	0.21	0.15	0.47	0.64	0.23	0.41	1.54	0.13
Int Avoid	0.21	0.12	0.71	0.48	-0.01	-0.06	0.38	0.70	0.21	0.12	0.71	0.48
Suspicious	0.28	0.33	0.42	0.67	0.25	0.13	0.95	0.34	0.28	0.33	0.42	0.67
Withdrawal	0.33	0.19	1.15	0.25	0.10	0.25	1.18	0.24	0.33	0.19	1.15	0.25
Antagonism	0.20	0.27	0.57	0.57	0.36	0.29	0.60	0.55	0.20	0.27	0.57	0.57
Attn Seek	-0.03	0.24	2.10	.04*	0.31	0.19	0.98	0.33	-0.03	0.24	2.10	.04*
Callousness	0.15	0.27	0.96	0.34	0.16	0.28	0.96	0.34	0.15	0.27	0.96	0.34
Deceitfulness	0.20	0.28	0.65	0.52	0.32	0.23	0.74	0.46	0.20	0.28	0.65	0.52
Grandiosity	0.12	0.24	0.95	0.34	0.19	0.28	0.73	0.47	0.12	0.24	0.95	0.34

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish BRF	English BRF	z	*p*	Spanish FML	English FML	z	*P*	Spanish JCP	English JCP	z	*p*
Manipulative	0.17	0.17	0.00	1.00	0.37	0.23	1.18	0.24	0.17	0.17	0.00	1.00
Disinhibition	0.39	0.32	0.61	0.54	0.46	0.32	1.26	0.21	0.39	0.32	0.61	0.54
Distractibility	0.36	0.36	0.00	1.00	0.30	0.26	0.33	0.74	0.36	0.36	0.00	1.00
Impulsivity	0.26	0.22	0.32	0.75	0.38	0.27	0.94	0.35	0.26	0.22	0.32	0.75
Irresponsibility	0.34	0.11	1.86	0.06	0.54	0.17	3.30	.00***	0.34	0.11	1.86	0.06
Rigid Perfect	-0.15	-0.23	0.63	0.53	-0.09	-0.18	0.70	0.48	-0.15	-0.23	0.63	0.53
Risk Taking	0.15	0.18	0.24	0.81	0.26	0.42	1.39	0.17	0.15	0.18	0.24	0.81
Psychoticism	0.40	0.34	0.53	0.60	0.36	0.23	1.09	0.28	0.40	0.34	0.53	0.60
Eccentricity	0.41	0.32	0.79	0.43	0.26	0.32	0.50	0.62	0.41	0.32	0.79	0.43
Percept Dys	0.18	0.28	0.81	0.42	0.26	0.12	1.11	0.27	0.18	0.28	0.81	0.42
Unusual	0.32	0.22	0.82	0.41	0.35	0.07	2.25	.02*	0.32	0.22	0.82	0.41

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish SUB	English SUB	z	*p*	Spanish IMP	English IMP	z	*p*	Spanish ACT	English ACT	z	*p*
Neg Affect	0.08	0.10	0.15	0.88	0.36	0.40	0.36	0.72	0.36	0.36	0.00	1.00
Anxiousness	-0.03	0.04	0.53	0.59	0.26	0.32	0.50	0.62	0.32	0.29	0.61	0.54
Emo Lab	0.20	0.24	0.32	0.75	0.37	0.48	1.03	0.31	0.34	0.45	1.00	0.32
Hostility	0.14	0.40	2.16	.03*	0.33	0.44	0.99	0.32	0.17	0.31	1.14	0.26
Perseveration	0.22	0.08	1.09	0.27	0.43	0.46	0.29	0.78	0.45	0.26	1.67	0.10
Res Aff	-0.19	-0.17	0.16	0.87	-0.29	-0.12	1.36	0.18	-0.21	0.08	2.24	0.03
Sep Ins	0.06	-0.01	0.53	0.59	0.27	0.23	0.33	0.75	0.24	0.19	0.40	0.69
Submiss	-0.08	-0.10	0.15	0.88	0.08	0.38	2.44	.02*	0.19	0.22	0.24	0.81

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish SUB	English SUB	z	*p*	Spanish IMP	English IMP	z	*p*	Spanish ACT	English ACT	z	*p*
Detachment	0.01	0.25	1.87	0.06	0.24	0.16	0.64	0.53	0.28	-0.01	2.27	.02*
Anhedonia	-0.02	0.19	1.62	0.11	0.32	0.19	1.06	0.29	0.24	0.01	1.79	0.07
Depressivity	0.00	0.09	0.69	0.49	0.29	0.08	1.67	0.10	0.11	-0.04	1.15	0.25
Int Avoid	0.02	0.17	1.16	0.25	0.07	0.05	0.15	0.88	0.24	0.03	1.64	0.10
Suspicious	0.22	0.18	0.32	0.75	0.27	0.29	0.17	0.87	0.35	0.34	0.09	0.93
Withdrawal	0.01	0.22	1.63	0.10	0.18	0.12	0.47	0.64	0.15	-0.08	1.76	0.08
Antagonism	0.38	0.30	0.69	0.49	0.40	0.38	0.18	0.86	0.23	0.28	0.41	0.68
Attn Seek	0.30	0.14	1.29	0.20	0.28	0.21	0.57	0.57	0.22	0.28	0.49	0.63
Callousness	0.26	0.26	0.00	1.00	0.29	0.18	0.89	0.37	0.18	0.11	0.55	0.59
Deceitfulness	0.23	0.31	0.66	0.51	0.41	0.35	0.54	0.59	0.28	0.24	0.33	0.74
Grandiosity	0.34	0.31	0.26	0.80	0.18	0.26	0.64	0.52	0.07	0.22	1.17	0.24

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish SUB	English SUB	z	*p*	Spanish IMP	English IMP	z	*P*	Spanish ACT	English ACT	z	*p*
Manipulative	0.41	0.16	2.09	.04*	0.41	0.36	0.45	0.65	0.22	0.25	0.24	0.81
Disinhibition	0.32	0.23	0.74	0.46	0.67	0.63	0.53	0.60	0.53	0.31	2.06	.04*
Distractibility	0.16	0.27	0.88	0.38	0.46	0.36	0.92	0.36	0.46	0.14	2.72	.01*
Impulsivity	0.29	0.19	0.81	0.42	0.66	0.63	0.39	0.70	0.47	0.38	0.84	0.40
Irresponsibility	0.43	0.06	3.05	.00***	0.52	0.45	0.70	0.49	0.32	0.16	1.30	0.19
Rigid Perfect	-0.09	-0.10	0.08	0.94	-0.20	-0.26	0.48	0.63	-0.28	-0.34	0.51	0.61
Risk Taking	0.37	0.35	0.18	0.86	0.37	0.46	0.83	0.41	0.36	0.35	0.09	0.93
Psychoticism	0.14	0.23	0.71	0.48	0.43	0.46	0.29	0.78	0.45	0.40	0.47	0.64
Eccentricity	0.08	0.24	1.26	0.21	0.42	0.38	0.36	0.72	0.41	0.30	0.96	0.34
Percept Dys	0.05	0.17	0.93	0.35	0.16	0.39	1.91	0.06	0.19	0.32	1.06	0.29
Unusual	0.19	0.14	0.39	0.70	0.38	0.37	0.09	0.93	0.42	0.38	0.36	0.72

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish AGG	English AGG	z	*p*	Spanish CYN	English CYN	z	*p*	Spanish SFI	English SFI	z	*p*
Neg Affect	0.39	0.37	0.18	0.86	0.30	0.43	1.15	0.25	-0.10	-0.13	0.23	0.82
Anxiousness	0.33	0.31	0.17	0.87	0.27	0.34	0.59	0.56	-0.12	-0.24	0.95	0.34
Emo Lab	0.31	0.33	0.17	0.87	0.28	0.42	1.22	0.22	-0.02	-0.08	0.46	0.65
Hostility	0.49	0.49	0.00	1.00	0.27	0.37	0.85	0.40	-0.06	-0.07	0.08	0.94
Perseveration	0.47	0.45	0.19	0.85	0.36	0.34	0.17	0.86	-0.05	-0.12	0.54	0.59
Res Aff	-0.23	-0.30	0.58	0.57	-0.35	-0.18	1.40	0.16	0.12	0.07	0.39	0.70
Sep Ins	0.33	0.29	0.34	0.74	0.20	0.33	1.07	0.29	-0.09	-0.01	0.61	0.54
Submiss	0.16	0.22	0.48	0.64	0.20	0.21	0.08	0.94	-0.06	-0.07	0.08	0.94

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish AGG	English AGG	z	*p*	Spanish CYN	English CYN	z	*p*	Spanish SFI	English SFI	z	*p*
Detachment	0.31	0.33	0.17	0.87	0.37	0.28	0.77	0.44	-0.36	-0.35	0.09	0.93
Anhedonia	0.32	0.38	0.52	0.60	0.28	0.29	0.08	0.93	-0.34	-0.42	0.71	0.48
Depressivity	0.27	0.33	0.50	0.62	0.18	0.16	0.16	0.88	-0.37	-0.49	1.13	0.26
Int Avoid	0.14	0.09	0.39	0.70	0.20	0.16	0.32	0.75	-0.19	-0.13	0.47	0.64
Suspicious	0.39	0.44	0.46	0.65	0.35	0.51	1.51	0.13	0.00	0.09	0.69	0.49
Withdrawal	0.24	0.31	0.58	0.56	0.36	0.19	1.41	0.16	-0.31	-0.26	0.42	0.68
Antagonism	0.48	0.46	0.20	0.85	0.34	0.44	0.90	0.37	0.06	0.18	0.93	0.35
Attn Seek	0.28	0.30	0.17	0.87	0.16	0.26	0.80	0.42	0.34	0.22	1.00	0.32
Callousness	0.40	0.38	0.18	0.86	0.32	0.21	0.90	0.37	-0.06	0.14	1.53	0.13
Deceitfulness	0.43	0.44	0.09	0.93	0.36	0.37	0.09	0.93	-0.05	0.06	0.84	0.40
Grandiosity	0.33	0.35	0.17	0.86	0.21	0.30	0.74	0.46	0.19	0.25	0.48	0.63

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish AGG	English AGG	z	*p*	Spanish CYN	English CYN	z	*P*	Spanish SFI	English SFI	z	*p*
Manipulative	0.46	0.39	0.65	0.51	0.29	0.45	1.05	0.30	0.05	0.17	0.93	0.35
Disinhibition	0.49	0.42	0.67	0.50	0.44	0.36	0.73	0.47	-0.09	-0.12	0.23	0.82
Distractibility	0.37	0.25	1.01	0.31	0.33	0.22	0.91	0.36	-0.12	-0.26	1.11	0.28
Impulsivity	0.39	0.42	0.27	0.78	0.43	0.37	0.55	0.59	0.02	0.06	0.31	0.76
Irresponsibility	0.50	0.30	1.83	0.07	0.31	0.22	0.74	0.46	-0.17	-0.07	0.77	0.44
Rigid Perfect	-0.30	-0.31	0.08	0.93	-0.15	-0.32	1.38	0.17	-0.07	-0.04	0.23	0.82
Risk Taking	0.42	0.42	0.00	1.00	0.29	0.17	0.97	0.33	0.17	0.29	0.97	0.33
Psychoticism	0.47	0.50	0.30	0.77	0.42	0.39	0.27	0.78	-0.06	0.11	1.30	0.19
Eccentricity	0.35	0.42	0.63	0.53	0.35	0.34	0.09	0.93	-0.08	0.07	1.15	0.25
Percept Dys	0.35	0.44	0.81	0.42	0.21	0.37	1.34	0.18	-0.07	0.03	0.76	0.45
Unusual	0.43	0.39	0.37	0.71	0.41	0.26	1.29	0.20	0.00	0.17	1.31	0.19

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish DOM	English DOM	z	*p*	Spanish DSF	English DSF	z	*p*	Spanish SAV	English SAV	z	*p*
Neg Affect	-0.08	-0.07	0.08	0.94	0.09	0.28	1.51	0.13	0.21	0.11	0.78	0.43
Anxiousness	-0.06	-0.17	0.85	0.40	0.19	0.32	1.06	0.29	0.21	0.19	0.16	0.87
Emo Lab	-0.07	0.00	0.54	0.59	0.07	0.28	1.70	0.10	0.08	0.00	0.61	0.54
Hostility	0.11	0.03	0.61	0.54	0.17	0.31	1.14	0.26	0.09	-0.01	0.77	0.44
Perseveration	-0.05	-0.11	0.46	0.65	0.15	0.28	1.04	0.30	0.07	0.11	0.31	0.76
Res Aff	0.00	-0.14	1.08	0.28	-0.27	-0.34	0.59	0.56	-0.20	-0.19	0.08	0.94
Sep Ins	-0.05	0.00	0.38	0.70	-0.05	0.10	1.15	0.25	0.23	0.09	1.10	0.27
Submiss	-0.20	-0.11	0.70	0.48	0.02	0.06	0.31	0.76	0.12	0.05	0.54	0.59

(continued)

Scale			Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish DOM	English DOM	z	*p*	Spanish DSF	English DSF	z	*p*	Spanish SAV	English SAV	z	*p*
Detachment	-0.13	-0.09	0.31	0.76	0.49	0.55	0.63	0.53	0.50	0.54	0.42	0.68
Anhedonia	-0.03	-0.20	1.32	0.19	0.19	0.44	2.14	.03*	0.32	0.39	0.61	0.54
Depressivity	-0.10	-0.24	1.10	0.27	0.10	0.32	1.76	0.08	0.20	0.40	1.69	0.09
Int Avoid	-0.14	0.11	1.92	0.06	0.35	0.28	0.59	0.55	0.23	0.27	0.33	0.75
Suspicious	0.13	0.14	0.08	0.94	0.31	0.22	0.74	0.46	0.08	0.09	0.08	0.94
Withdrawal	-0.11	-0.11	0.00	1.00	0.55	0.57	0.22	0.83	0.57	0.62	0.59	0.56
Antagonism	0.12	0.13	0.08	0.94	0.18	0.17	0.08	0.94	-0.02	0.03	0.38	0.70
Attn Seek	0.23	0.23	0.00	1.00	-0.13	0.04	1.30	0.19	-0.33	-0.08	2.00	.05*
Callousness	0.13	0.14	0.08	0.94	0.34	0.25	0.75	0.45	0.21	0.16	0.40	0.69
Deceitfulness	0.07	0.09	0.15	0.88	0.08	0.09	0.08	0.94	0.07	0.01	0.46	0.65
Grandiosity	0.12	0.09	0.23	0.82	0.25	0.18	0.56	0.58	-0.09	0.02	0.84	0.40

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish DOM	English DOM	z	*p*	Spanish DSF	English DSF	z	*P*	Spanish SAV	English SAV	z	*p*
Manipulative	0.13	0.15	0.16	0.88	0.15	0.16	0.08	0.94	-0.04	0.03	0.53	0.59
Disinhibition	0.15	-0.04	1.16	0.15	0.20	0.17	0.24	0.81	0.03	0.04	0.08	0.94
Distractibility	0.09	-0.26	2.12	.01*	0.13	0.24	0.87	0.38	0.10	0.14	0.31	0.76
Impulsivity	0.20	0.15	0.39	0.69	0.22	0.05	1.32	0.19	-0.03	-0.12	0.69	0.49
Irresponsibility	0.05	0.02	0.23	0.82	0.12	0.10	0.15	0.88	-0.01	0.09	0.77	0.44
Rigid Perfect	-0.01	-0.14	1.00	0.32	-0.27	-0.28	0.08	0.93	-0.07	-0.03	0.31	0.76
Risk Taking	0.34	0.32	0.17	0.86	0.16	0.07	0.70	0.49	-0.17	-0.14	0.31	0.76
Psychoticism	0.08	0.13	0.39	0.70	0.35	0.20	1.24	0.22	0.21	0.03	1.40	0.16
Eccentricity	0.12	0.09	0.23	0.82	0.33	0.24	0.75	0.45	0.19	0.10	0.70	0.48
Percept Dys	0.01	0.01	0.00	1.00	0.22	0.13	0.71	0.48	0.12	0.01	0.84	0.40
Unusual	0.03	0.19	1.24	0.22	0.26	0.09	1.34	0.18	0.17	-0.08	1.92	0.06

