A Test of the Adequacy of Two Common Core Youth Measures with Latino Immigrant Youth

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Introduction

Scientific findings are only as good as the measures on which they are based. A primary criteria when selecting a good measure is its item reliability. Because cultural groups differ in the way they use language to express their personal values and everyday behaviors (Moran, Abramson, & Moran, 2014), it is essential to assess the reliability of a measure with the targeted cultural group before its use in the field to avoid the introduction of measurement error. This is of growing salience for the field of family science in the U.S. since approximately 88% of the projected population growth in the U.S. over the next 50 years will be due to immigrants and their offspring (Pew Research Center, 2015a).

Latino immigrants and their children are one of the fastest growing minority groups in the U.S. (Pew Research Center, 2015b), and are at heightened risk for multiple negative mental, emotional, and physical health outcomes (Capps, Fix, Ost, Reardon-Anderson, & Passel, 2004). Latinos accounted for more than 50% of the U.S. population growth from the years 2000 to 2011 (Pew Research Center, 2011), and will constitute 50% of the K-12 population by approximately 2050 (Fry & Gonzales, 2008). The vast majority of this growth has been due to immigration, and this trend that is expected to continue over the next five decades (Pew Research Center, 2015b). Despite their rapid growth in the U.S., there remains a significant lag in translating research into culturally sensitive treatment and prevention interventions that promote the emotional and behavioral health of Latino youth and their families (Kumpfer, Magalhães, Xie, & Kanse, 2015; Stein & Guzman, 2015; Szapocznik, et al., 2006). Essential to reducing this lag in the research are valid and reliable measures to adequately capture changes in attitudes and behaviors across time. The purpose of the current paper is to empirically test the measurement equivalence of two
frequently used psychosocial measures in the field of adolescent health for use among a recently immigrated Latino population.

**Adolescent Measures**

The field of adolescent study originated with a focus on the problematic development in adolescence (Hall 1904; Erikson 1968). However, a new orientation has emerged in 1990s that begins to recognize assets that can protect and promote positive adolescent development (Lerner et al., 2005; Benson, Scales et al. 2006). This new positive-valued perspective on adolescent development has important implications to both research and practice as it adds to our knowledge about different trajectories that individuals embark on during their development. For example, in the face of similar adversity (e.g., poverty or lack of educational opportunities), some adolescents develop delinquent behaviors such as substance use, risky sexual behaviors while others are resilient, thriving in multiple areas including academic achievement and social relationships. Understanding the mechanism that drives individuals towards a positive path thus becomes one of the major task forces in studying adolescent development. One framework that has been proposed out of this context is called Positive Youth Development (PYD) perspective (Damon, 2004; Lerner et al., 2005; Silbereisen & Lerner, 2007). PYD perspective places a great emphasis on the dynamic and interactive nature of individual and context, eschewing the idea of either genetic reductionism or environmental determinism. From this perspective, systematic changes can occur throughout human development as individuals are continuously influenced by the joint forces of biological person, ecological context (e.g., family, community, school) and historical period (Lerner et al., 2005). Five Cs (Competence, Confidence, Connection, Character, and Caring) have been identified in PYD framework as the key assets of healthy adolescent development (see Lerner et al., 2005 for a description of the definition of the five Cs). These five
Cs tap into adolescents’ assets from both individual and ecological spheres which aim to create a composite index that reflects the thriving level of adolescents. While competence and confidence are proposed to measure individual assets including personal values and behaviors, connection, character and caring are scales from an ecological domain that capture adolescents’ connections to people and involvement in community. The present study focuses on testing the psychometric properties of portions of two components of the five Cs model character and caring. These specific ecological domains of PYD are chosen because adolescents’ relationships with ecological settings will likely shape their development through the influences of cultural variations whereas individual assets may be universally similar in identifying some common characteristics of thriving adolescents (e.g., academic success as one of the individual assets is valued across different cultural or ethnic groups).

