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The effect of language on functional capacity assessment in middle-aged and older US Latinos with schizophrenia

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ABSTRACT

The U.S. Latino population is steadily increasing, prompting a need for cross-cultural outcome measures in schizophrenia research. This study examined the contribution of language to functional assessment in middle-aged Latino patients with schizophrenia by comparing 29 monolingual Spanish-speakers, 29 Latino English-speakers, and 29 non-Latino English-speakers who were matched on relevant demographic variables and who completed cognitive and functional assessments in their native language. There were no statistically significant differences between groups on the four everyday functioning variables (UCSD Performance-Based Skills Assessment [UPSA], Social Skills Performance Assessment [SSPA], Medication Management Ability Assessment [MMAA], and the Global Assessment of Functioning [GAF]). The results support the cross-linguistic and cross-cultural acceptability of these functional assessment instruments. It appears that demographic variables other than language (e.g., age, education) better explain differences in functional assessment among ethnically diverse subpopulations. Considering the influence of these other factors in addition to language on functional assessments will help ensure that measures can be appropriately interpreted among the diverse residents of the United States.

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1. Introduction

The number of U.S. residents identified as Hispanic/Latino is increasing steadily; in 2010, 16% of the population were identified as Hispanic/Latino and more than half the growth in the U.S. population from 2000 to 2010 was due to the increased Hispanic/Latino population (U.S. Census Bureau, 2011). Further, nearly half of the Spanish speaking U.S. population between the ages of 18 and 64 reports speaking English less than "very well", with 10% speaking English "not at all" (Shin and Kominski, 2010; Ennis et al., 2011; U.S. Census Bureau, 2011). As the percentage of aging Latinos grows, so will the number of Latinos living with schizophrenia, prompting a need for careful evaluation of whether assessment strategies and outcome measures can be applied equivalently across diverse US subpopulations.

Cross-cultural studies have reported differing cross-ethnic patterns of functional outcome in schizophrenia (Weisman, 1997; Brekke and Barrio, 1997; Hopper and Wanderling, 2000; Harrison et al., 2001; Bae and Brekke, 2002; Haro et al., 2011). Observed differences appear to result from economic, cultural, and environmental factors more than differences in the disorder itself (Bae and Brekke, 2002; Cardenas et al., 2008; Iyer et al., 2010; Haro et al., 2011) These findings, however, are limited by methodological variability in the definition of schizophrenia, as well as differences across studies in demographic (e.g., age, gender) and clinical (e.g., duration of untreated psychosis) variables (Hopper and Wanderling, 2000; Patel et al., 2006; Cohen et al., 2008; Iyer et al., 2010). Therefore, cross-national differences in functional outcome may be complex and multiply-determined (Cohen et al., 2008; McGrath, 2008; Strauss, 2008).

Recent recommendations to improve the design and interpretation of such studies include systematic evaluation of functional outcome scales (Bromley and Brekke, 2010). Substantial evidence suggests that interview-based ratings and self- or other-report measures can be influenced by recall bias, informant prejudice, or intrusive symptoms (Atkinson et al., 1997; Hendryx et al., 2001; Bromley and Brekke, 2010). Performance-based scales are considered more psychometrically robust (Patterson et al., 2001a, 2001b; Harvey et al., 2007; Mausbach et al., 2009; Bromley and Brekke, 2010) and are not influenced by environment or social factors

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(Leifker et al., 2010). However, it remains uncertain whether these measures can be broadly applied in other cultures and languages.

One recent study sought to address this issue and examined ratings of the cultural adaptability of several functional outcome scales in eight different countries (Velligan et al., 2012; see Gonzalez et al., 2013 for qualitative comments from the international respondents). The authors concluded that a number of performance-based scales yield different psychometric properties and are less culturally adaptable than others. For example, the UCSD Performance-Based Skills Assessment (UPSA) (Patterson et al., 2001a, 2001b) and its brief version (Mausbach et al., 2007) were both globally rated to have low cultural adaptability in Mexico, China, and India, though they each showed adequate adaptability in Germany, Argentina, Spain, and Russia. The authors recommended collaborative modification of problematic subtests to better reflect country- or culture-specific everyday functioning skills, while maintaining similar cognitive demands to the original version. Along these lines, additional evidence has accrued to suggest that performance on the UPSA-B is similar in other western cultures (i.e., Sweden; Harvey et al., 2009) and that diagnostic differences in UPSA-B scores are similar between western samples and a Chinese sample, though the effect of education was much stronger in China (McIntosh et al., 2011). A particular caution cited by Velligan et al. (2012) is that empirical evidence of the reliability and validity of these modified UPSA tests is not available in many countries where it has been adapted. These psychometric data are forthcoming; recent studies have supported the reliability and validity of the Swedish version of the UPSA-B (Olsson et al., 2012), as well as a European-Spanish adaptation of the UPSA (Garcia-Portilla et al.,2013).

It remains necessary, therefore, to not only ensure adequate translation and adaptation of functional measures, but also to identify and operationally define those sociodemographic variables that may confound the results of functional assessments (Gasquoine, 1999; Jeste et al., 2005; Velligan et al., 2012). Although some demographic variables are significantly related to everyday functioning ability (e.g., age, education, and racial status) (Gould et al., 2012), no studies to date have investigated the effect of language of administration. Often cited as a proxy for acculturation and used in the development of acculturation measures (Olmedo and Padilla, 1978; Deyo et al., 1985; Marin et al., 1987; Cuellar et al., 1995) language fluency or preference may be among the many sociodemographic variables that affect psychological assessment in an increasingly multilingual, multicultural world.