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish SHY	English SHY	z	*p*	Spanish AGGR	English AGGR	z	*p*	Spanish PSYC	English PSYC	z	*p*
Neg Affect	0.41	0.45	0.37	0.71	0.03	0.09	0.46	0.65	0.49	0.47	0.20	0.84
Anxiousness	0.47	0.47	0.00	1.00	0.05	0.01	0.31	0.76	0.47	0.38	0.84	0.40
Emo Lab	0.23	0.37	1.18	0.24	0.01	0.14	1.00	0.32	0.38	0.45	0.65	0.52
Hostility	0.05	0.37	2.58	.01**	0.27	0.26	0.08	0.94	0.23	0.39	1.36	0.18
Perseveration	0.30	0.39	0.78	0.44	0.12	0.11	0.08	0.94	0.46	0.47	0.10	0.92
Res Aff	-0.08	-0.05	0.23	0.82	-0.15	-0.28	1.04	0.30	-0.10	-0.16	0.47	0.64
Sep Ins	0.30	0.31	0.08	0.93	0.02	0.09	0.54	0.59	0.37	0.37	0.00	1.00
Submiss	0.36	0.29	0.60	0.55	-0.10	-0.02	0.61	0.54	0.29	0.26	0.25	0.80

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish SHY	English SHY	z	*p*	Spanish AGGR	English AGGR	z	*p*	Spanish PSYC	English PSYC	z	*p*
Detachment	0.24	0.40	1.36	0.17	0.04	0.10	0.46	0.65	0.38	0.27	0.94	0.35
Anhedonia	0.18	0.46	2.41	.02*	0.06	0.02	0.31	0.76	0.41	0.30	0.96	0.34
Depressivity	0.19	0.37	1.50	0.14	0.02	-0.04	0.46	0.65	0.27	0.19	0.65	0.52
Int Avoid	0.07	0.10	0.23	0.82	-0.03	0.11	1.07	0.28	0.25	0.13	0.95	0.34
Suspicious	0.15	0.29	1.12	0.26	0.25	0.30	0.41	0.68	0.44	0.55	1.12	0.27
Withdrawal	0.31	0.37	0.52	0.60	0.06	0.10	0.31	0.76	0.23	0.21	0.16	0.87
Antagonism	-0.02	0.17	1.46	0.14	0.29	0.32	0.25	0.80	0.37	0.53	1.54	0.12
Attn Seek	-0.09	-0.07	0.15	0.88	0.26	0.34	0.67	0.50	0.16	0.25	0.72	0.47
Callousness	-0.06	0.06	0.92	0.36	0.33	0.30	0.25	0.80	0.16	0.30	1.13	0.26
Deceitfulness	0.02	0.22	1.55	0.12	0.22	0.25	0.24	0.81	0.42	0.41	0.09	0.93
Grandiosity	-0.06	0.14	1.53	0.13	0.23	0.27	0.33	0.75	0.20	0.47	2.34	.02*

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish SHY	English SHY	z	*p*	Spanish AGGR	English AGGR	z	*P*	Spanish PSYC	English PSYC	z	*p*
Manipulative	-0.03	0.07	0.76	0.45	0.30	0.29	0.08	0.93	0.31	0.47	1.45	0.15
Disinhibition	0.30	0.26	0.33	0.74	0.27	0.13	1.11	0.27	0.38	0.45	0.65	0.52
Distractibility	0.32	0.33	0.09	0.93	0.16	-0.10	2.00	.05*	0.37	0.24	1.10	0.27
Impulsivity	0.33	0.09	1.93	.05*	0.29	0.29	0.00	1.00	0.25	0.42	1.47	0.14
Irresponsibility	0.12	0.18	0.47	0.64	0.23	0.08	1.18	0.24	0.33	0.39	0.53	0.60
Rigid Perfect	-0.14	-0.22	0.63	0.53	-0.15	-0.29	1.12	0.26	-0.37	-0.42	0.45	0.65
Risk Taking	-0.04	-0.04	0.00	1.00	0.41	0.46	0.47	0.64	0.22	0.38	1.35	0.18
Psychoticism	0.26	0.20	0.48	0.63	0.24	0.32	0.66	0.51	0.57	0.71	1.83	0.07
Eccentricity	0.31	0.22	0.74	0.46	0.22	0.28	0.49	0.63	0.32	0.48	1.46	0.15
Percept Dys	0.11	0.19	0.63	0.53	0.14	0.17	0.23	0.82	0.45	0.67	2.49	.01**
Unusual	0.15	0.08	0.54	0.59	0.19	0.31	0.98	0.33	0.61	0.64	0.38	0.71

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish DISC	English DISC	z	*p*	Spanish NEGE	English NEGE	z	*p*	Spanish INTR	English INTR	z	*p*
Neg Affect	0.20	0.19	0.08	0.94	0.59	0.74	2.08	.04*	0.20	0.14	0.47	0.64
Anxiousness	0.09	0.10	0.08	0.94	0.69	0.80	3.09	.01***	0.20	0.21	0.08	0.94
Emo Lab	0.24	0.35	0.92	0.36	0.41	0.64	2.46	.01**	0.07	0.03	0.31	0.76
Hostility	0.18	0.51	2.90	.00***	0.34	0.43	1.15	0.25	0.14	0.02	0.92	0.36
Perseveration	0.35	0.22	1.08	0.28	0.47	0.46	0.10	0.92	0.08	0.13	0.39	0.70
Res Aff	-0.29	-0.29	0.00	1.00	-0.01	-0.01	0.00	1.00	-0.24	-0.20	0.32	0.75
Sep Ins	0.17	0.03	1.08	0.28	0.35	0.42	0.63	0.53	0.23	0.11	0.94	0.35
Submiss	-0.04	0.07	0.84	0.40	0.33	0.33	0.00	1.00	0.06	0.08	0.15	0.88

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish DISC	English DISC	z	*p*	Spanish NEGE	English NEGE	z	*p*	Spanish INTR	English INTR	z	*p*
Detachment	0.09	0.20	0.86	0.39	0.37	0.40	0.27	0.79	0.53	0.56	0.33	0.74
Anhedonia	0.13	0.18	0.39	0.70	0.37	0.49	1.13	0.26	0.42	0.47	0.48	0.63
Depressivity	0.14	0.14	0.00	1.00	0.25	0.44	1.65	0.10	0.30	0.44	1.24	0.22
Int Avoid	0.01	0.07	0.46	0.65	0.24	0.16	0.64	0.53	0.22	0.27	0.41	0.69
Suspicious	0.27	0.19	0.65	0.52	0.33	0.33	0.00	1.00	0.13	0.12	0.08	0.94
Withdrawal	0.07	0.23	1.25	0.21	0.25	0.28	0.25	0.81	0.58	0.59	0.12	0.91
Antagonism	0.44	0.36	0.73	0.47	0.11	0.30	1.52	0.13	0.07	0.05	0.15	0.88
Attn Seek	0.35	0.22	1.08	0.28	0.00	0.20	1.55	0.12	-0.29	-0.06	1.82	0.07
Callousness	0.26	0.26	0.00	1.00	-0.07	-0.01	0.46	0.65	0.23	0.17	0.48	0.63
Deceitfulness	0.35	0.35	0.00	1.00	0.17	0.33	1.31	0.19	0.14	0.04	0.77	0.44
Grandiosity	0.28	0.32	0.34	0.74	0.05	0.16	0.85	0.40	-0.02	0.05	0.53	0.59

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish DISC	English DISC	z	*p*	Spanish NEGE	English NEGE	z	*P*	Spanish INTR	English INTR	z	*p*
Manipulative	0.48	0.27	1.88	0.06	0.07	0.26	1.50	0.14	0.05	0.05	0.00	1.00
Disinhibition	0.55	0.46	0.92	0.36	0.39	0.47	0.75	0.45	0.05	0.07	0.15	0.88
Distractibility	0.37	0.36	0.09	0.93	0.42	0.20	1.87	0.06	0.13	-0.06	1.55	0.15
Impulsivity	0.49	0.40	0.86	0.39	0.26	-0.01	2.11	.04*	-0.06	0.17	1.77	0.08
Irresponsibility	0.56	0.26	2.80	.01*	0.25	0.33	0.67	0.51	0.04	0.04	0.00	1.00
Rigid Perfect	-0.12	-0.18	0.47	0.64	-0.31	0.16	3.68	.001***	-0.09	0.05	1.07	0.29
Risk Taking	0.45	0.55	1.02	0.31	0.01	0.26	1.95	.05*	-0.18	0.05	1.77	0.08
Psychoticism	0.32	0.36	0.35	0.73	0.37	0.36	0.09	0.93	0.25	0.07	1.41	0.16
Eccentricity	0.26	0.39	1.11	0.27	0.38	0.33	0.44	0.66	0.19	0.09	0.78	0.44
Percept Dys	0.16	0.23	0.56	0.58	0.19	0.35	1.32	0.19	0.18	0.08	0.78	0.44
Unusual	0.32	0.22	0.82	0.41	0.27	0.21	0.49	0.63	0.22	-0.01	1.78	0.08

Note. [PID-5-SF Variables]. Neg Affectivity = Negative Affectivity. Emo Lab = Emotional Lability. Res Aff = (Lack of) Restricted Affectivity. Sep Ins = Separation Insecurity. Submiss = Submissiveness. Int Avoid = Intimacy Avoidance. Suspicious = Suspiciousness. Attn Seek = Attention Seeking. Manipulative = Manipulativeness. Rigid Perfect = Rigid Perfectionism. Percept Dys = Perceptual Dysregulation. Unusual = Unusual Beliefs and Experiences. [MMPI-3 Variables]. EID = Emotional/Internalizing Dysfunction; THD = Thought Dysfunction; BXD = Behavioral/Externalizing Dysfunction. RCd = Demoralization; RC1 = Somatic Complaints; RC2 = Low Positive Emotions; RC4 = Antisocial Behavior. RC6 = Ideas of Persecution; RC7 = Dysfunctional Negative Emotions; RC8 = Aberrant Experiences; RC9 = Hypomanic Activation. MLS = Malaise; NUC = Neurological Complaints; EAT = Eating Concerns; Cog = Cognitive Complaints. SUI = Suicidal/Death Ideation; HLP = Helplessness/Hopelessness; SFD = Self-Doubt; NFC = Inefficacy. STR = Stress; WRY = Worry; CMP = Compulsivity. ARX = Anxiety-Related Experiences; ANP = Anger Proneness; BRF = Behavior-Restricting Fears. FML = Family Problems; JCP = Juvenile Conduct Problems; SUB = Substance Abuse; IMP = Impulsivity. ACT = Activation; AGG = Aggression; CYN = Cynicism. SFI = Self-Importance; DOM = Dominance; DSF = Disaffiliativeness. SAV = Social Avoidance; SHY = Shyness. AGGR = Aggressiveness; PSYC = Psychoticism; DISC = Disconstraint; NEGE = Negative Emotionality/Neuroticism; INTR = Introversion/Low Positive Emotionality.* = significant at .05 level. ** = significant at .01 level. *** = significant at .001 level.

Both versions of the MMPI-3 were compared to the DSM-5 Cross-Cutting Symptom measures (CCSM). Associations were largely as anticipated, such that MMPI-3 scales were most strongly correlated with conceptually aligned CCSM scales. Importantly, the strongest associations observed were consistently items measuring Anger, Anxiety, and Depression with their MMPI-3 counterparts. There were no significant correlations observed between MMPI-3 scales and CCSM Substance Use. This is likely due to low variance within the sample, such that there was a low level of substance use endorsed within this sample, Steiger's z-tests showed fairly minor differences across language versions, again with most significant differences demonstrating stronger correlations in the English version than the Spanish version. These are available in Table 9 (p. 112-125) below.

Table 9

Comparison of the DSM-5 Cross-Cutting Symptom Measures (CCSM) with the US Spanish and English MMPI-3

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish EID	English EID	z	*p*	Spanish THD	English THD	z	*p*	Spanish BXD	English BXD	z	*p*
Anger	0.36	0.50	1.32	0.19	0.32	0.36	0.35	0.73	0.26	0.44	1.58	0.11
Anxiety	0.55	0.66	1.32	0.19	0.28	0.23	0.41	0.69	0.13	0.18	0.39	0.70
Depression	0.64	0.74	1.46	0.14	0.36	0.21	1.24	0.21	0.17	0.16	0.08	0.94
Mania	-0.41	-0.17	1.99	.05*	-0.02	0.35	2.83	.01**	0.20	0.19	0.08	0.94
RTB	0.26	0.49	2.06	.04*	0.31	0.33	0.17	0.87	0.25	0.15	0.80	0.43
Sleep	0.26	0.38	1.01	0.31	0.31	0.19	0.97	0.33	0.25	0.24	0.08	0.94
Somatic Sx	0.41	0.28	1.07	0.29	0.16	0.19	0.22	0.82	0.17	0.12	0.37	0.71
Substance	-0.07	0.06	0.99	0.32	0.03	0.11	0.61	0.54	-0.03	0.09	0.91	0.36

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish RCd	English RCd	z	*p*	Spanish RC1	English RC1	z	*p*	Spanish RC2	English RC2	z	*p*
Anger	0.39	0.51	1.16	0.25	0.39	0.45	0.56	0.58	0.18	0.19	0.08	0.94
Anxiety	0.49	0.60	1.19	0.23	0.44	0.43	0.09	0.93	0.31	0.41	0.87	0.38
Depression	0.66	0.73	1.03	0.30	0.40	0.41	0.09	0.93	0.34	0.52	1.69	0.09
Mania	-0.36	-0.09	2.16	.03*	-0.18	0.20	2.90	.001***	-0.38	-0.36	0.18	0.86
RTB	0.31	0.50	1.75	0.08	0.29	0.37	0.69	0.49	0.13	0.24	0.87	0.38
Sleep	0.31	0.37	0.51	0.61	0.29	0.23	0.49	0.63	0.13	0.29	1.27	0.20
Somatic Sx	0.44	0.26	1.49	0.14	0.40	0.30	0.83	0.41	0.32	0.37	0.41	0.68
Substance	-0.04	0.08	0.91	0.36	-0.13	0.10	1.76	0.08	-0.05	0.14	1.45	0.15

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish RC4	English RC4	z	*p*	Spanish RC6	English RC6	z	*p*	Spanish RC7	English RC7	z	*p*
Anger	0.19	0.32	1.07	0.29	0.38	0.32	0.52	0.60	0.43	0.63	2.16	.03*
Anxiety	0.12	0.15	0.23	0.82	0.25	0.18	0.56	0.58	0.48	0.57	0.94	0.35
Depression	0.16	0.13	0.23	0.82	0.32	0.21	0.90	0.37	0.47	0.52	0.50	0.61
Mania	0.06	0.05	0.08	0.94	0.11	0.25	1.09	0.27	-0.15	0.12	2.05	.04*
RTB	0.16	0.13	0.23	0.82	0.30	0.28	0.17	0.87	0.29	0.45	1.42	0.16
Sleep	0.16	0.16	0.00	1.00	0.30	0.18	0.97	0.34	0.29	0.34	0.42	0.67
Somatic Sx	0.20	0.08	0.89	0.38	0.21	0.16	0.37	0.71	0.30	0.21	0.70	0.49
Substance	-0.06	0.11	1.30	0.20	-0.04	0.12	1.22	0.22	-0.11	0.03	1.07	0.29

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish RC8	English RC8	z	*p*	Spanish RC9	English RC9	z	*p*	Spanish MLS	English MLS	z	*p*
Anger	0.35	0.42	0.63	0.53	0.29	0.40	0.96	0.34	0.35	0.32	0.26	0.80
Anxiety	0.32	0.30	0.17	0.87	0.20	0.14	0.47	0.64	0.45	0.38	0.64	0.52
Depression	0.33	0.22	0.91	0.37	0.21	0.07	1.09	0.28	0.50	0.57	0.75	0.46
Mania	-0.02	0.30	2.49	.01**	0.29	0.33	0.33	0.74	-0.48	-0.39	0.84	0.40
RTB	0.29	0.36	0.60	0.55	0.30	0.14	1.30	0.20	0.20	0.32	0.99	0.32
Sleep	0.29	0.26	0.25	0.81	0.30	0.17	1.04	0.30	0.20	0.50	2.62	.01**
Somatic Sx	0.24	0.20	0.30	0.76	0.20	0.02	1.32	0.19	0.36	0.28	0.65	0.52
Substance	-0.04	0.10	1.07	0.27	0.01	0.06	0.38	0.70	-0.02	-0.02	0.00	1.00