Relative to American individualistic culture, Latino culture is characterized by a strong emphasis on collectivism (i.e. group-oriented goals). The concepts of collectivism describe a cultural attitude that places higher importance on group goals than personal goals in a way that prioritizes duties and contributions to community and society over personal rights and benefits (Hofstede, 1982). Therefore, developing a strong tie with the community and maintaining a collectivistic orientation towards group-oriented goals become a developmental benchmark of Latino American youth in their acculturation process where individuals may differ in the degree of endorsement for the cultural values and beliefs from their country of origin. Because these differences in cultural orientation affect the view of self in relation to others, they also hold potential to confound the measurement of theoretical constructs in which the consideration of others is prominent. Furthermore, heterogeneity within the Latino population may also introduce substantial challenges to issues of measurement. For example, varying levels of acculturation to
U.S. society have been shown to moderate some outcomes among Latinos (Lueck & Wilson, 2011; Stein & Guzman, 2015), suggesting that immigrant youth may be special subpopulation within the larger Latino culture. As a result, how Latino immigrant youth might respond to items comprising scales that measure character and caring from Lerner’s five Cs model, may vary considerably from Caucasian, Black, and even more acculturated Latino youth.

The process of immigration provides a unique opportunity in understanding the impact of acculturation on the development of immigrant youth because on one hand it certainly brings in some stressors associated with acculturation such as loss of social support, language barriers, and racial discrimination (Reyes & Elias, 2011), it can on the other hand strengthen the self-identity of acculturating adolescents in a way that will promote their adaptation to the new culture. This suggests that a successful adaptation is not equivalent to a complete replacement of values and beliefs from original cultures with those from the host culture but rather a maintained balance between original culture and host culture from which immigrant adolescents can adopt new ideas and practices of the host culture while still retain valuable heritages of their original cultures (Freeberg & Stein, 1996). This concept of adaptational flexibility among immigrant populations was proposed in the bicultural model of acculturation (Ramirez, 1983) and although the degree of biculturalism is not the focus of this study, we argue that there is great potential for positive development of adolescents recently immigrated to the US. It is unfortunate that this area of research has largely been underexplored for Latino immigrant adolescents because most previous studies in this regard focused on the association between acculturation and negative developmental outcomes such as psychological problems, substance abuse, and delinquent behaviors (De La Rosa, 2002; Forster et al., 2013; Johnston, O’Malley, Miech, Bachman, & Schulenberg, 2015; Lorenzo-Blanco, Unger, Oshri, Baezconde-Garbanati, & Soto, 2011; Maurizi,
Ceballo, Epstein-Ngo, & Cortina, 2013; Schwartz, Unger, Zamboanga, & Szapocznik, 2010; Umaña-Taylor & Alfaro, 2009). The need to identify some positive assets of Latino culture that can promote the well-being of Latino immigrant youth thus becomes clear. From this perspective, the two components of the five Cs model character and caring included in this study serve the purpose of testing the construct adequacy of ecological assets that are salient to the positive development of Latino youth.

**Character–Social conscience**

Character deals with respect for the rules of society and culture, a set of standards for behavior, and a sense of morality and integrity (Phelps et al., 2009). Moreover, individuals with high levels of character also have a strong sense of morality and integrity. Character has emerged as an important scale of PYD and continues to show strength in predictive ability (Bowers et al., 2010). In the original five Cs model, Lerner et al. (2005) listed five subscales that together capture the concept of Character: personal values, social conscience, values diversity, interpersonal values and skills. As a subcomponent of the character scale, social conscience is primarily geared toward concerns about larger social issues of hunger and equality (e.g., helping other people), reflecting a tendency to pursue a common good. Compared with the other three dimensions, social conscience is more closely aligned with the group-orientation valued by Latino culture and therefore was selected for testing in the current study.

**Caring**

Caring is defined as a feeling of sympathy and empathy for the mishap or distress of others (Lerner et al., 2005), and is included in this study because of its close relationship with prosocial behaviors. For example, children and adults’ sympathy and personal distress resulting from exposure to the needs of others were associated with an increase in willingness to help.
(Eisenberg et al., 1989). Likewise, for Latino populations a sense of sympathy and empathy can be seen as a precursor of altruistic behaviors which require placing others’ needs before personal needs, an orientation advocated by the collectivistic nature of Latino culture.

The present study

The present study aims to test the psychometric properties of two common core measures of PYD for use among Latino immigrant youth. Although the empirical structure of the five Cs model has been established in previous studies (Bowers et al., 2010; Jelicic et al., 2007; Lerner et al., 2005; Phelps et al., 2009), data were collected mostly from general adolescent populations and may not hold for use with Latino immigrants. Due to the distinctive features of Latino culture and the characteristics of immigrant youth, specific scales of PYD may or may not be suitable to be used among Latino immigrant youth. The selection of the two measures in the present study is based on their close relevance to the core ecological asset (i.e. collectivism) identified as central to the Latino culture. The current study can adds to the literature by testing the temporal stability of these two measures as a way to assess their reliability and validity for use with Latino immigrant youth.

