

developed the Perceived Identity & Ethnicity Scales (PIES), a brief rating scale system to quickly (<2 minutes) capture an individual's perceived acculturative identity across several domains. In the current study, we sought to (1) provide initial psychometric support of the PIES and (2) examine how it relates to cognition in a culturally and linguistically diverse sample.

**Participants and Methods:** We recruited 242 individuals from both university and community samples (age=23.7±7.6, range 18-72; <12 Years of Education=4%; 78% Female; 58% Hispanic/Latin American; 69% middle SES; 22% educated outside the USA). In addition to demographic questionnaires, participants completed the PIES; an established measure of acculturation (the Bicultural Involvement Questionnaire, BIQ) and bilingualism (Bilingual Language Profile, BLP); measures of mood (the Depression, Anxiety, Stress Scales, DASS; Apathy Evaluation Scale, AES); and of self-reported cognitive functioning (Everyday Cognition, ECog). A subsample of Spanish speakers (n=86) also completed a cognitive battery validated for use in this population (the Spanish English Neuropsychological Assessment Scales, SENAS). For the first aim, we examined the reliability, validity, and dimensionality of the PIES in the full sample. In the Spanish-speaking subsample, we examined the relationship between the tool and both subjective and objective cognition using linear regression controlling for age, education, sex/gender, and premorbid intellectual functioning.

**Results:** Measures of internal consistency and dimensionality supported a bidimensional model of acculturation; identification with culture of family origin (PIES-O) was not related to identification with US American culture (PIES-U;  $r=0.036$ ,  $p>0.05$ ). Cultural preference scores from the BIQ were associated with PIES-O ( $r=-0.322$ ) and PIES-U ( $r=0.277$ ; both  $ps<0.001$ ) in the expected directions. PIES-O ( $r=0.350$ ) and PIES-U ( $r=-0.432$ ) were associated with the ability to speak a language other than English on the BLP (both  $ps<0.001$ ). PIES-U, but not PIES-O, was also strongly associated with other BIQ and BLP scores as well as with receiving education outside of the USA at medium to large effect sizes ( $rs=0.3$  to  $0.6$ ; all  $ps<0.001$ ). In the subsample, PIES-O and PIES-U were not associated with subjective cognition as measured by the ECog ( $\Delta R^2=0.016$ ,  $p>0.05$ ); global cognition as measured by the Montreal Cognitive Assessment (MoCA;  $\Delta R^2=0.046$ ,

$p>0.05$ ); or SENAS cognitive composite scores ( $\Delta R^2=0.016$ ,  $p>0.05$ ) after controlling for covariates.

**Conclusions:** Findings provide strong initial psychometric support for the utility of the PIES in the assessment of acculturation. Moreover, these results further support the bidimensional model of acculturation. Acculturation as measured by the PIES was not associated with cognitive abilities in this highly educated and mainly female cross-sectional sample. Longitudinal research accounting for acculturation is needed to elucidate these relationships.

**Categories:** Cross Cultural Neuropsychology/  
Clinical Cultural Neuroscience

**Keyword 1:** acculturation

**Keyword 2:** assessment

**Keyword 3:** cross-cultural issues

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## 5 Normative Data Collection for the Multicultural Neuropsychological Scale (MUNS)

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**Objective:** Despite the array of neuropsychological tests available, these assessments are largely made and developed for use in WEIRD (western, educated, industrialized, rich, democratic) societies (Fernandez, 2019; Ponsford, 2017). The Multicultural Neuropsychological Scale (MUNS) was developed with underrepresented groups in mind as a universally valid neuropsychological assessment which can be used across cultures and adapted to different languages. To assist with the validation of the MUNS as a cross-cultural instrument, investigators administered the MUNS to a cognitively 'healthy' college-aged population in the United States as a means of

collecting normative data. Results were compared to samples taken from an Argentine university, Universidad Católica de Córdoba, and combined with another American university, Marymount Loyola University. The goal of this comparison was to provide evidence supporting the validity of the MUNS as a universal, cross-cultural neuropsychological assessment battery.

**Participants and Methods:** Students from James Madison University (JMU) in Harrisonburg, Virginia (N = 24, Age = 20.083 ± 1.93, Female = 87.5%) were recruited via a campus-wide email. Students who met inclusionary criteria were selected for MUNS administration. Students completed a background questionnaire and effort measure (REY-15; Rey, 1964) before completing the MUNS battery, consisting of eight subtests with four delayed trials. Descriptive statistics of the group were assessed, and one-way ANOVAs were conducted on the various subtests to determine whether differences exist between the American and Argentine samples.

**Results:** No significant difference between groups was found for seven subtests. A difference existed on the Attention subtest between the American ( $f(1, 106) = 45.409, p < .001$ ).

**Conclusions:** The results show support for the cross-cultural validity of the MUNS. The only significant difference was found in the Arrows (Old) subtest. This is in alignment with previous administrations of the MUNS (Fernandez et al., 2018). Further studies are needed to assess potential bias within this subtest, as well as to pursue comparison studies for the New Arrows subtest administered within this USA sample. The present findings provide further evidence that the MUNS can be applied as a neuropsychological assessment across a variety of populations.

**Categories:** Cross Cultural Neuropsychology/  
Clinical Cultural Neuroscience

**Keyword 1:** cross-cultural issues

**Keyword 2:** test development

**Keyword 3:** neuropsychological assessment

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## 6 A review of neuropsychological measures of executive functioning in the

## Japanese and Japanese-American population

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**Objective:** There are approximately 1.5 million Japanese and Japanese Americans in the United States, with the Japanese population increasing steadily over the past two decades. Given the growing number of the Japanese population, it is likely that a clinical neuropsychologist may encounter a Japanese patient, particularly for neurocognitive disorder evaluations given the aging population.

Literature has reported that cross-cultural bias in neuropsychological testing and cultural factors affect individuals' test performance. In order to conduct and interpret neuropsychological assessments for this population, it is important to use normative data and consider the impact of various factors such as acculturation, language, and generation in the U.S. Availability of normative cognitive test data for Japanese-Americans is limited. Tests with most extensive use, adaptation, validation, and norming were identified. Many clinically used measures of executive functioning (EF) have been translated into Japanese and studied in multiple clinical populations. We present information on tests in this domain given their appropriateness for use in cross-linguistic and cross-cultural evaluations.

**Participants and Methods:** Available studies of neuropsychological tests measuring EF that have been translated and normed in the Japanese and/or Japanese-American patient population are reported. Review of the literature was conducted by authors of Japanese descent familiar with neuropsychological assessment and Japanese and Japanese-American culture. We prioritized studies published in both English and Japanese and those that included commonly utilized tests in the U.S, allowing for maximum accessibility and utility for Western-based neuropsychologists. Additionally, inclusion priority was given to studies published in English which report the clinical diagnoses, age range, and gender characteristics of the sample population. The Wisconsin card sorting