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish NUC	English NUC	z	*p*	Spanish EAT	English EAT	z	*p*	Spanish COG	English COG	z	*p*
Anger	0.17	0.27	0.81	0.42	0.32	0.26	0.50	0.62	0.40	0.37	0.27	0.79
Anxiety	0.26	0.24	0.16	0.87	0.16	0.33	1.38	0.17	0.41	0.39	0.18	0.86
Depression	0.19	0.24	0.40	0.69	0.31	0.39	0.69	0.49	0.42	0.45	0.28	0.78
Mania	-0.06	0.21	2.06	.04*	-0.10	0.01	0.83	0.41	-0.10	-0.06	0.30	0.76
RTB	0.25	0.25	0.00	1.00	0.12	0.33	1.70	0.09	0.24	0.27	0.25	0.81
Sleep	0.25	0.19	0.48	0.63	0.11	0.13	0.15	0.88	0.24	0.40	1.35	0.18
Somatic Sx	0.21	0.24	0.23	0.82	0.15	0.19	0.30	0.77	0.44	0.12	2.54	.01**
Substance	-0.08	0.11	1.45	0.15	-0.06	0.05	0.84	0.40	-0.15	0.08	1.76	0.08

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish SUI	English SUI	z	*p*	Spanish HLP	English HLP	z	*p*	Spanish SFD	English SFD	z	*p*
Anger	0.19	0.17	0.16	0.87	0.27	0.36	0.77	0.44	0.20	0.43	1.97	.05*
Anxiety	0.19	0.34	1.23	0.22	0.23	0.48	2.19	.03*	0.35	0.59	2.47	.02*
Depression	0.42	0.50	0.77	0.44	0.37	0.60	2.12	.02*	0.51	0.67	1.89	0.06
Mania	-0.12	-0.08	0.31	0.76	-0.16	-0.14	0.15	0.88	-0.37	-0.14	1.87	0.06
RTB	0.17	0.19	0.16	0.87	0.21	0.34	1.08	0.28	0.27	0.41	1.21	0.23
Sleep	0.17	0.25	0.63	0.53	0.21	0.26	0.40	0.69	0.27	0.29	0.16	0.87
Somatic Sx	0.15	0.11	0.29	0.77	0.28	0.30	0.16	0.87	0.32	0.26	0.47	0.64
Substance	0.01	-0.08	0.07	0.49	-0.04	0.20	1.84	0.07	0.09	0.07	0.16	0.87

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish NFC	English NFC	z	*p*	Spanish STR	English STR	z	*p*	Spanish WRY	English WRY	z	*p*
Anger	0.22	0.42	1.72	0.09	0.16	0.28	0.97	0.33	0.34	0.50	1.50	0.14
Anxiety	0.36	0.43	0.63	0.53	0.39	0.44	0.46	0.65	0.55	0.56	0.11	0.91
Depression	0.38	0.47	0.83	0.40	0.34	0.38	0.35	0.73	0.47	0.48	0.10	0.92
Mania	-0.17	0.01	1.22	0.22	-0.12	-0.14	0.15	0.88	-0.16	-0.03	0.99	0.32
RTB	0.16	0.37	1.74	0.08	0.19	0.30	0.90	0.37	0.16	0.31	1.22	0.22
Sleep	0.16	0.29	1.04	0.30	0.19	0.32	1.05	0.29	0.15	0.36	1.71	0.09
Somatic Sx	0.33	0.26	0.56	0.58	0.11	0.08	0.22	0.83	0.31	0.20	0.85	0.39
Substance	-0.12	0.13	2.01	.05*	-0.05	-0.07	0.15	0.89	-0.05	0.04	0.15	0.88

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish CMP	English CMP	z	*p*	Spanish ARX	English ARX	z	*p*	Spanish ANP	English ANP	z	*p*
Anger	0.21	0.19	0.16	0.87	0.38	0.58	2.01	.04*	0.60	0.59	0.12	0.91
Anxiety	0.25	0.16	0.71	0.48	0.58	0.62	0.47	0.64	0.34	0.27	0.59	0.56
Depression	0.21	0.13	0.63	0.53	0.52	0.52	0.00	1.00	0.35	0.28	0.59	0.56
Mania	0.03	0.24	1.62	0.11	-0.20	0.05	1.92	0.06	0.02	0.05	0.23	0.82
RTB	0.28	0.19	0.73	0.46	0.38	0.49	1.04	0.30	0.23	0.25	0.16	0.87
Sleep	0.28	0.12	1.26	0.21	0.38	0.31	0.60	0.55	0.23	0.32	0.74	0.46
Somatic Sx	0.21	0.07	1.03	0.30	0.44	0.30	1.18	0.24	0.19	0.09	0.74	0.46
Substance	0.19	0.06	1.01	0.32	-0.03	0.05	0.61	0.54	-0.17	-0.04	1.00	0.32

(continued)

Scale			Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish BRF	English BRF	z	*p*	Spanish FML	English FML	z	*p*	Spanish JCP	English JCP	z	*p*
Anger	0.11	0.23	0.95	0.34	0.46	0.44	0.19	0.85	0.11	0.20	0.71	0.48
Anxiety	0.21	0.31	0.81	0.42	0.44	0.33	0.98	0.33	0.13	0.07	0.69	0.49
Depression	0.19	0.29	0.81	0.42	0.44	0.41	0.28	0.78	0.14	0.05	0.69	0.49
Mania	-0.07	0.16	1.75	0.08	-0.14	0.03	1.29	0.20	0.06	0.07	0.08	0.94
RTB	-0.01	0.13	2.03	.04*	0.23	0.35	1.00	0.32	0.20	0.02	1.40	0.16
Sleep	-0.01	0.08	0.68	0.50	0.23	0.28	0.41	0.69	0.20	0.13	0.55	0.59
Somatic Sx	0.11	0.15	0.29	0.77	0.40	0.20	1.60	0.11	0.17	0.09	0.59	0.56
Substance	-0.13	0.07	1.53	0.13	-0.17	0.12	2.22	.03*	-0.05	0.11	1.22	0.22

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish SUB	English SUB	z	*p*	Spanish IMP	English IMP	z	*p*	Spanish ACT	English ACT	z	*p*
Anger	0.13	0.36	1.89	0.06	0.22	0.35	1.09	0.28	0.16	0.28	0.97	0.33
Anxiety	-0.05	0.08	0.76	0.45	0.21	0.12	0.70	0.48	0.15	0.13	0.16	0.88
Depression	-0.01	0.10	0.84	0.40	0.25	0.14	0.87	0.38	0.11	0.02	0.69	0.49
Mania	0.23	0.14	0.70	0.48	0.18	0.19	0.08	0.94	0.27	0.38	0.93	0.35
RTB	0.17	0.08	0.70	0.48	0.30	0.23	0.58	0.57	0.20	0.07	1.01	0.31
Sleep	0.17	0.12	0.39	0.70	0.30	0.16	1.21	0.26	0.20	0.06	1.08	0.28
Somatic Sx	-0.05	0.09	1.01	0.31	0.27	0.10	1.28	0.20	0.16	-0.03	1.38	0.17
Substance	0.14	0.08	0.46	0.64	0.02	0.13	0.84	0.40	-0.04	0.01	0.38	0.70

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish AGG	English AGG	z	*p*	Spanish CYN	English CYN	z	*p*	Spanish SFI	English SFI	z	*p*
Anger	0.31	0.55	2.28	.02*	0.19	0.37	1.50	0.13	-0.05	-0.11	0.46	0.64
Anxiety	0.10	0.38	2.27	.02*	0.10	0.30	1.59	0.11	-0.24	-0.41	1.45	0.15
Depression	0.24	0.37	1.09	0.28	0.19	0.22	0.24	0.81	-0.24	-0.42	1.54	0.12
Mania	0.17	0.04	0.99	0.32	0.10	0.12	0.15	0.88	0.33	0.51	1.67	0.10
RTB	0.15	0.30	1.21	0.23	0.15	0.24	0.72	0.47	-0.11	-0.17	0.47	0.64
Sleep	0.15	0.27	0.95	0.34	0.15	0.23	0.63	0.53	-0.11	-0.21	0.78	0.44
Somatic Sx	0.18	0.25	0.53	0.60	0.29	0.06	1.72	0.09	-0.30	-0.23	0.54	0.59
Substance	-0.01	0.13	1.07	0.29	-0.12	0.09	1.60	0.11	0.07	-0.03	0.76	0.45

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish DOM	English DOM	z	*p*	Spanish DSF	English DSF	z	*p*	Spanish SAV	English SAV	z	*p*
Anger	-0.06	0.10	1.23	0.22	0.17	0.34	1.40	0.16	0.14	0.12	0.16	0.88
Anxiety	-0.24	-0.15	0.71	0.48	0.17	0.37	1.64	.001***	0.33	0.32	0.09	0.93
Depression	-0.21	-0.19	0.16	0.87	0.21	0.36	1.24	0.22	0.36	0.35	0.09	0.93
Mania	0.34	0.36	0.09	0.93	-0.09	-0.10	0.08	0.94	-0.43	-0.29	1.22	0.22
RTB	-0.07	-0.05	0.15	0.88	0.27	0.20	0.57	0.57	0.14	0.14	0.00	1.00
Sleep	-0.07	0.01	0.61	0.55	0.27	0.37	0.84	0.40	0.14	0.19	0.39	0.70
Somatic Sx	-0.11	-0.20	0.67	0.51	0.24	0.24	0.00	1.00	0.42	0.21	1.70	0.09
Substance	-0.11	-0.17	0.47	0.64	0.05	0.04	0.08	0.94	-0.09	-0.03	0.46	0.65

(continued)

Scale			Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish SHY	English SHY	z	*p*	Spanish AGGR	English AGGR	z	*p*	Spanish PSYC	English PSYC	z	*p*
Anger	0.08	0.24	1.26	0.21	0.04	0.29	1.98	.05*	0.23	0.42	1.64	0.10
Anxiety	0.28	0.41	1.12	0.26	-0.19	0.01	1.53	0.13	0.22	0.25	0.24	0.81
Depression	0.23	0.33	0.83	0.41	-0.11	-0.02	0.69	0.49	0.29	0.22	0.57	0.57
Mania	-0.22	-0.13	0.70	0.48	0.36	0.30	0.51	0.61	0.00	0.38	3.02	.03**
RTB	-0.04	0.31	2.76	.01**	0.05	0.05	0.00	1.00	0.20	0.33	1.07	0.28
Sleep	-0.04	0.02	0.45	0.65	0.05	0.12	0.53	0.59	0.20	0.23	0.24	0.81
Somatic Sx	0.20	0.18	0.15	0.88	-0.04	-0.09	0.36	0.72	0.14	0.18	0.30	0.77
Substance	-0.12	0.11	1.76	0.08	-0.08	-0.12	0.31	0.76	-0.01	0.07	0.61	0.54

(continued)

	Scale		Steiger's z-test		Scale		Steiger's z-test		Scale		Steiger's z-test	
	Spanish DISC	English DISC	z	*p*	Spanish NEGE	English NEGE	z	*p*	Spanish INTR	English INTR	z	*p*
Anger	0.21	0.37	1.34	0.18	0.35	0.53	1.72	0.09	0.18	0.13	0.39	0.69
Anxiety	0.07	0.08	0.08	0.94	0.63	0.63	0.00	1.00	0.34	0.33	0.09	0.93
Depression	0.09	0.11	0.15	0.88	0.51	0.54	0.32	0.75	0.36	0.39	0.27	0.79
Mania	0.23	0.14	0.70	0.48	-0.23	0.01	1.84	0.07	-0.44	-0.32	1.06	0.29
RTB	0.23	0.11	0.95	0.34	0.28	0.45	1.51	0.13	0.15	0.13	0.16	0.88
Sleep	0.23	0.22	0.08	0.94	0.28	0.36	0.68	0.50	0.15	0.22	0.55	0.58
Somatic Sx	0.10	0.12	0.15	0.88	0.38	0.22	1.28	0.20	0.41	0.23	1.46	0.15
Substance	0.02	0.10	0.61	0.54	-0.05	0.01	1.14	0.25	-0.07	-0.03	0.31	0.76

Note. [CCSM]. RTB = Repetitive Thoughts and Behaviors. Somatic Sx = Somatic Symptoms. Substance = Substance Use. EID = Emotional/Internalizing Dysfunction; THD = Thought Dysfunction; BXD = Behavioral/Externalizing Dysfunction. RCd = Demoralization; RC1 = Somatic Complaints; RC2 = Low Positive Emotions; RC4 = Antisocial Behavior. RC6 = Ideas of Persecution; RC7 = Dysfunctional Negative Emotions; RC8 = Aberrant Experiences; RC9 = Hypomanic Activation. MLS = Malaise; NUC = Neurological Complaints; EAT = Eating Concerns; Cog = Cognitive Complaints. SUI = Suicidal/Death Ideation; HLP = Helplessness/Hopelessness; SFD = Self-Doubt; NFC = Inefficacy. STR = Stress; WRY = Worry; CMP = Compulsivity. ARX = Anxiety-Related Experiences; ANP = Anger Proneness; BRF = Behavior-Restricting Fears. FML = Family Problems; JCP = Juvenile Conduct Problems; SUB = Substance Abuse; IMP = Impulsivity. ACT = Activation; AGG = Aggression; CYN = Cynicism. SFI = Self-Importance; DOM = Dominance; DSF = Disaffiliativeness. SAV = Social

Avoidance; SHY = Shyness. AGGR = Aggressiveness; PSYC = Psychoticism; DISC = Disconstraint; NEGE = Negative Emotionality/Neuroticism; INTR = Introversion/Low Positive Emotionality.* = significant at .05 level. ** = significant at .01 level. *** = significant at .001 level.

CHAPTER IV

Discussion

The purpose of the current study was to examine the reliability and validity of the US Spanish MMPI-3, including its comparability to the original English version. This is an important goal given the extensive body of literature supporting the English MMPI family of instruments and the relative lack of studies on the Spanish version. A final focus of the study was to compare both forms with external criteria and determine any differences in how the forms compare regarding external validity.

Scale Reliability

Results of the current study provide an overall positive picture of the US Spanish MMPI-3. First, the scales were predominantly reliable with notable exceptions of Neurological Complaints (NUC), Stress (STR), Behavior Restricting Fears (BRF), and Aggression (AGG). It is possible these findings are due to low variance within the sample, as alphas were similar for both language forms. Although it would be natural to compare this finding to those of the Spanish MMPI-3 manual, some of the data used in the current study was also used in the Spanish MMPI-3 manual; therefore, the similarities in findings is to be expected. Both measures of internal consistency (Cronbach's alpha and inter-item correlations) suggest there are no significant differences between the language forms in terms of reliability. Cronbach alpha scores align with alphas obtained in a new study conducted by Whitman et al. (2022) with data collected from parental fitness evaluations in Puerto Rico.

Findings also supported the hypothesis that the Spanish and English forms would demonstrate similar test-retest reliability over a brief period of time. Although there were

minimal differences noted, for example Impulsivity showing higher test-retest reliability within the Spanish version and Aggression within the English version, there were not enough differences to extrapolate a particular pattern of issues within either form. Given the importance of test-retest reliability in determining the stability of an instrument, this finding again supports the consistency of constructs measured within the Spanish MMPI-3. Although we cannot make direct comparisons with the Spanish manual due to aforementioned data overlap, our findings align well with previous research on the test-retest reliability of the English MMPI-3 (Ben-Porath & Tellegen, 2021). Of note, both our study and the test-retest values in the MMPI-3 manual were measured only one-week apart, and additional research may benefit from examining longer periods of time.