Method

Participants

Participants for the current study are part of the larger ¡Juntos Se Puede! [Together We Can!] project, an intervention designed to reduce adolescent high risk behaviors such as high school dropout and substance use among Latino immigrant youth. Data were collected from six middle schools across three states in communities that are not traditional destination points for Latino immigrants. Because the researchers assessing the effects of the intervention used an interrupted time series design, two baseline data points were collected approximately two to four
weeks apart from each other and before the intervention began. The sample used in this study consisted of 259 youth providing data at baseline-1 and 207 providing data at baseline-2. The mean age of the sample was 14.02 years with 46% being females and 73% living in the U.S. for less than 5 years. Most (80%) were of Mexican heritage. All data were collected using standardized instruments on Qualtrics.

Measures

The measures from this study were taken from the Positive Youth Development Student Questionnaire (PYD; Lerner, et al., 2005), a 77-item questionnaire that identifies essential attributes for positive development among youth who are 10 years and older. The psychometric properties of PYD have been established in previous studies (e.g., Bowers et al., 2010; Lerner et al., 2005; Phelps et al., 2009). The two subscales from the PYD included in this study were Social Conscience and Caring. Both use a response set ranging from 0 = not true to 4 = very true with higher scores indicating more of the construct.

Social Conscience (Bowers et. al., 2010) is a latent construct measured by 6 items that capture adolescent willingness to help others. An example of an item is “Giving time and money to make life better for other people.”

Caring (Bowers et. al., 2010) is a latent construct measured by 9 items that highlight adolescent care and compassion for people with hardship or at a disadvantage. An example of an item measuring caring is “When I see someone being taken advantage of, I want to help them.”

Another scale included in this study is the Youth Antisocial Behavior (YAB) measurement. YAB measures youth participation in delinquent acts and risky behavior and was adapted from the Drug Use Screening Inventory (Tarter & Hegedus, 1991) for use in research on non-clinical samples. Six items make up a latent construct (e.g., Have you intentionally damaged
another person’s belongings during the last year?) of which all had significant factor loadings above .4. Items are all yes/no responses (yes = 1) such that higher scores indicate higher levels of externalizing behavior. Internal consistency was measured using Kuder-Richardson (KR-20) for binary items and was acceptable (α = .80).

**Analytic strategy**

First, we ran multivariate normality tests in Stata 13 to check the normal distribution assumption of the two PYD scales. The normal distribution assumption was violated for both scales: Mardia Skewness and Kurtosis were 4.77 (p<.001) and 46.03 (p<.001) for social conscience, 3.03 (p<.001) and 33.14 (p<.001) for caring. Due to the non-normality of our data, we chose to use weighted least square estimation (WLSMV) to assess measurement invariance because WLSMV provides more robust and less biased estimations than maximum likelihood estimation when data are not normally distributed (Brown, 2006). Tests of invariance were conducted in Mplus 7, with missing data being handled by WLSMV method. First, we ran a factor analysis on the full sample to determine the general structure of the two scales. Next, we used a multi-group procedure to test for invariance across time from baseline-1 to baseline-2 (i.e., multiple group confirmatory factor analysis, Meredith, 1993).

Multiple group confirmatory factor analysis was conducted by testing configural and scalar invariance wherein the former was established by fitting the model without imposing any equality constraints (i.e., all factor loadings and threshold were freely estimated) and the latter was established by constraining all factor loadings and threshold to be equal across two time points. Configural invariance model was thus compared to the more constrained scalar
invariance model\textsuperscript{1} using a chi-square difference test and a non-significant result evidenced the favor of the more constrained model.

The following model fit indices were reported: comparative fit index (CFI), root mean square error approximation (RMSEA). A model with CFI of value .90 indicates a “good” fit to the data and one with .95 represents an “excellent” fit (Hu & Bentler, 1999). The criteria on RMSEA are .05 (or below) for a closer fit to the data, .08 for a fair fit and .10 for a marginal fit (Browne & Cudeck, 1993).