There is a substantial evidence that language (Spanish versus English) influences neuropsychological assessment in both neurologically normal, community-based samples (Jacobs et al., 1997; Lyness et al., 2006) and those with dementia (Loewenstein et al., 1993). These differences appear on measures with greater language demand (Gasquoine et al., 2007) as well as on measures of nonverbal, visuospatial abilities (Jacobs et al., 1997). Speculation about the reasons for these discrepancies ranges from poor item translation to content inequivalence (van de Vijver and Tanzer, 2004) to differences in educational emphasis or exposure to geometric stimuli (Jacobs et al., 1997). Given the strong relationship between neuropsychological and functional performance, a similar effect of language on functional capacity assessment may be expected. This study examined the effect of language on the assessment of functional capacity in middle-aged and older Latino patients with schizophrenia.

2. Method

2.1. Participants

Participants were part of two different psychosocial intervention studies for middle-aged and older adults published previously (Patterson et al., 2005, 2006). The original studies included 29 monolingual Spanish-speaking (MSS) patients who were recruited from three mental health clinics near the U.S.–Mexico border in San Diego County, and 210 English-speaking (ES) patients who were recruited from board-and-care facilities in San Diego. The matched samples used for the current analyses included the 29 MSS participants, 29 English-speaking Latino participants, and 29 English-speaking non-Latino participants. For both studies, patients had to be at least 40 years old and meet DSM-IV criteria for schizophrenia or schizoaffective disorder, and were excluded if they had a DSM-IV diagnosis of dementia, were at serious risk for suicide, were participating in other intervention research, or were unable to complete testing. Both studies were approved by the University of California, San Diego IRB, and all participants provided voluntary written informed consent to participate in the studies. Data from a subset of 112 participants (33 Spanish-speaking and 79 Anglo-American English-speaking) were presented previously (Jeste et al., 2005).

2.2. Procedure and measures

Participants underwent a clinical, cognitive, and functional assessment at study entry. MSS participants were tested in Spanish by bilingual, bicultural research assistants.

Psychiatric symptom severity was measured with the Positive and Negative Syndrome Scale (PANSS) (Kay et al., 1987, 1990) and the Hamilton Rating Scale for Depression (Hamilton, 1960; Ramos-Brieva and Cordero-Villafafila, 1988). Cognitive performance was assessed with the Dementia Rating Scale (DRS) (Jurica et al., 2001; Arnold et al., 1998), which measures attention, memory, initiation and perseveration, construction, and conceptualization. Performance-based functional capacity was evaluated with three different measures. The UCSD Performance-Based Skills Assessment (UPSA) (Patterson et al., 2001a) requires participants to role-play complex situations including management of finances, communication skills, recreation planning, transportation, and household chores. The Social Skills Performance Assessment (SSPA) (Patterson et al., 2001b) assessed social and communication skills using one neutral and one confrontational role-play with the examiner. Participants are scored on domains such as fluency, clarity, affect, and social appropriateness. The Medication Management Ability Assessment (MMAA) (Patterson et al., 2002) measured the ability to independently manage medication using sample pill bottles and instructions. Finally, functional outcome was assessed by the Global Assessment of Functioning (GAF) rating (Frances et al., 1994). Higher scores indicate better functioning on the UPSA, SSPA, and GAF, and worse functioning (i.e., more errors) on the MMAA.

As noted in the original publication (Patterson et al., 2005), published measures in Spanish were used when available (i.e., PANSS (Kay et al., 1990), HAMD (Ramos-Brieva and Cordero-Villafafila, 1988), and DRS (Arnold et al., 1998)). The UPSA, SSPA, and MMMA were translated into Spanish and back-translated into English by staff members who were bilingual Mexican Americans; psychometric data on these translated measures will be outlined in a separate publication.

2.3. Data analyses

From the original 239 participants, three separate samples were selected. All 29 MSS participants were included to maximize the size of this sample; the remaining participants were then divided into English-speaking Latino ethnicity (ES-Latino) and English-speaking non-Latino ethnicity (ES-non-Latino) and matched on gender, DRS score, and mean antipsychotic dose in chlorpromazine equivalents (CPZE) Despite multiple attempts, statistically significant group differences remained on age, age of onset of psychosis, and education level; to have achieved group equivalence would have reduced the sample sizes too greatly. Therefore, these three variables were entered as covariates for all analyses. Univariate analysis of covariance was used to compare the three samples on clinical and functional variables.

3. Results

The demographic and clinical characteristics of the three groups are depicted in Table 1. By design, all participants in the MSS and ES-Latino groups were of Hispanic ethnicity; in the ES-non-Latino group, the majority of participants (65.5%) were Caucasian, followed by 17.2% African American, 6.9% Asian, 6.9% Native American, and 3.4% Native Hawaiian/Other Pacific Islander. The matching procedure ensured that there were no significant differences between groups in gender, DRS score, or mean CPZE dose. However, the ES-Latino group was younger than the ES-non-Latino group, the MSS group had less education than the other two groups, and the MSS group had an older age of onset of psychosis than the ES-non-Latino group.

Because the groups differed significantly on education, and because of the established relationship between education and

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