Convergence between Spanish and English Forms

Both Spanish and English MMPI-3 forms demonstrated adequate convergence. Specifically, when opposite language forms were directly compared, correlational patterns showed that most scales demonstrated adequate overlap. Discriminant validity was also suggested, as scales which are not theoretically aligned exhibited weak associations. Taken together, the correlational patterns exhibited provide evidence the MMPI-3 in both languages has several distinct constructs as anticipated. Because the Spanish MMPI-3 is a new measure, there are no previous findings which can be used as comparison. The current finding is an essential piece of establishing the convergent and discriminant validity of the Spanish MMPI-3.

Even so, there were several scales which exhibited low associations where strong correlations were expected. One particularly surprisingly low association was the correlation coefficient for the convergence of the PSY-5 scale Psychoticism between

language forms. It is unclear why this association was relatively low. One possibility is that the experience of psychotic symptoms within Latinx populations is an often-debated topic in recent literature. Specifically, studies have found that lack of cultural understanding may falsely over-pathologize individuals' religious or cultural experiences as psychotic (DeVylder et al., 2013; Earl et al., 2015). Although there was not a direct clinical interpretation during the current study, it is important to consider the role cultural nuances may have on a scale such as Psychoticism. Because the US Spanish MMPI-3 is a translation from a measure which was originally created in English using a predominantly White sample, rather than a measure which was created in Spanish from an entirely Latinx population, there may be cultural differences impacting how psychotic experiences are described and interpreted in the measure. Further, this finding suggests there may be additional linguistic differences on how unusual perceptual experiences are interpreted in Spanish vs. English. Finally, it is possible the scale may have exhibited particularly low variance, which would impact the strength of a correlational analysis. Future research should focus on the potential of bias within both versions of the MMPI-3 and additional linguistic and cultural factors which may be affecting the scale. Additionally, future research should examine the scale within populations endorsing higher levels of psychosis-related symptoms.

Convergence with External Criteria

Beyond providing evidence for the reliability and validity of the Spanish MMPI-3 compared to the English form, the current study supported hypotheses of convergent validity with external criteria. We first examined the comparison of the MMPI-3 with the PID-5-SF, a commonly used personality psychopathology measure specifically

developed to assess the domains and facets of personality disorder in concordance with the DSM-5 AMPD. Correlation patterns were predominantly as expected, such that MMPI-3 scales related to emotional disturbance were most strongly associated with PID-5-SF items measuring Negative Affectivity, or MMPI-3 items measuring behavioral issues were strongly correlated with Disinhibition. This finding aligns well and adds to previous literature which found similar correlational patterns between the English MMPI-2-RF PSY-5 scales and the PID-5 (Anderson et al., 2013; Arbisi, 2014; Finn et al., 2014; Harkness et al., 2012; Harkness et al., 2014).

There were several notable exceptions to the hypothesized relations, specifically within the Psychoticism domain. This may be related to the issue with Psychoticism described above. Additionally, previous work on the hierarchical structure of the MMPI-2-RF found a combined negative emotionality and psychoticism factor using a university sample, while these factors were separate in a psychiatric sample (Bagby et al.,2013). As the current study uses a completely undergraduate student sample, it is possible there is not enough power within the current sample to detect these associations due to a low overall endorsement rate of psychotic-related problems. Previous MMPI and PID-5 research has also found some inconsistencies with the Psychoticism scales, such that Psychoticism exhibits weaker correlations and may not overlap with external criterion as strongly as other factors (Al-Dajani et al., 2016; Chmielewski et al., 2014). Given the mixed findings of Psychoticism within the literature, our finding is not surprising, but does merit additional focused examination in future studies.

Notably, externalizing scales on the MMPI-3 (including the Substance Abuse scale) showed negligible associations with an external measure of substance use. This is

likely due to low variability reported within this sample. There are several factors specific to the data used in current study which may be impacting this particular finding, or lack thereof. First, one of the campuses from which data were collected is a well-known criminal justice-oriented institution and commuter campus. Previous unpublished studies conducted at the same university also found low prevalence of reported substance use. Although it is beyond the scope of the current study to say confidently, this may be a reason as to why substance use was markedly under-reported in the current study, particularly in comparison to other undergraduate populations where substance abuse is common (Skidmore et al., 2016).

Another factor which may be impacting the amount of substance use recorded in the current study are cultural and ethnic factors. Although previous research has found high levels of drinking and other substance use in college samples (Skidmore et al., 2016; Welsh et al., 2019), this effect seems to decrease when considering ethnicity and other psychosocial variables. Specifically, it has been shown Latinx students appear to drink and smoke significantly less than White counterparts (Ratanasiripong et al., 2009) and that substance use appears to be more prominent with Latino college males versus Latina females (Vaughn et al., 2018). The sample for the current study is completely Latinx and predominantly female, which is likely a contributing factor to the low prevalence of substance use reported. Taken together, future studies should examine external validity of substance use measured within the MMPI-3 through a range of various samples with higher rates of alcohol and substance use.

Nonetheless, overall the current findings suggest good convergence with external criteria. With the exception of the scales discussed above, correlational patterns were for

the most part as expected, such that theoretically aligned scales exhibited the strongest correlations, whereas scales which were not conceptually related exhibited either weak to no association. These findings are in line with previous research which has found the MMPI family of instruments to be a valid measure of generalized psychopathology (Lee et al., 2013; Tarascavage & Sellbom, 2021; Wolf et al., 2008;) and personality pathology (Anderson et al., 2015; Anderson et al., 2016; Finn et al., 2014; Sellbom et al., 2013; Sellbom & Smith, 2017). Importantly, the current study not only supports previous research regarding the English version but demonstrates the MMPI-3 is a good measure of personality and psychopathology in Spanish as well.

Generally, the English and Spanish versions of the MMPI-3 were comparable in relation to external criteria; however, there were some deviations. These magnitude differences were not observed within specific domains but throughout the measure, suggesting there is not one area of the measure exhibiting measurement differences. Importantly, although there were some scales which produced stronger associations with external criteria in the Spanish version, most of the stronger correlations were observed within the English version compared with external criteria. This finding may be related to the lengthy history of research on the English MMPI-3 and the relative paucity of research on the Spanish version. This finding may also be related to the sample. Although the sample was fully Spanish-English bilingual, both samples were collected within English-speaking institutions. Further, all of the measures used as external correlates were administered in English, which likely impacted the relation between Spanish and English versions of the MMPI-3. Therefore, future research should assess Spanish-

speakers within predominantly Spanish-speaking contexts as well as use Spanish external correlates to build upon the findings of the current study.

Study Implications

As mentioned previously, there is a historical and current dearth of research on the Spanish MMPI family of instruments. The body of literature for the US Spanish MMPI-3 include the much-needed manual, one peer-reviewed brief report (Whitman, et al., 2022), and the current study, which is the first examination of the Spanish MMPI-3 not affiliated directly with the authors of the measure. Overall, regardless of the exact findings of the current study, it is an important endeavor to increase foundational literature on the Spanish MMPI-3. Promisingly, the findings of the current study were generally positive, suggesting the MMPI-3 is a reliable and valid measure for use within Spanish-Speaking populations.

Increasing the availability of reliable and valid measures is an extremely important task and one that is within our ethical guidelines (APA, 2002). Our measures were historically created in White, English-speaking samples, and the MMPI-3 is not immune to this history. Although there has been dedication to ensuring diversification of the MMPI-3, including diverse normative samples that map on to projective population estimates, as well as creating a unique manual for the Spanish MMPI-3 and ensuring regionally appropriate translations, there is are still many areas of growth. Findings of the current study both suggest the Spanish MMPI-3 is reliable and valid and highlights areas of continued study, specifically within the Psychoticism domain.

Overall, the current study suggests the MMPI-3 can be used within psychological assessments with Latinx and Spanish-speaking individuals, specifically within the context

of the university setting. The MMPI-3 is often used within diagnostic batteries and by providing evidence the measure is reliable and valid, we can increase confidence of the practitioners using this measure. Even so, future research is encouraged to examine psychometric properties of the Spanish MMPI-3 across multiple settings. The MMPI-3 is used in medical, forensic, immigration, and legal contexts, which each necessitate their own unique examinations. Furthermore, this is a promising sign for cross-cultural psychological assessment. Ensuring cross-culturally valid measures is an ongoing and important endeavor within our field, and replication of the current findings is needed in future work.

Limitations and Future Directions

The current study is not without limitations. First, although the total sample is a respectable size (N = 303), due to the use of four randomized conditions, group sizes used for comparison were fairly limited. Additionally, about one-third of MMPI-3s administered were not valid, which decreased the amount of MMPI-3s we were able to use for analyses. This is relatively high in comparison to previous MMPI literature in university samples but may be explained by findings from Benuto and colleagues (2020) in which they found Latinx respondents more likely to produce an invalid protocol than White Non-Latinx counterparts. populations, in order to accurately assess construct validity and comparability. The sheer number of analyses conducted in the current study is also important to discuss. As very little work has examined the Spanish MMPI-3 (or even the Spanish MMPI-2-RF), we endeavored to explore numerous aspects of the psychometric properties of the instrument. This likely resulted in a heavily inflated risk of

error. Therefore, individual findings should be viewed as preliminary and should be confirmed in future, less exploratory, examinations.

Second, beyond sample size, another limitation was the use of English measures to use for external criterion. Research suggests when conducting assessments with bilingual individuals, surveys should be administered in the same language to increase accuracy in comparison (Cofresi & Gorman, 2004). We attempted to minimize the effects of this by using a completely bilingual sample in order to limit the impact language would have on psychometric examinations. Even so, future studies on the Spanish MMPI-3 should consider using Spanish-language measures to assess convergent validity. Further, there was a minor data collection error which decreased the number of legitimate PID-5-SF protocols to use for comparison. Further, some variables, specifically related to substance use, had low variance which decreased ability to make useful comparisons. It would therefore be beneficial for future studies to use samples which feature higher levels of substance use, such as forensic or inpatient samples.

Third, Latinx as a group classifier is heterogenous and spans multiple ethnic and cultural backgrounds. Although the larger study from which the data were collected gathered information on countries of origin, examinations of group belongingness was beyond the scope of the study but may impact test completion and interpretation. Relatedly, although the current study is not an examination of the translation of the measure itself, the heterogeneity of Latinx and the Spanish language may have effects on how individuals complete the forms. Finally, data were collected solely within Texas. Although Texas is an ideal state for completion of the study, given the large percentage of Latinx individuals which comprise the population, it potentially limits the

generalizability of the findings, as the US Spanish MMPI-3 is intended for use across the country.

Additionally, although these findings overall suggest adequate psychometric properties of both the Spanish and English MMPI-3, one important factor to consider is the use of only valid protocols in the analyses of this study. In fact, validity scales were not examined in the current study beyond use of excluding invalid profiles. A recent study conducted by Benuto and colleagues (2020) found that Latinx individuals were more likely to produce invalid MMPI-2-RF protocols than Non-Latinx White counterparts within a primary care setting. Even though this finding is from the previous iteration of the MMPI, it is valuable to consider because of the origin of the measure. Further, in their study, only Latinx individuals were administered the Spanish translation. Therefore, the comparison may be due to linguistic differences rather than ethnic. Because our study did not use the validity scales beyond exclusion criteria, this is an important area to consider for future research. There may be linguistic difference between the forms which impact the ability to produce valid protocols. Additionally, because this was not examined in the current study, differences in validity may impact psychometric properties.

Even with these limitations, the current study is an important contribution to the body of literature on the US Spanish MMPI-3. Findings of the study support the use of the Spanish MMPI-3 given the sound psychometric properties and comparability to the English form. The present study supplements information outlined within the Spanish MMPI-3 manual (Ben-Porath & Tellegen, 2020) and serves as the first examination of the measure outside of the authorship group. The study uses methodology specific to

examination of the psychometric properties of the measure by including a fully bilingual, Latinx sample to limit potential language and ethnicity-related confounds. Further, the current study acts as foundational research from which future research can spring board. Several important future directions are important to emphasize from the current findings, including the need to examine the potential impact of acculturation and cultural values on test taking and further examinations of Psychoticism and related scales. Future research should include external criterion measures in Spanish, to ensure accurate linguistic comparisons, and should use samples of populations beyond college students and in different regions of the US to increase generalizability. Overall, this study suggests the Spanish MMPI-3 is reliable, valid, and comparable to the well-researched English version.

REFERENCES

Al-Dajani, N., Gralnick, T. M., & Bagby, M. R. (2016). A psychometric review of the Personality Inventory for DSM-5 (PID-5): Current status and future directions. *Journal of Personality Assessment, 98*(1), 62-81.

Alegría, M., Canino, G., Shrout, P. E., Woo, M., Duan, N., Vila, D., Torres, M., Chen, C., & Meng, X. (2008). Prevalence of mental illness in immigrant and non-immigrant US Latino groups. *American Journal of Psychiatry, 165*(3), 359-369.

Amaro, T. (1953). *The personality of the normal Habanero according to the MMPI* [PhD Thesis]. University of Havana.

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Washington, DC.

American Psychiatric Association (2017). Mental health disparities: Hispanics and Latinos. https://www.psychiatry.org/psychiatrists/cultural-competency/education/mental-health-facts

American Psychological Association (2002). Ethical principles of psychologists and code of conduct. https://www.apa.org/ethics/code/

Anderson, J. L., Sellbom, M., Bagby, R. M., Quilty, L. C., Veltri, C. O. C., Markon, K. E., & Krueger, R. F. (2013). On the convergence between PSY-5 domains and PID-5 domains and facets: Implications for assessment of DSM-5 personality traits. *Assessment, 20,* 286-294.

Anderson, J. L., Sellbom, M., Pymont, C., Smid, W., De Saeger, H., & Kamphius, J. H. (2015). Measurement of DSM-5 Section II personality disorder constructs using

the MMPI-2-RF in clinical and forensic samples. *Psychological Assessment, 27*(3), 786-800.

Anderson, J. L., Sellbom, M., Sansone, R. A., & Songer, D. A. (2016). Comparing external correlates of DSM-5 Section II and Section III dimensional trait operationalizations of borderline personality disorder. *Journal of Personality Disorders, 30*(2), 193-210.

Arbisi, P. A. (2014). Introduction to the special section on the Personality Psychopathology Five (PSY-5) and *DSM-5* trait dimensional diagnostic system for personality disorders: Emerging convergence. *Journal of Personality Assessment, 96*(2), 117-120.

Arbisi, P. A., & Ben-Porath, Y. S. (1995). An MMPI-2 infrequent response scale for use with psychopathological populations: The Infrequency-Psychopathology Scale, F(p). *Psychological Assessment, 7*, 424-431.

Bauer, A. M., Chen, C., & Alegría, M. (2010). English language proficiency and mental health service use among Latino and Asian Americans with mental disorders. *Medical Care, 48*(12), 1097-1104.

Bagby, R. M., Sellbom, M., Ayearst, L. E., Chmielewski, M. S., Anderson, J. L., & Quilty, L. C. (2013). Exploring the hierarchical structure of the MMPI-2-RF Personality Psychopathology Five in Psychiatric and University Student Samples. *Journal of Personality Assessment, 96*(2), 166-172.

Ben-Porath, Y. S., Shondrick, D., & Stafford, K. (1995). MMPI-2 and race in a forensic diagnostic sample. *Criminal Justice and Behavior, 22*(1), 19-32.

Ben-Porath, Y. S., & Tellegen, A. (2008). Empirical correlates of the MMPI-2 Restructured Clinical (RC) scales in mental health, forensic, and nonclinical settings: An introduction. *Journal of Personality Assessment, 90*(2), 119-121.

Ben-Porath, Y. S. (2012). *Interpreting the MMPI-2-RF*. University of Minnesota Press: Minneapolis, MN.

Ben-Porath, Y. S. (2013). Forensic applications of the Minnesota Multiphasic Personality Inventory-2-Restructured Form. In R. P. Archer & E. M. A. Wheeler (Eds.), *Forensic use of clinical assessment instruments* (pp. 63-10). New York, NY: Routledge.

Ben-Porath, Y. S. (2017). An update to William and Lally's (2016) Analysis of MMPI-2-RF acceptance. *Professional Psychology: Research and Practice, 48*(4), 275-278.

Ben-Porath, Y. S. (2019). Of fallacies and errors, new and repeated: A rejoinder to Butcher et al., (2018). *Journal of Personality Assessment, 101*(2), 129-139.