In the final step, we explored how antisocial behavior is related to social conscience, and caring. We first ran a confirmatory factor analysis on antisocial behavior and then a regression of it on the two PYD measures. The same model fit indices are reported along with the regression coefficients.

**Results**

As shown in Table 1, confirmatory factor analyses demonstrated adequate model fit for the factor structure of social conscience and caring from the full sample and also both configural and scalar models from the subsamples across time. Further test of invariance indicated the preference of scalar invariance model due to the non-significant chi-square difference test result. This suggests that both scales consistently measured the same construct (i.e., social conscience and caring) over time.

\textsuperscript{1} Only configural and scalar invariance were compared here because when indicators are ordered categories factor loadings and thresholds should be either freely estimated or constrained to be equal at the same time in multiple group analysis and thus disallows the test of metric invariance where only factor loadings are held to be equal (Muthén & Muthén, 2015, p. 485).
### Table 1. Measurement Invariance Summary Fit Statistics

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>CFI</th>
<th>RMSEA</th>
<th>DIFF TEST (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social conscience</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configural model</td>
<td>19</td>
<td>1</td>
<td>0.063</td>
<td></td>
</tr>
<tr>
<td>Scalar model</td>
<td>29</td>
<td>1</td>
<td>0.028</td>
<td>7.89 (.64)</td>
</tr>
<tr>
<td>Caring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configural model</td>
<td>11</td>
<td>0.996</td>
<td>0.055</td>
<td></td>
</tr>
<tr>
<td>Scalar model</td>
<td>19</td>
<td>0.995</td>
<td>0.047</td>
<td>12.41 (.13)</td>
</tr>
</tbody>
</table>

After establishing the invariance of the measurements, we went on to test the predictive validity of social conscience and caring by correlating them with the antisocial behavior scale. Before we ran the regression, however, we first tested the factor structure of antisocial behavior. The model had an excellent fit of the data (CFI=0.987, RMSEA= 0.046 [90%CI= 0.034, 0.058]).

Next, we used antisocial behavior to predict social conscience and caring. The regression model also fit the data well (CFI=0.973, RMSEA=0.056 [90%CI= 0.051, 0.061]) and antisocial behavior negatively predicted social conscience (B=-0.21, p<.01) but the prediction on caring was not significant.

**Discussion**

The current study tested the reliability and validity of two subscales from Lerner’s PYD Questionnaire, *Social Conscience* and *Caring*, for their use with a Latino immigrant population. Scalar invariance was established for both subscales, implying strong reliability. Regression analyses showed predictive validity for the social conscience subscale, but not for the caring subscale.

The measurement of PYD was originally designed to delineate the profile of competent students in general adolescent populations and therefore its adequacy had, heretofore, not been established for Latino immigrant youth. Given the rapid growth of Latino immigrant populations
in the US, there is a great need to document the behavioral and psychological health of Latino immigrant adolescents. For this to be accomplished it is imperative that culturally sensitive measurement that captures both the negative and positive developmental outcomes of Latino immigrant youth be developed and rigorously tested. The current study is a first step in this direction.

That strong measurement invariance was established in this study is probably because these two measures tap into the group-orientation characteristic of collectivistic cultures such as the Latino culture–both measures involve concern for others rather than oneself. However, the differences between the two in terms of predictive validity may be due to the nature of the two scales: social conscience underscores the actual actions that adolescents put into practice whereas caring is more indicative of emotions, feelings and attitudes towards others.

This study has several limitations. First, a limitation of this study may be the varied time interval between the assessments. Not all participants had the same time period between baseline-1 and baseline-2. To account for this we tested for time and found that is was not significant. A second limitation is that all data were provided by the youth on surveys, which introduces the possibility of a shared method bias. Future research could use teacher report of youth antisocial behavior to help attenuate this possibility. Finally, although data was collected in various communities across three states, it was not a representative sample of Latino immigrant youth. Because the majority of youth in the sample were of Mexican heritage, results may vary when a majority of youth are from a different national background.

Conclusion

Notwithstanding these limitations, this study adds to literature by providing evidence of the reliability and validity for two important and widely used PYD subscales among Latino
immigrant youth. As the immigrant population continues to grow in the United States, researchers need to test the psychometric values of their instruments to ensure the usefulness of their findings. The current study serves as an attempt to meet this need which highlights the importance of testing and developing culturally valid measures for immigrant populations.
References