Ben-Porath, Y. S., & Archer, R. P. (2014). The MMPI Instruments. In R. P. Archer & S. R. Smith (Eds.), *Personality Assessment* (2nd ed.). New York, NY: Routledge.

Ben-Porath, Y. S., Corey, D. M. & Tarescavage, A. M. (2017). Using the MMPI-2-RF in preemployment evaluations of police officer candidates. In C. L. Mitchell & E. H. Dorian (Eds.), *Police psychology and its growing impact on modern law enforcement,* (pp. 51-78). Hershey, PA: IGI Global.

Ben-Porath, Y. S. & Tellegen, A. (2018). Leone, Mosticoni, Ianella, Biondi, and Butcher's (2018) effort to compare the MMPI-2-RF and the MMPI-2 falls well short. *Archives of Assessment Psychology, 8*(1), 23-31.

Ben-Porath, Y. S., & Tellegen, A. (2019, June). An MMPI-3 Update. Presented at the 54th Annual Symposium on Recent MMPI Research: Minneapolis, MN.

Ben-Porath, Y. S., & Tellegen, A. (2020). *Minnesota Multiphasic Personality Inventory-3 (MMPI-3): Manual supplement for the US Spanish translation*. University of Minnesota Press: Minneapolis, MN.

Benuto, L. T., Casas, J. B., Bennett, N. M., & Leany, B. D. (2020). The MMPI-2-RF: A pilot study of Latinx vs. Non-Latinx Whites Profiles. *Professional Psychology: Research and Practice, 51*(5), 496-506.

Bolaños-Medina, A., & González-Ruiz, V. (2012). Deconstructing the translation of psychological tests. *Translators' Journal, 57*(3), 715-739.

Breslau, J., Kendler, K. S., Su, M., Gaxiola-Aguilar, S., & Kessler, R. C. (2005). Lifetime risk and persistence of psychiatric disorders across ethnic groups in the United States. *Psychological Medicine, 35*(3), 317-327.

Butcher, J. N. (2015). Foreward. In A. F. Friedman, P. K. Bolinskey, R. W. Levak & D. S. Nichols (Authors). *Psychological Assessment with the MMPI-2/MMPI-2-RF* (3rd ed; xxiv-xxvii). Routledge: New York, NY.

Butcher, J. N., Cabiya, J., Lucio, E., & Garrido, M. (2007). *Assessing Hispanic clients using the MMPI-2 and MMPI-A.* Washington, DC: American Psychological Association.

Butcher, J. N., Dahlstrom, W. G., Graham, J. R., Tellegen, A. M., & Kraemmer, B. (1989). *Minnesota Multiphasic Personality Inventory-2 (MMPI-2): Manual for administration and scoring*. Minneapolis, MN: University of Minnesota Press.

Butcher, J. N., Graham, J. R., Ben-Porath, Y. S., Tellegen, A., & Dahlstrom, W. G. (2001). *Minnesota Multiphasic Personality Inventory-2 (MMPI-2): Manual for administration and scoring* (rev. ed.). Minneapolis, MN: University of Minnesota Press.

Butcher, J. N. & Han, K. (1995). Development of an MMPI-2 scale to assess the presentation of self in a superlative manner: The S. Scale. In J. N. Butcher & C. D. Spielberger (Eds.), *Advances in Personality Assessment* (Vol. 10, pp. 25-50). Hillsdale, NJ: Lawrence Erlbaum Associates. Butcher, J. N., Hass, G. A., Greene, R. L., Nelson, L. D., Nichols, D. S., & Williams, C. L. (2018). Using the MMPI-2 in Forensic Assessment: Response to criticism about a case study. *Journal of Personality Assessment, 101*(2), 123-128.

Chmielewski, M., Bagby, R. M., Markon, K., Ring, A. J., & Ryder, A. G. (2014). Oppeness to experience, intellect, schizotypal personality disorder, and psychoticism: Resolving the controversy. *Journal of Personality Disorders, 28*(4), 483-499.

Center for History and New Media. (2020). *Bracero History Archive*. http://braceroarchive.org/about.

Costa, P. T., Zonderman, A. B., McCrae, R. R., & Williams, R. B. (1985). Content and comprehensiveness in the MMPI: An item factor analysis in a normal adult sample. *Journal of Personality and Social Psychology, 48*(4), 925-933.

Cuthbert, B. N. (2005). Dimensional models of psychopathology: Research agenda and clinical utility. *Journal of Abnormal Psychology, 114*(4) 565-569.

Deskovitz, M. A., Weed, N. C., Chakranarayan, C., & Williams, J. (2016). Interpretive reliability of two common MMPI-2 profiles. *Cogent Psychology, 3*(1), 1-11.

DeVylder, J. E., Oh, H., Y, Yang, L. H., Cabassa, L. J., Chen, F., & Lukens, E. P. (2013). Acculturative stress and psychotic-like experiences among Asian and Latino immigrants to the United States. *Schizophrenia Research, 150*(1), 223-228.

Earl, T., Fortuna, L. R., Gao, S., Williams, D. R., Neighbors, H. W., Takeuchi, D., & Alegría, M. (2015). *Ethnic Health, 20*(3), 273-292.

Finn, J. A., Arbisi, P. A., Erbes, C. R., Polusny, M. A., & Thuras, P. (2014). The MMPI-2 Restructured Form Personality Psychopathology Five Scales: Bridging DSM-5 Section 2 Personality Disorders and DSM-5 Section 3 Personality Trait Dimensions. *Journal of Personality Assessment, 96*(2), 173-184.

Finn, S. E., & Kamphius, J. H. (2006). The MMPI-2 Restructured Clinical (RC) Scales and Restrained to Innovation, or "What have they done to my song?" *Journal of Personality Assessment, 87*(2), 202-210.

Franz, A. O., Harrop, T. M., & McCord, D. M. (2017). Examining the construct validity of the MMPI-2-RF interpersonal functioning scales using the Computerized Adaptive Test of Personality Disorder as a framework. *Journal of Personality Assessment, 99*(4), 416-423.

Forbey, J. D., & Ben-Porath, Y.S. (2007). A comparison of the MMPI-2 restructured clinical (RC) and clinical scales in substance abuse treatment sample. *Psychological Services, 4*(1), 46-58.

Forbey, J. D., Lee, T. C., & Handel, R. W. (2010). Correlates of the MMPI-2-RF in a college setting. *Psychological Assessment, 22*(4), 737-744.

Gaddis, B. H., Foster, J. L., & Lemming, M. R. (2015). A comparative review of current practices in personality assessment norming. *International Journal of Selection and Assessment, 23*(1), 14-26.

Garcia-Peltoniemi, R., & Azan Chaviano, A. (1993). MMPI-2: Inventario Multifasico de la Personalidad-e-Minnesota, Version Hispana. Minneapolis, MN: National Computer Systems.

George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference. 11.0 Update.* (4th ed). Boston: Allyn & Bacon.

Gervais, R. O., Ben-Porath, Y. S., Wygant, D. B., & Sellbom, M. (2010). Incremental validity of the MMPI-2-RF over-reporting scales and RBS in assessing the veracity of memory complaints. *Archives of Clinical Neuropsychology, 25,* 274-284.

Gervais, R. O., Louw, D., & Gibson, K. (2017). Using the MMPI-2-RF in discriminating between malingering and somatoform disorder. In K.B. Boone (Ed.), *Evaluation of Somatoform and Other Functional Somatic Conditions.* NY: Routledge.

Glen, S. (2018). Average inter-item correlation: Definition, example. https://www.statisticshowto.com/average-inter-item-correlation/

Gonzales, Y. D., Smith, E. A., Keane, J. E., Biermann, A. L., Keister, K. M., Wiesepape, C. N., Bolinskey, P. K. (2019). A comparison of MMPI-2-RF scores between White and African American college students. *Archives of Assessment Psychology, 9*(1), 87-112.

Greene, R. L. (1987). Ethnicity and MMPI performance: A review. *Journal of Consulting and Clinical Psychology, 55*(4), 497-512.

Hall, J. T., Menton, W. H., & Ben-Porath, Y. S. (2022). Examining the psychometric equivalency of MMPI-3 scale scores derived from the MMPI-3 and the MMPI-2-RF-EX. *Assessment, 29*(4), 842-853.

Hamilton, J. E., Heads, A. M., Meyer, T. D., Desai, P. V., Okusaga, O. O., & Cho, R. Y. (2018). Ethnic differences in the diagnosis of schizophrenia and mood disorders during admission to an academic safety-net psychiatric hospital. *Psychiatry Research, 267*, 160-167.

Harkness, A. R., Finn, J. A., McNulty, J. L., & Shields, S. M. (2012). The Personality Psychopathology Five (PSY-5): Recent constructive replication and assessment literature review. *Psychological Assessment, 24*(2), 432-443.

Harnkess, A. R., McNulty, J. L., & Ben-Porath, Y. S. (1995). The Personality Psychopathology Five (PSY-5): Constructs and MMPI-2 scales. *Psychological Assessment, 7*(1), 104-114.

Harkness, A. R., McNulty, J. L., Ben-Porath, Y. S., & Graham, J. R. (2002). *MMPI-2 Personality Psychopathology Five (PSY-5) Scales: Gaining an overview for case conceptualization and treatment planning.* Minneapolis: University of Minnesota Press.

Harkness, A. R., McNulty, J. L., Finn, J. A., Reynolds, S. M., & Shields, M. (2014). The MMPI-2-RF Personality Psychopathology Five (PSY-5) Scales: Development and validity research. *Journal of Personality Assessment, 96*(2), 140-150.

Hathaway, S. R. & McKinley, J. C. (1940). A multiphasic personality schedule (Minnesota): I. Construction of the Schedule. *The Journal of Psychology, 10,* 249-254.

Hathaway, S. R. & McKinley, J. C. (1943). The Minnesota multiphasic personality inventory (Rev. ed., 2nd printing). University of Minnesota Press.

Hathaway, S. R., & McKinley, J. C. (1967). *The Spanish MMPI.* Mexico: El Manual Moderno, S. A.

Hoelzle, J. B., & Meyer, G. J. (2008). The factor structure of the MMPI-2 Restructured Clinical (RC) scales. *Journal of Personality Assessment, 90*(5), 443-455.

Hunter, H. K., Bolinskey, P. K., Novi, J. H., Hudak, D. V., James, A. V., Myers, K. R., & Schuder, K. M. (2014). Using the MMPI-2-RF to discriminate psychometrically identified schizotypic college students from a matched comparison sample. *Assessment, 96,* 596-603.

International Test Commission (ITC). (2018). ITC guidelines for translating and adapting tests (Second Edition). *International Journal of Testing, 18,* 101-134.

Iracheta, B., Long, T., Torres, A., Morales, F., Mercado, A., & Anderson, J. (2020, June). Test-Retest reliability for the English and Spanish MMPI-3 in Latinx university students. Submitted to the 55th Annual Symposium on Recent MMPI Research (virtual conference).

Kazanas, S. A., McLean, J. S., & Altarriba, J. (2019). Emotion and emotion concepts: Processing and use in monolingual and bilingual speakers. In J. W. Schweiter and M. Paradis (Eds.). *The Handbook of the Neuroscience of Multilingualism* (313-334). John Wiley & Sons.

Khouri, R. K. (2010). *MMPI-2-RF vs. MMPI-2: Latinos with Depression.* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database (UMI No. 3416813).

Kermott, S.E.C. (2017). *Comparability of the English and Two Spanish Adaptations of the MMPI-2-RF with U.S. Bilingual Latinos* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database (UMI No. 10624761).

Kotov, R., Krueger, R. F., Watson, D., Achenbach, T. M., Althoff, R. R., Bagby, R. M.,…& Zimmerman, M. (2017). The hierarchical taxonomy of psychopathology (HiTOP): A dimensional alternative to traditional nosologies. *Journal of Abnormal Psychology, 126*(4), 454-477.

Lee, T. T. C., Graham, J. R., & Arbisi, P. A. (2018). The utility of MMPI-2-RF scale scores in differential diagnosis of schizophrenia and major depressive disorder. *Journal of Personality Assessment, 100*(3), 305-312.

Leone, C., Iannella, F., Mosticoni, S., Biondi, M., & Butcher, J. N. (2018). Comparability of MMPI-2-RF with the MMPI-2 in assessing psychiatric patients: A shortfall. *Archives of Psychological Assessment, 8,* 7-22.

Leong, F. T. L., & Park, Y. S. (2016). Testing and assessment with persons & communities of color. *American Psychological Association*. https://www.apa.org/pi/oema/resources/testing-assessment-monograph.pdf

Maples, J. L., Carter, N. T., Few, L. R., Crego, C., Gore, W. L., Samuel, D. B., Williamson, R. L., Lynam, D. R., Widiger, T. A., Markon, K. E., Krueger, R. F., & Miller, J. D. (2015). Testing whether the DSM-5 personality disorder trait model can be measured with a reduced set of items: An item response theory investigation of the Personality Inventory for DSM-5. *Psychological Assessment, 27*(4), 1195-1210.

Marek, R. J., Anderson, J. L., Tarescavage, A. M., Haugh, S., Martin-Fernandez, K., Heinberg, L. J., Block, A. R., Jimenez, X., & Ben-Porath, Y. S. (2020). Elucidating somatization in a dimensional model of psychopathology across medical settings. *Journal of Abnormal Psychology, 129*(2), 162-176.

Marek, R. J., & Ben-Porath, Y. S. (2017). Using the MMPI-2-Restructured Form in behavioral medical settings. In M. Maurush (Ed.), *Handbook of Psychological Assessment in Primary Care Settings* (2nd Edition, pp. 631-622. New York, NY: Taylor and Francis.

Marek, R. J., Ben-Porath, Y. S., Ashton, K., & Heinberg, L. J. (2014). Impact of using DSM-5 criteria for diagnosing binge eating disorder in bariatric surgery candidates: Change in prevalence rates, demographic characteristics, and scores on the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF). *International Journal of Eating Disorders, 47,* 553-557.

Marek, R. J., Ben-Porath, Y. S., Sellbom, M., McNulty, J. L., & Heinberg, L. J. (2015). Validity of the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) scores as a function of gender, ethnicity, and age of bariatric surgery candidates. *Surgery for Obesity and Related Diseases, 11*, 627-636.

McCord, D. M., Achee, M. C., Cannon, E. M., Harrop, T. M., & Poynter, W. D. (2017). Using the research domain criteria framework to explore associations between MMPI-2-RF constructs and physiological variables assessed by eye-tracker technology. *Journal of Personality Assessment, 99,* 363-374.

Migration Policy Institute. (2001-2020). *US Immigration Trends.* https://www.migrationpolicy.org/programs/data-hub/us-immigration-trends#history.

Minsky, S., Vega, W., Miskimen, T., Gara, M., & Escobar, J. (2003). Diagnostic patterns in Latino, African American, and European American psychiatric patients. *Archives of General Psychiatry, 60*(6), 637-644.

Munley, P. H., Morris, J. R., Murray, D. A., & Baines, T. C. (2001). A comparison of African American and White American veteran MMPI-2 profiles. *Assessment, 8*(1), 1-10.

Narrow, W. E., Clarke, D. E., Kuramoto, S. J., Kraemer, H. C., Kupfer, D. J., Greiner, L., & Regier, D. A. (2013). DSM-5 field trials in the United States and Canada, Part III: Development and reliability testing of a cross-cutting symptom assessment for DSM-5. *American Journal of Psychiatry, 170*(1), 71-82.

Nichols, D. S. (2011). *Essentials of MMPI-2 assessment: Second edition.* John Wiley & Sons, Inc.

Noe-Bustamante, L., & Flores, A. (2017). Facts on Latinos in the U.S. https://www.pewresearch.org/hispanic/fact-sheet/latinos-in-the-u-s-fact-sheet/

Osberg, T. M., Haseley, E. N., & Kamas, M. M. (2008). The MMPI-2 Clinical Scales and Restructured Clinical (RC) Scales: Comparative psychometric properties and relative diagnostic efficiency in young adults. *Journal of Personality Assessment, 90*, 81-92.

Popham, S. M., & Holden, R. R. (1991). Psychometric properties of the MMPI factor scales. *Personality and Individual Differences, 12*(6), 513-517.

PROMIS Health Organization (PHO) and PROMIS Cooperative Group. 2008-2012. PROMIS Health Measures. https://www.healthmeasures.net/explore-measurement-systems/promis/obtain-administer-measures

Ratanasiripong, P., Burkey, H., & Ratanasiripong, N. (2009). Stress and substance use among Asian and Latino College Students. *College Student Journal, 43*(4), 1253-1260.

Rogers, M. L., Anestis, J. C., Harrop, T. M., Schneider, M., Bender, T. W., Ringer, F. B. & Joiner, T. E. (2017). Examination of MMPI-2-RF Substantive Scales as indicators of acute suicidal affective disturbance components. *Journal of Personality Assessment, 99*(4), 424-434.

Romero, I. E., Toorabally, N., Burchett, D., Tarescavage, A. M., & Glassmire, D. M. (2017). Mapping the MMPI-2-RF Substantive scales onto internalizing, externalizing, and thought dysfunction dimensions in a forensic inpatient setting. *Journal of Personality Assessment, 99*, 351-362.

Sellbom, M. (2017). Mapping the MMPI-2-RF specific problems scales onto extant psychopathology structures. *Journal of Personality Assessment, 99*(4), 341-350.

Sellbom, M., Anderson, J. L., & Bagby, R. M. (2013). Assessment DSM-5 Section III personality traits and disorders with the MMPI-2-RF. *Assessment, 20,* 709-722.

Sellbom, M., Arbisi, P. A. (2017). Introduction to the special section: Linking the MMPI-2-RF to contemporary views of psychopathology. *Journal of Personality Assessment, 99*(4), 337-340.

Sellbom, M., Graham, J. R., & Schnek, P. (2006). Incremental validity of the MMPI-2 Restructured Clinical (RC) Scales in a private practice sample. *Assessment*, *86,*

196-205. Shorter, E. (2015). The history of nosology and the rise of the Diagnostic and Statistical Manual of Mental Disorders. *Dialogues in Clinical Neuroscience, 17*(1), 59-67.

Sellbom, M. & Lee, T. T. C. (2013). Assessment of anxiety symptoms using the MMPI-2, MMPI-2-RF and MMPI-A. In D. McKay & E. A. Storch (Eds.), *Handbook of assessing variants and complications in anxiety disorders* (pp. 139-163). Springer.

Sellbom, M., & Smith, A. (2017). Assessment of DSM-5 Section II personality disorders with the MMPI-2-RF in a nonclinical sample. *Journal of Personality Assessment, 99*(4) 384-397.

Silberman, S. A. (2002). *The validity of the MMPI-2 in a Spanish-speaking population.* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses Database (UMI No. 3048334).

Simms, L. J. (2006). Bridging the divide: Comments on the Restructured Clinical Scales of the MMPI-2. *Journal of Personality Assessment, 87*(2), 211-216.

Skidmore, C. R., Kaufman, E. A., & Crowell, S. E. (2016). Substance use among college students. *Child and Adolescent Psychiatric Clinics, 25,* 735-753.

Steiger, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin, 87*(2), 245-251.

Tarascavage, A. M., & Sellbom, M. (2021). Minnesota Multiphasic Personality Inventory-2-RF (MMPI-2-RF) for assessing disordered thought and perception. In I. B. Weiner & J. H. Kleiger (Eds.), *Psychological assessment of disordered thinking and perception* (pp. 63-78). American Psychological Association.

Tellegen, A., & Ben-Porath, Y. S. (1993). Code-type comparability of the MMPI and MMPI-2: Analysis of recent findings and criticisms. *Journal of Personality Assessment, 61,* 489-500.

Tellegen, A., Ben-Porath, Y. S., McNulty, J. L., Arbisi, P. A., Graham, J. R., & Kraemmer, B. (2003). *MMPI-2 Restructured Clinical (RC) Scales: Development, validation, and interpretation*. Minneapolis: University of Minnesota Press.

Tellegen, A. & Ben-Porath, Y. S. (2008/2011). *Minnesota Multiphasic Personality Inventory-2-Restructured form technical manual*. Minneapolis, MN: University of Minnesota Press.

Timbrook, R. E., & Graham, J. R. (1994). Ethnic differences on the MMPI-2? *Psychological Assessment, 6*(3), 212-217.

University of California Los Angeles (UCLA) Center for Labor Research and Education. (2014). *The Bracero Program.* UCLA Labor Center. https://www.labor.ucla.edu/what-we-do/research-tools/the-bracero-program/

University of Minnesota Press Test Division. (2011-2020). *Reference database*. https://www.upress.umn.edu/test-division/bibliography.

University of Minnesota Press Test Division. (2011-2020). *Available translations*. https://www.upress.umn.edu/test-division/translations-permissions/available-translations

Vaughn, E. L., Wright, L. A., Ángel-Cano, M., & de Dios, M. A. (2018). Gender as a moderator of descriptive norms and substance use among Latino college students. *Substance Use & Misuse, 53*(11), 1840-1848.

Velasquez, R. J., Gonzales, M., Butcher, J. N., Castillo-Canez, I., Apodaca, J. X., & Chavira, D. (1997). Use of the MMPI-2 with Chicanos: Strategies for counselors. *Journal of Multicultural Counseling and Development, 25,* 107-120.

Velasquez, R. J., Chavira, D. A., Karle, H. R., Callahan, W. J., Garcia, J., & Castellanos, J. (2000). Assessing bilingual and monolingual Latino students with translations of the MMPI-2: Initial data. *Cultural Diversity and Ethnic Minority Psychology, 6*(1), 65-72.

Welsh, J. W., Shentu, Y., & Sarvey, D. B. (2019) Substance use among college students. *FOCUS: A Journal of the American Psychiatric Association, 17*(2), 117-127.

Whitman, M. R., Hansen, A. N., Medina, L. O., & Ben-Porath, Y. S. (2022). Psychometric properties of Spanish-Language MMP-3 scores in a Puerto Rican parental fitness evaluation setting. *Psychological Assessment.* Pre-print accessed at https://www.researchgate.net/profile/Megan-Whitman-2/publication/359821860_Psychometric_Properties_of_Spanish-Language_MMPI-3_Scores_in_a_Puerto_Rican_Parental_Fitness_Evaluation_Setting/links/62503913d726197cfd46d1a7/Psychometric-Properties-of-Spanish-Language-MMPI-3-Scores-in-a-Puerto-Rican-Parental-Fitness-Evaluation-Setting.pdf.

Widiger, T. A., & Clark, L. A. (2000). Toward DSM-5 and the Classification of Psychopathology. *Psychological Bulletin, 126*(6), 946-963.

Widiger, T.A., & Samuel, D. B. (2005). Diagnostic categories or dimensions? A question for the Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition. *Journal of Abnormal Psychology, 114*(4), 494-504.

Williams, C. L., & Lally, S. J. (2017). MMPI-2, MMPI-2-RF, and MMPI-A administrations (2007-2014): Any evidence of a "new standard?". *Professional Psychology: Research and Practice, 48*(4), 267-274.

Wolf, E. J., Miller, M. W., Orazem, R. J., Weierich, M. R., Castillo, D. T., Milford, J., Kaloupek, D. G., & Keane, T. M. (2008). The MMPI-2 Restructured Clinical Scales in the assessment of posttraumatic stress disorder and comorbid disorders. *Psychological Assessment, 20*(4), 327-340.

APPENDIX A

Spanish Fluency Check

I am here today to participate in a study conducted by Dr. Jaime Anderson and her graduate student, Tessa Long. For the study, I will be completing multiple surveys, including questionnaires on personality and general mental health. One of the surveys used will be the Minnesota Multiphasic Personality Inventory-2-Restructed Form, which I will be completing in either Spanish or English. There will be two sessions for this study: one today and one about a week from today. I will receive one hour of PeRP credit after today and three more hours after the completing the next session. My participation in this study is completely voluntary, and my withdrawal from the study at any time will not change my standing in the university in any way. However, I understand that if I withdraw, I may not receive all of the PeRP credits. I understand my information will not be shared, and that any questions or concerns can be directed to Tessa, Dr. Anderson, or the IRB at Sam Houston State University.

1. Who is conducting this study?
2. What will you be doing in this study?
3. Will you complete the MMPI-2-RF in Spanish or English?
4. How many hours of PeRP credit will you receive?
5. Will you receive all the hours at once?
6. Do you have to participate in this study?

Estoy aquí para participar en un estudio conducido por la Dra. Jaime Anderson y su estudiante de posgrado, Tessa Long. Para el estudio estaré completando varias encuestas, incluyendo encuestas de personalidad y de la salud mental en general. Una de las encuestas que se usará será el Minnesota Multiphasic Personality Inventory-2-Restructed Form, que completaré en español o en inglés. Habrá dos sesiones para este

estudio: uno hoy y el otro en aproximadamente una semana a partir de hoy. Recibiré una hora de crédito PeRP después de hoy y tres horas más después de completar la próxima sesión. Mi participación en este estudio es completamente voluntaria, y mi retiro del estudio en cualquier momento no cambiará mi estado con la universidad de ninguna manera. Sin embargo, entiendo que, si me retiro, es posible que no reciba todos los créditos de PeRP. Yo entiendo que mi información no será compartida, y que cualquier pregunta o inquietud que tenga puede ser dirigida a Tessa, la Dra. Anderson, o el IRB de Sam Houston State University.

1. ¿Quien está conduciendo este estudio?
2. ¿Que vas a hacer en este estudio?
3. ¿Completarás el MMPI-2-RF en español o inglés?
4. ¿Cuantas horas de crédito de PeRP recibirás?
5. ¿Recibirás todas las horas en una sola vez?
6. ¿Tienes que participar en este estudio?

APPENDIX B

Demographic Questionnaire

Demographics

General

1. Age:
2. Gender:
    a. Male
    b. Female
    c. Other: _____
3. Ethnicity:
    a. White
    b. Hispanic/Latino
    c. Black or African American
    d. Native American or American Indian
    e. Asian/Pacific Islander
    f. Biracial/Multiracial
    g. Other: _____
4. Marital Status:
    a. Single, never married
    b. In a relationship
    c. Living with domestic partner
    d. Married
    e. Widowed
    f. Divorced
    g. Separated
5. Current Year in University:
    a. 1st
    b. 2nd
    c. 3rd
    d. 4th
    e. 5th
    f. 6th+
6. Current Standing in University:
    a. Freshman
    b. Sophomore
    c. Junior
    d. Senior
7. Father's highest level of education:
    a. Junior high or less
    b. Some high school
    c. High school graduate; GED
    d. Some college credit

   e. Trade/technical/vocational school
   f. Associate's degree
   g. Bachelor's degree
   h. Master's degree
   i. Professional or Doctorate degree
8. Mother's highest level of education:
   a. Junior high or less
   b. Some high school
   c. High school graduate; GED
   d. Some college credit
   e. Trade/technical/vocational school
   f. Associate's degree
   g. Bachelor's degree
   h. Master's degree
   i. Professional or Doctorate degree
9. Employment Status:
   a. Unemployed, not looking
   b. Unemployed, looking
   c. Part-time employment (under 35 hours a week)
   d. Full-time employment (40 hours+ a week)

Immigration/Background

10. What is your country of origin? _____
    a. If not US, at what age did you emigrate?
    b. If US, what is the most recent generation in your family that emigrated?
       i. Parents
       ii. Grandparents
       iii. Great-grandparents
       iv. Great-great-grandparents
       v. Earlier Ancestors or Unknown
11. What language do you speak in your household?
    a. English
    b. Spanish
    c. Other: _____
12. What language is the media (e.g., TV or music) you typically use?
    a. English
    b. Spanish
    c. Other:_____
13. What language do you typically speak with your friends?
    a. English
    b. Spanish
    c. Other: _____

Mental Health History

14. Have you ever been to counseling or therapy?

    a. Yes
    b. No
15. Have you ever been hospitalized for mental health reasons?
    a. Yes
    b. No
16. Have you ever been prescribed medication for mental health reasons?
    a. Yes
    b. No
17. If yes, which:
18. Are you currently prescribed medication for mental health reasons?
    a. Yes
    b. No
19. If yes, which:
20. Have you ever been diagnosed with a mental illness?
    a. Yes
    b. No
21. If yes, which:

APPENDIX C

SHSU Institutional Review Board Initial Approval

Sam Houston State University

Date: Oct 11, 2018 3:02 PM CDT TO: Jaime Anderson
FROM: SHSU IRB
PROJECT TITLE: An Examination of the Spanish MMPI-2-RF in Bilingual College Students
PROTOCOL #: IRB-2018-86
SUBMISSION TYPE: Initial
ACTION: Approved
DECISION DATE: October 11, 2018
EXPIRATION DATE: October 11, 2019
EXPEDITED REVIEW CATEGORY: 7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Greetings,

The above-referenced submission has been reviewed by the IRB and it has been Approved. This decision expires on October 11, 2019. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Modifications: Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please submit a Modification Submission through Cayuse IRB for this procedure.

Incidents: All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please submit an Incident Submission through Cayuse IRB for this procedure. All Department of Health and Human Services and sponsor reporting requirements should also be followed.

Renewals: Based on the risks, this project requires renewal reviews by this committee on an annual basis. Please submit a Renewal Submission through Cayuse IRB for this procedure. Your documentation for renewal must be received with sufficient time for review and updated approval before the expiration date of October 11, 2019.

Closures: When you have completed the project, a Closure Submission must be submitted through Cayuse IRB in order to close the project file.

Please note that all research records should be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact the Sharla Miles at 936-294-4875 or irb@shsu.edu. Please include your protocol number in all correspondence with this committee.

Sincerely,

Donna Desforges IRB Chair, PHSC PHSC-IRB

VITA

CURRICULUM VITAE

Tessa Long, M.A.
Department of Psychology and Philosophy
Sam Houston State University

EDUCATION

August 2016 – Expected 2022	**Doctor of Philosophy in Clinical Psychology** *Sam Houston State University* Huntsville, Texas Dissertation: A Psychometric Examination of the US Spanish MMPI-3: Reliability, Validity, and Comparability to the English Form (Proposed July 2020) Chair: Jaime Anderson, Ph.D.
August 2016 - December 2018	**Master of Arts in Clinical Psychology** *Sam Houston State University* Huntsville, Texas Thesis: The Effect of Perceived Discrimination and Documentation Status on Immigrant Undergraduate Use of Campus Counseling Services (Defended December 2018) Chair: Amanda Venta, Ph.D.
May 2014	**Bachelor of Science in Psychology (*Cum Laude*)** *University of Houston* Houston, Texas Minors: Chinese Studies, Phronesis

HONORS AND AWARDS

March 2021	*Diversity Poster Award* and *General Honorable Mention* A Psychometric Comparison of the US Spanish and English MMPI-3
April 2020	Society for Personality Assessment *Diversity Poster Award – Thursday Winner* Validity of the Personality Inventory for DSM-5 Short Form (PID-5-SF) in Latinx Undergraduates Society for Personality Assessment
April 2020	*Diversity Poster Award – Saturday Winner* Test-Retest Reliability for the English and US Spanish MMPI-2-RF in Latinx University Students Society for Personality Assessment
May 2014	*Areté Award*

	University of Houston Honors College
January 2014	*Provost Undergraduate Research Scholarship* ($1000) University of Houston Office of Undergraduate Research
May 2013	*Summer Undergraduate Research Fellowship* ($3500) University of Houston Office of Undergraduate Research
May 2011	*Houston Junior Chamber Scholarship* ($500) University of Houston Office of International Studies and Programs
May 2011	*International Education Fee Scholarship* ($500) University of Houston Office of International Studies and Programs
August 2010 – May 2014	*Academic Excellence Scholarship* ($2000) University of Houston
August 2010 – May 2014	*Tenneco Scholarship* ($1000) University of Houston Honors College

CONFERENCE TRAVEL FUNDING

March 2021	*Diversity Grant* ($300) Society for Personality Assessment Virtual Conference
March 2020	*Diversity Grant* ($500) Society for Personality Assessment – Conference Canceled due to COVID-19
March 2017	*Diversity Grant* ($650) Society for Personality Assessment
March 2017	*Student Travel Grant* ($200) Society for Personality Assessment
January 2017— January 2020	*Student Travel Funding* ($1000) Sam Houston State University Office of Graduate Studies

PEER REVIEWED PUBLICATIONS

1. Venta, A., Walker, J., Bailey, C., **Long, T.,** Mercado, A., & Colunga-Rodriguez, C. (In press). The importance of attachment to fathers in Latino mental health. *Journal of Social and Personal Relationships.*
2. Venta, A., **Long, T.,** Bailey, C., Galicia, B., Abate, A., Walker, J., & Salinas, K. (2021). Measurement invariance of the Inventory of Peer and Parent Attachment among Latinx and Non-Latinx College Students. *Journal of Latinx Psychology, 9*, 179-188.
3. **Long, T.,** Reinhard, E., Anderson, J., & Sellbom, M. (2021). An Examination of the Reliability and Validity of the Computerized Adaptive Test for Personality Disorder-Static Form (CAT-PD-SF). *Assessment, 28*(5), 1345-57.
4. Henderson, C., Manning, M., Davis, C., Conroy, D., Van Horn, L., Henry, K., **Long, T.,** Ryan, L., Boland, J., Yenne, E., Schiafo, M., & Fabian, J. (2020). Daily

Physical Activity and Alcohol Use in College Students. *Journal of Behavioral Medicine, 43*(3), 365-376.

5. Venta, A., Galicia, B., Bailey C., Abate, A., Marshall, K., & **Long, T.** (2020). Attachment and Loss in the Context of U.S. Immigration: Caregiver Separation and Characteristics of Internal Working Models of Attachment in High School Students. *Attachment and Human Development, 4,* 474-489.
6. Ha, C., Madan, A., **Long, T.,** & Sharp, C. (2016). An Examination of Incentive Strategies to Increase Participation in Outcomes Research for an Adolescent Inpatient Unit. Journal of Psychiatric Practice, 22(3), 250-256.

BOOK CHAPTERS

1. Sharp, C., & **Long, T.** (2017). Personality disorders: Psychological factors. *The SAGE Encyclopedia of Abnormal and Clinical Psychology.*

OTHER PUBLICATIONS

1. Bailey, C. & **Long, T.** (2019). So, you want to attend a professional conference? The Gavel. https://www.apadivisions.org/division-18/publications/newsletters/gavel/2019/10/students
2. Yenne, E., Salami, K., **Long,** T., Ryan, L., Venta, A., & Henderson, C. (2021). Discrimination is Overlooked in Substance Use Literature: A Brief Review and an Empirical Example. Counselor Magazine.

GRANT FUNDING

1. **Long, T.** (2019). Dissertation Grant. Society for Personality Assessment. $800. Primary investigator.
2. Henderson, C., Venta, A., Salami, T., Yenne, E., **Long, T.,** & Ryan, L. (2017). Discrimination and Ethnic Minority Emerging Adults. Enhanced Research Grant (ERG). Sam Houston State University. $15,000.00. Graduate Research Assistant.

PUBLICATIONS IN PROGRESS

1. **Long, T.,** & Venta, A. (under review). The Effect of Perceived Discrimination and Documentation Status on Immigrant Undergraduate Use of Campus Counseling Services.
2. Venta, A., Walker, J., & **Long, T.** (under review). Intersecting identities in college students: Citizenship status, BIPOC status, and gender compound perceptions of discrimination and effects on mental health.
3. **Long, T.,** Anderson, J., Guerra, R., Souza, M., Burchett, D., Tarescavage, A. M., & Glassmire, D. M. (in preparation). Predictive Validity of the MMPI-2-RF Triarchic Psychopathy Scales for Future Violence.

4. **Long, T.,** Haugh, S., & Anderson, J. (in preparation). Validity of the Personality Inventory for DSM-5-Short Form (PID-5-SF) in Latinx Undergraduates.

DATA COLLECTION PROJECTS

1. **Long, T.,** & Anderson, J. (closed Summer 2022). An Examination of the Spanish MMPI-2-RF in Bilingual College Students. Protocol #IRB-2018-86.
2. **Long, T.,** & Venta, A. (closed Spring 2020). Mental Health and Campus Experiences of Immigrant Undergraduate Students. Protocol #34345.

CONFERENCE PAPER PRESENTATIONS AND WORKSHOPS

1. Asan, A., **Long, T.,** Ruchensky, J., & Wright, A. J. (2022, March). *Blended Families: Cultivating a Culturally Inclusive Approach to Supervision and Mentorship.* In Davis, K. (Discussant) SPAGS Presents. Panelist on panel discussion at the annual Society for Personality Assessment Conference, Chicago, IL. Panelists listed in alphabetical order.
2. Boland, J., Dowgwillo, E., Jowers, C., **Long, T.,** Natoli, A., & Nelson, S. (2022, March). *Applying to Internship: A How-To Guide Written by Successful Applicants.* Invited panelist on panel discussion at the annual Society for Personality Assessment Conference, Chicago, IL. Panelists listed in alphabetical order.
3. Shumaker, N., **Long, T.,** Torres, A., Morales, F., Mercado, A., Marek, R., & Anderson, J. (2022, March). *Exploring Potential Ethnic Bias Among MMPI-3 Scales in Assessing Personality Psychopathology.* Paper presented at the annual Society for Personality Assessment Conference, Chicago, IL.
4. Henderson, C., Conroy, D., Van Horn, M. L., Henry, K., **Long, T.,** Ryan, L., Boland, J., Schiafo, M., Waldo, J., & Sze, C. (2020, November). *A latent class analysis of correlates of college student alcohol use and physical activity group membership. In C. Henderson & K. E. Shin (Co-Chairs), Uncovering Dynamic Clinical Processes: Statistical Approaches for Intensive Longitudinal Data.* Symposium presented at the Annual Meeting of the Association for Behavioral and Cognitive Therapies. Virtually presented.
5. **Long, T.,** Haugh, S., Torres, A., Morales, F., Mercado, A., & Anderson, J. (2020, June). *Examining the Convergence between the DSM-5 Trait Model for Personality Disorder and the English and Spanish Translations of the MMPI-3 PSY-5 Scales.* Paper presented to the 55th Annual Symposium on Recent MMPI Research, Virtual Conference.
6. Henderson, C., Salami, T., Ryan, L., **Long, T.,** Yenne, E., & Venta, A. (2020, April). *Discrimination and Substance Use Among Ethnic Minority Emerging Adults Seeking Treatment.* Project update presented to the 2020 Sam Houston State University Office of Research & Sponsored Programs (ORSP) Exposition Day. Huntsville, TX. (Conference canceled due to COVID-19).
7. Christensen, M.C., Galicia, B.E., **Long, T.,** & Varela, J.G. (2020, February). *First-generation college students: Improving academic success, mental health, and*

institutional resources. Workshop presented at the Sam Houston State University 16th Annual Diversity Leadership Conference, Huntsville, TX.

8. Venta, A., Bailey, C., **Long, T.,** Mercado, A., & Colunga-Rodriguez, C. (2019, July). *Self-reported attachment in young adults who were once left behind by caregiver migration*. In K. Jones-Mason & N. Gribneau Bahm (Chairs) and M. Steele (Discussant), Parent-child separation at the border: Lessons from attachment theory. Symposium presented at the biennial International Attachment Conference, Vancouver, Canada.
9. **Long, T.,** Arellano, S., Mercado, A., & Anderson, J. (2019, June). *Examining the Utility of the Spanish MMPI-2-RF in Assessing Symptoms of Psychopathology*. Paper presented to the 54th Annual Symposium on Recent MMPI Research. Minneapolis, MN.
10. Henderson, C., Salami, T., Venta, A., Yenne, E., **Long, T.,** & Ryan, L. (2019, April). *Discrimination and Substance Use Among Ethnic Minority Emerging Adults Seeking Treatment.* Project presented to the 2019 Sam Houston State University Office of Research & Sponsored Programs (ORSP) Exposition Day. Huntsville, TX.
11. **Long, T.**, Anderson, J., Guerra, R., Souza, M., Burchett, D., Tarescavage, A. M., & Glassmire, D. M. (2019, March). *The Incremental Utility of MMPI-2-RF Triarchic Psychopathy Scales in Predicting Future Violence.* In M. Sellbom (Chair), Personality Disorder Research. Paper presented to the 2019 annual convention of the Society for Personality Assessment (SPA). New Orleans, LA.
12. **Long, T.**, Galicia, B., Francis, J., & Varela, J. (2019, February). *Cultural Plunges: A Holistic Discussions on Implementing Cultural Trainings.* Workshop presented to the 15th annual Diversity Leadership Conference. Huntsville, TX.
13. **Long, T.**, Yenne, E., & Henderson, C. (2018, February). *SHSU Clinical Psychology Doctoral Program Diversity Committee: Successes, Challenges, and Future Directions.* Workshop presented to the 14th annual Diversity Leadership Conference. Huntsville, TX.

CONFERENCE POSTER PRESENTATIONS

1. **Long, T.,** Torres, A., Morales, F., Mercado, A., & Anderson, J. (2021, June). Examining the Convergent Validity of the US Spanish and English MMPI-3 with Brief Measures of General Psychopathology. Blitz Talk with Poster presented at the 56th Annual Symposium on Recent MMPI Research. Virtual Conference.
2. Morales, F. R., **Long, T.**, Torres, A., Palomin, A., Anderson, J., & Mercado, A. (August, 2021). *The Moderating Effect of Personality on the Association between Family Problems and Conduct Problems.* Poster proposal presented to the 2021 American Psychological Association Convention.
3. Cerda, O., Venta, A., Walker, J., Bailey, C., **Long, T.,** Mercado, A., & Colunga-Rodríguez, C. (2021, August). *The importance of attachment to fathers in Latino mental health.* Poster presented for presentation at the annual convention of the American Psychological Association.

4**. Long, T.,** Torres, A., Morales, G., Mercado, A., & Anderson, J. (2021, March). *A Psychometric Comparison of the US Spanish and English MMPI-3*. Poster presented to the Society for Personality Assessment 2021 Virtual Conference. Pre-recorded presentation.

5. Henderson, C., **Long, T.,** Ryan, L., Salami, T., Venta, A., & Yenne, E. (2020, October). *Growth in recovery among emerging adults from ethnic minority backgrounds: Impact of social support and Life Events.* Poster presented to the Addiction Health Services Research 2020 Conference, Providence, RI. Virtual Conference

6. Rivera, J., Venta, A., **Long, T.,** Bailey, C., Galicia, B., Abate, A., Walker, J., & Salinas, K. (2020, October). *Measurement invariance of the Inventory of Peer and Parent Attachment among Latinx and Non-Latinx College Students.* Poster accepted to the 2020 National Latinx Psychological Association (NLPA) Conference. Denver, CO. Virtual Conference.

7. Arellano, S., Che, P.Y., Torres, A., Sevilla-Matos, M., **Long, T.,** Ramos, M., Anderson, J., Mercado, A. (2020, August). *Examining the MMPI-2-RF Somatic Complaints (RCI) Scale with Bilingual Latinx Students: A Pilot Study.* Poster presented at APA's Annual Scientific Meeting, Division 12 Society of Clinical Psychology in Washington, D.C.

8. Morales, F. R., **Long, T.,** Ramos, M., Torres, A., Anderson, J., & Mercado, A. (2020, August). *Internalizing problems as predictors of health-related concerns in a Latinx undergraduate sample.* Poster presented at APA's Annual Scientific Meeting in Washington, D.C.

9. Morales, F. R., **Long, T.,** Ramos, M., Torres, A., Anderson, J., & Mercado, A. (2020, August). *Psychoticism and response validity in a Latinx undergraduate sample.* Poster presented at APA's Annual Scientific Meeting in Washington, D.C.

10. Torres, A., **Long, T.,** Ramos, M., Anderson, J., & Mercado, A. (2020, August). *Acculturation Role in the Depression±Substance Use Relationship among US Latinx Adults.* Poster presented to the 2020 American Psychological Association Annual Meeting.

11. Iracheta, B., **Long, T.,** Torres, A., Morales, F., Mercado, A., & Anderson, J. (2020, June). *Test-Retest Reliability for the English and Spanish MMPI-3 in Latinx University Students.* Blitz talk presented to the 55th Annual Symposium on Recent MMPI Research, Virtual Conference.

12. **Long, T.,** Haugh, S., Torres, A., Morales, F., Mercado, A., & Anderson, J. (2020, March). *Validity of the Personality Inventory for DSM-5 Short Form (PID-5-SF) in Latinx Undergraduates.* Poster accepted to the 2020 annual convention of the Society for Personality Assessment (SPA). San Diego, CA. (Conference canceled). Virtual recording of poster presentation available: https://www.personality.org/annual-convention/2020-poster-winners/.

13. Iracheta, B., **Long, T.,** Torres, A., Morales, F., Mercado, A., & Anderson, J. (2020, March). *Test-Retest Reliability for the English and US Spanish MMPI-2-RF in Latinx University Students.* Poster accepted to the 2020 annual convention for the Society of Personality Assessment. San Diego, CA. (Conference canceled). Virtual recording of poster presentation available: https://www.personality.org/annual-convention/2020-poster-winners/.

14. Bailey, C. A., **Long, T.**, & Venta, A. C. (2020, March). *The Effect of Immigration Status and Preparedness for Court on Emotional Symptoms in College Students*. Poster presented to the annual American Psychology-Law Society Conference, New Orleans, LA.
15. Galicia, B. E., **Long, T.**, & Venta, A. (2018, November). *Perceived Social Support in Citizen, Documented, DACA, and Undocumented Latinx Immigrant Undergraduates.* Poster presented to the 2018 Annual Texas Psychological Association, Frisco, TX.
16. **Long, T.,** & Venta, A. (2018, October). *The effect of perceived discrimination and documentation status on immigrant undergraduate use of campus counseling services.* Poster presented to the 2018 annual convention of the National Latinx Psychological Association, San Diego, CA.
17. **Long, T.,** Galicia, B. E., & Venta, A. (2018, July). *Association of Cultural Values and Drinking in Latino Immigrant Undergraduates.* Poster presented to the 5th Biennial APA Division 45 Research Conference, Austin, TX.
18. **Long, T.,** Reinhard, E., Anderson, J., & Sellbom, M. (2018, March*). An examination of the reliability and validity of the Computerized Adaptive Test of Personality Disorder-Static Form (CAT-PD-SF).* Poster presented to the annual convention of the Society for Personality Assessment, Washington, DC.
19. **Long, T.,** Kasowski, A., & Anderson, J. (2017, November). *The association between sexually aggressive cognitions and pathological personality traits in men.* Poster presented at the Texas Psychological Association Annual Convention, Houston, TX.
20. Ryan, L., **Long, T.**, & Henderson, C. (2017, November). *Associations of daily positive and negative affect with daily alcohol use and exercise in an undergraduate sample.* Poster presented at the Texas Psychological Association, Houston, TX.
21. Marshall, K., **Long, T.,** Abate, A., Barker, M., Henderson, C., & Venta, A. (2017, March). *First data on linguistic analysis as a method for assessing symptoms after sexual trauma in adolescents*. Poster presented to the annual convention of the American Psychology Law Society, Seattle, WA.
22. Mattos, L., Bernhard, P., Varela, J., Yenne, E., Kavish, N., **Long, T.**, Holdren, S., & Manyose, M. (2017, March). *The Effects of Telepsychology on Interview Disclosure.* Poster presented at the annual meeting of the American Psychology-Law Society, Seattle, WA.
23. **Long, T**., Mellick, W., & Sharp, C. (2016, April). *Bottom-up and top-down mentalizing in adolescents with psychopathic traits following inpatient hospitalization.* Poster presented at the 2016 Biennial Meeting for the Society for Research in Adolescents; Baltimore, MD.
24. Kalpakci, A., Mellick, W., Vanwoerden, S., **Long, T.,** Njam, J., & Sharp, C. (2016, April). *First Psychometric Evaluation of the Shame Inventory in Adolescents*. Poster presented at the annual meeting of The North American Society for the Study of Personality Disorders (NASSPD), New York, NY.
25. **Long, T.**, Ha, C., Kalpakci, A., & Sharp, C. (2015, March). *Ethnic Differences in Interview-based and Self-reported Borderline Personality Disorder in*

Hospitalized Adolescents. Poster presented at the annual meeting of The North American Society for the Study of Personality Disorders, Boston, MA.

26. Ha, C., **Long**, **T**., Cirino, P., & Sharp, C. (2013, November). *The relation between theory of mind and executive function in adolescents.* Poster presented at the 2013 annual convention of Texas Psychological Association, Houston, TX.
27. **Long, T**., Vanwoerden, S., & Sharp, C. (2013, October). *Increased frequency of nonsuicidal self-injury in comorbid depression and ADHD and the role of executive function.* Poster presented at the University of Houston annual Undergraduate Research Day, Houston, TX.
28. Schramm, A. T., Vanwoerden, S., **Long**, **T**., Venta, A., & Sharp, C. (2013, September). *The relation between attachment security and borderline personality disorder in adolescent psychiatric inpatient sample.* Poster presented at the 27th Annual Meeting of the Society for Research in Psychopathology, Oakland, CA.

CLINICAL EXPERIENCE

July 2021—June 2022

Predoctoral Intern – Underserved Populations Track
University of Kansas Medical Center, Kansas City, KS

- Three-month rotation at Osawatomie State Hospital (current major rotation)
  - Provide individual therapy to patients housed on long-term and criminally adjudicated/NGRI units
  - Co-facilitate and facilitate weekly mindfulness and emotion regulation groups
  - Attend morning huddle and weekly treatment team meetings to discuss treatment team needs for patients and/or discharge plans

Population: severe mental illness, forensic, adult
Supervisor: Tiffany Johnson, Psy.D.

- Year-long minor rotation at the KUMC Outpatient Psychiatry Clinic
  - Provide individual therapy to patients with a range of mental health and medical issues
  - Collaborate care with psychiatry and nursing staff
  - Complete psychodiagnostic assessments as needed with particular focus on the therapeutic assessment model
  - Collaboratively complete safety plans and hospitalizations when clinically indicated

Population: adult, traumatic brain injury, personality disorder, trauma
Supervisors: Edward Hunter, Ph.D. ABPP; Elizabeth Penick, Ph.D.; Danielle Johnson, Ph.D.; Albert Poje, Ph.D.

- Year-long minor rotation at the University of Kansas Center for Telemedicine and Telehealth
  - Provide individual and family therapy to patients located within their homes, satellite clinics, or the school system

    - Collaborate care with other medical and psychiatric providers
    - Gather collateral information from school/teachers
    - Communicate appropriate clinical information with school psychologists and IEP teams

Population: child, adult, trauma, substance use, rural
Supervisors: Shawna Wright, Ph.D.,; Elizabeth Penick, Ph.D.

- Year-long minor rotation at the Duchesne Clinic
    - Provide behavioral health consultation and individual therapy within a primary-care clinic
    - Work closely with translators, nurse practitioners, and medical providers

Population: adult, Spanish-speaking, Latinx, immigrant
Supervisors: Katherine Conover, Ph.D.; Jana Zaudke, M.D.

- Three-month major rotation within two primary care clinics (Family Medicine and Internal Medicine; completed)
    - Provided behavioral health consultations in-person and via telemedicine platforms to patients with a wide array of medical and mental health issues
    - Assisted patients in securing community mental health care
    - Provided patients with personalized resources
    - Coordinated with on-site social workers to provide appropriate resources
    - Completed warm-handoffs with medical providers
    - Participated in an interprofessional training clinic providing collaborative care with medical, pharmacy, and nursing students

Population: adult, medical, multidisciplinary
Supervisors: Wendi Born, Ph.D.; Katherine Conover, Ph.D.; Tara Brim, Ph.D.

- Two-week rural immersion at Community Health Center of Southeast Kansas in Pittsburgh, Kansas (completed)
    - Observed a range of services offered throughout the health system including individual and family therapy, psychodiagnostic evaluations, pre-bariatric surgery evaluations, psychiatric nurse practitioner medication follow-ups, addiction treatment services, behavioral health consultations in a primary clinic and school settings, and in-home medication deliveries
    - Worked closely with staff to understand specific needs of rural populations
    - Learned about grant funding and writing which assists in providing funding for rural services

Population: rural, adult, child, multidisciplinary
Supervisors: Eric Thomason, PMHNP; Edward Hunter, Ph.D., ABPP

- Three-month major rotation at KUMC Marillac Children's Inpatient and Outpatient clinic (anticipated)
    - Complete ADHD evaluations and provide feedback to families
    - Complete psychiatrist-referred therapy and assessment consultations
    - Provide individual therapy to children and adolescents in both inpatient and outpatient settings
    - Lead group therapy for inpatient children and adolescents

Population: child, family
Supervisors: Danielle Johnson, Ph.D.; Tyler Droege, Ph.D.

- Three-month major rotation at KUMC Strawberry Hill Psychiatric Hospital (anticipated)
    - Perform psychodiagnostic and differential diagnosis evaluations as needed
    - Co-facilitate and lead group therapy with acute serious mentally ill patients
    - Provide individual therapy
    - Work closely with medical students and multidisciplinary care team

Population: adult, inpatient
Supervisors: Albert Poje, Ph.D.

September 2020 – May 2021 **Practicum Student**
Walker County Adult Probation Department, Huntsville, TX

- Conducted psychodiagnostic evaluations, including a clinical interview and administration of personality, cognitive, and achievement measures, and co-author subsequent reports
- Conducted substance use evaluations, consisting of clinical interviews and the Addiction Severity Index (ASI), and co-author subsequent reports
- Performed suicide risk assessments
- Contacted probation officers for additional collateral and safety management

Population: Ethnically diverse adults on community supervision
Supervisor: Darryl Johnson, Ph.D.

July 2017— May 2021 **Practicum Student**
Psychological Services Center, Huntsville, TX

- Individual psychotherapy with adult and child clients; family therapy; teletherapy
    - Conducted intake evaluations and author intake reports
    - Formulated treatment plans and monitor treatment goals using self-report measures

- Applied evidence-based interventions including components of Dialectical Behavioral Therapy (DBT), MATCH-ADTC, Motivational Interviewing (MI), and self-compassion

- Conducted psychodiagnostic assessments
  - Clinical and collateral interviews
  - Cognitive, achievement, personality, and psychopathology testing
  - Consult with outside professionals
  - Author comprehensive, integrated reports
- Conducted court-ordered pre-trial evaluations (i.e., competency to stand trial and mental state at the time of the offense for adults)
  - Co-author forensic evaluation reports for courts, including documentation of psycholegal opinion and treatment recommendations
- Conducted court-ordered juvenile evaluations
  - Perform clinical interviews with juvenile and parent
  - Administer, score, and interpret cognitive, achievement, personality, and psychopathology measures
  - Co-author integrated reports

Supervisors: Mary Alice Conroy, Ph.D; Wendy Elliot, Ph.D.; Craig Henderson, Ph.D.; Darryl Johnson, Ph.D.; Jorge Varela, Ph.D.

June 2019 – May 2020 **Psychology Intern/Counselor**
Telebehavioral Care Program, Bryan, TX

- Provided individual, evidence-based therapy including components of: Cognitive Processing Therapy (CPT), Dialectical Behavioral Therapy (DBT), Acceptance and Commitment Therapy (ACT), Cognitive Behavioral Therapy (CBT), Skills Training in Affective and Interpersonal Regulation/Narrative Storytelling (STAIR-NST), behavioral reinforcements, and supportive counseling via telehealth platforms (videoconferencing in Mend and telephone sessions)
  - Conducted intake evaluations and authored intake reports
  - Collaborated with clients on treatment plans and monitored progress using self-report measures
  - Conducted suicide risk assessments/management
  - Consulted with client's primary care physicians to ensure best care
- Participated in weekly didactics and group supervision meetings

Population: Ethnically diverse adults from rural, low income areas with a wide array of treatment goals and needs
Supervisors: Jessica Groberio, Ph.D.; Carly McCord, Ph.D.

June 2018 – June 2019 **Psychological Intern**
Montgomery County Probation and Detention Center, Conroe, TX

- Conducted psychodiagnostic evaluations on justice-involved youth: pre-adjudicated juveniles, juveniles in detention, juveniles on probation

- Conducted psychodiagnostic evaluations on justice-involved youth: pre-adjudicated juveniles, juveniles in detention, juveniles on probation
- Administered, scored, and interpreted cognitive, achievement, and personality measures
- Coordinated with juvenile care-givers and juvenile probation officers to obtain collateral interviews and additional documentation
- Co-authored integrated reports for the juvenile probation officers, attorneys, and judges presiding over the juvenile's cases including diagnostic impressions and treatment recommendations

Population: Justice-involved juveniles, ethnically and economically diverse

Supervisor: Darryl Johnson, Ph.D.

CLINICAL SUPERVISION

August 2018 – May 2019 **Peer Supervisor**
Doctoral Practicum I (PSY 8382)

- Co-facilitated supervision sessions of a second-year doctoral student
- Provided feedback on intake, 120-day, and integrated psychodiagnostic reports

Supervisors: Craig Henderson, Ph.D.; Wendy Elliot, Ph.D.

May 2018 – July 2018 **Peer Supervisor**
Introduction to Doctoral Practicum (PSYC 8381)

- Co-facilitated supervision sessions of first year doctoral students with clinic director
- Reviewed mock therapy session videos with supervisees
- Provided feedback on foundational counseling skills
- Served as a mock therapy client for students practicing clinical skills

Supervisor: Mary Alice Conroy, Ph.D.

RESEARCH POSITIONS AND EMPLOYMENT

August 2016 – Present *Graduate Research Assistant*
Assessment of Personality Psychopathology Lab
Sam Houston State University, Huntsville, TX
Director: Jaime Anderson, Ph.D.

August 2016 – December 2018 *Graduate Research Assistant*
Youth and Family Studies Lab
Sam Houston State University, Huntsville, TX
Director: Amanda Venta, Ph.D.

August 2016 – August 2017 *Graduate Research Assistant*
Department of Psychology and Philosophy
Sam Houston State University, Huntsville, TX

	Director: Craig Henderson, Ph.D.
August 2016 – March 2017	*Graduate Research Assistant* Department of Psychology and Philosophy Sam Houston State University, Huntsville, TX Director: Jorge Varela, Ph.D.
July 2014 – July 2016	*Research Coordinator II* Adolescent Treatment Program The Menninger Clinic, Houston, TX Directors: Carla Sharp, Ph.D. & Christopher Frueh, Ph.D.
September 2013 – July 2014	*Research Assistant* Adolescent Treatment Program The Menninger Clinic, Houston, TX Directors: Carla Sharp, Ph.D. & Christopher Frueh, Ph.D.
April 2013 – June 2014	*Lab Manager* Developmental Psychopathology Lab University of Houston, Houston, TX Director: Carla Sharp, Ph.D.
August 2012 – April 2013	*Research Assistant* Developmental Psychopathology Lab, University of Houston, Houston, TX Director: Carla Sharp, Ph.D.

TEACHING EXPERIENCE

Summer 2020	**Guest Lecturer** *Abnormal Psychology (PSYC 3331)* Gender Dysphoria and Sexual Dysfunctions Instructor: Jorge Varela, Ph.D. Sam Houston State University Huntsville, TX • Lectured a virtual classroom of 25 students via Zoom
Fall 2019 – Spring 2020	**Teaching Assistant** *Practicum (Capstone) (PSYC 8382)* Instructor: Craig Henderson, Ph.D. Sam Houston State University Huntsville, TX • Supervised second-year doctoral students during their first clinical (therapy and assessment) cases • Performed check outs on cognitive and achievement measures to ensure readiness for assessment cases • Conducted clinical interview and feedback role-plays with faculty instructor

- Authored and disseminated clinical vignettes for student practice clinical skills following COVID-19 clinic shut down

Spring 2018 **Teaching Assistant**
Abnormal Psychology (PSYC 3331)
Instructor: Jorge Varela, Ph.D.
Sam Houston State University
Huntsville, TX

- Organized lecture and testing materials for instructor
- Graded scantron-based examinations

Fall 2017 – Spring 2018 **Graduate Teaching Assistant**
Introduction to Psychology (PSYC 1301)
Sam Houston State University
Huntsville, TX

- Acted as instructor on record for undergraduate lectures of 170 students
- Created examinations and co-created departmental benchmark examination
- Graded and organized testing materials
- Held office hours for undergraduates to ask additional questions

PROFESSIONAL EXPERIENCE

March 2021 – March 2022 **Member-At-Large**
Society for Personality Assessment Graduate Student (SPAGS) Board

- Attend student board meetings to clarify and complete initiatives
- Act as student representative for the SPA Awards Task Force
- Focus on increasing diverse representation within the organization as a member of the Diversity and Inclusion and Recruitment and Retention committees

October 2020 – May 2021 **Graduate Student Member**
College of Humanities and Social Sciences Diversity and Inclusion (DivIn) Committee – Graduate Student Subcommittee

- Attended committee meetings to discuss upcoming diversity related events and committee action items
- Coordinated a virtual department mixer for Spring 2020
- Assisted in writing committee's mission statement and policies

March 2020 – May 2021 **Student Member**
SHSU Psychological Services Center Teletherapy Task Force

- Reviewed resources from American Psychological Association, American Telemedicine Association, and other

peer-reviewed articles on ethical considerations for teleservices
- Attended meetings with the task force discussing transitioning completely in-person services to telemental services during the COVID-19 pandemic
- Attended general staff meetings with the task force to address questions and concerns from clinic staff regarding telehealth services
- Assisted in creating a clinic-specific manual for conducting telehealth services

August 2018 – December 2019 **Campus Representative**
Society for the Psychological Study of Culture, Ethnicity and Race (APA Division 45)

- Disseminated information from Division 45 to the program's student body and faculty
- Coordinated with undergraduate student organizations to discuss undergraduate research opportunities within Division 45
- Attended online meetings with campus representatives from other institutions

June 2018 **Interviewer/Coordinator**
Clinical Psychology Doctoral Program/Brazos County Jail

- Attended planning meeting for collaborative video filming project for training purposes
- Planned interview content and topics, including administration of psychotropic medication within jail and de-escalation
- Conducted interviews of jail staff, including nurses and correction officers, which were filmed for use in training across Texas

August 2017 – May 2019 **Peer Mentor**
Clinical Psychology Doctoral Program

- Facilitated the transition into graduate school for incoming doctoral students
- Coordinated monthly meetings with mentees

April 2017 – December 2018 **Student Member**
Diversity Committee Clinical Psychology Doctoral Program

- Founding member of the committee
- Assisted in the development of the committee mission statement, program commitment to diversity statement, and diversity related videos for the program website

- Participated in the diversity portion of faculty interviews
- Attended monthly committee meetings and recorded minutes

August 2017—August 2018 **Student Representative**
Clinical Psychology Doctoral Program

- Attended weekly faculty meetings to serve as the student liaison
- Recorded meeting minutes and disseminated information to the study body
- Organized, disseminated, and communicated annual program review feedback from students to faculty and vice versa
- Coordinated interview weekend for potential doctoral students
  - Created student and faculty interview schedules
  - Organized meals during and after formal interviews
  - Scheduled city-wide apartment tours
  - Coordinated student-led travel to and from airport
  - Assigned interviewees to graduate student housing
- Organized New Student Orientation for the incoming cohort of doctoral students

SPECIALIZED TRAININGS

November 2019	Structured Clinical Interview for the DSM-5 Alternative Model for Personality Disorders (SCID AMPD) and Hare Psychopathy Checklist-Screener Version (PCL-SV) Interrater Reliability Training
April 2019	Cognitive Processing Therapy (CPT) Web Training
August 2016	Multidimensional Family Therapy Research (MDFT) Coding using Therapist Behavior Rating Scale
October 2015	Mutuality of Autonomy (MOA) variable of the Rorschach Rater Training
May 2015	Systems Training for Emotional Predictability & Problem Solving (STEPPs)
November 2014	Child Attachment Interview Administration and Rater Training
July 2014	Columbia-Suicide Severity Rating Scale Training

PROFESSIONAL AFFILIATIONS

- National Latinx Psychological Association (NLPA)
- Society for Personality Assessment (SPA)
- Section IX, Division 12 American Psychological Association