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An Examination of the Validity and Reliability of a Measure of Sexual Orientation Identity Exploration, Resolution, and Affirmation

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Abstract

The processes of identity exploration and resolution are salient during adolescence and young adulthood, and awareness of sexual orientation identity, in particular, is heightened in early adolescence. Much of the research on sexual orientation identity development has focused on identity milestones (e.g., age of awareness and disclosure) or internalized homonegativity, rather than the developmental processes of exploration and resolution. Psychometric properties of the Sexual Orientation Identity Development Scale, which was adapted from a developmentally-informed measure of ethnic-racial identity, were evaluated in a sample of 382 Latina/o sexual minority adolescents and young adults. Results supported the reliability and validity of the adapted measure, as well as measurement equivalence across language (Spanish and English) and development (adolescence and young adulthood).

Keywords

Sexual orientation; identity exploration; identity resolution; identity affirmation; confirmatory factor analysis

Figuring out the answers to the "Who am I?" questions of life is a central and normative developmental task of adolescence (Erikson, 1968) and young adulthood (Arnett, 2000). Framed by Eriksonian perspectives (Erikson, 1968), identity development includes the processes of identity exploration (i.e., a process of seeking information about one's identity) and identity resolution (i.e., level of commitment one has about the meaning of one's identity). Identity development is further conceptualized as multifaceted: youth identify and define themselves within several different social domains (e.g., ethnicity-race, sexual orientation; Tajfel & Turner, 1986; Umaña-Taylor, 2011). Given that awareness of sexual and romantic attractions heighten with pubertal development (i.e., around the age of 10, Herdt & McClintock, 2000), sexual orientation identity (SOI) development represents a key domain during adolescence, lasting into young adulthood and beyond. Although all youth (i.e., heterosexual and non-heterosexual youth) develop an awareness of their sexual identity

during adolescence (Worthington, Navarro, Savoy, & Hampton, 2008), identity processes are likely more salient for non-heterosexual youth because of societal heteronormative expectations that assume and privilege a heterosexual identity (e.g., Oswald, Blume, & Marks, 2005). Thus, the normative task of SOI development is potentially more challenging for youth who are not heterosexual (Mohr & Kendra, 2011). It is in this context that the present study aimed to create a reliable and valid measure to assess SOI development among adolescents and young adults who do not identify as heterosexual.

Research on SOI development among sexual minority youth (i.e., youth who identify as lesbian, gay, bisexual, queer, and questioning [LGBQ]) has largely focused on the timing and achievement of identity milestones (e.g., awareness of same-gender attractions, coming out to others; Floyd & Stein, 2002) and the positive or negative affect attributed to one's sexual orientation (e.g., internalized homonegativity; Mohr & Kendra, 2011), rather than the developmental processes of exploration or resolution of that identity. Studies applying Eriksonian perspectives (Erikson, 1968) and social identity theory (Tajfel & Turner, 1986) to other marginalized youth populations (e.g., youth of color; ethnic-racial identity [ERI] development) have found that the developmental processes of exploration and resolution are normative and salient (Umaña-Taylor et al., 2014), contribute positively to well-being (Rivas-Drake, Seaton, et al., 2014; Rivas-Drake, Syed, et al., 2014), and mitigate encountered minority-related stress (Romero & Roberts, 2003; Toomey, Umaña-Taylor, Updegraff, & Jahromi, 2013). Research on ERI has also considered ERI affirmation or private regard (i.e., the positive valuation of one's identity), which is also associated with well-being (e.g., Rivas-Drake, Seaton, et al., 2014; Rivas-Drake, Syed, et al., 2014), and is very similar to the work on internalized homonegativity among sexual minority populations. However, beyond understanding the link between internalized homonegativity and wellbeing, it is important to consider whether the developmental identity processes of exploration and resolution are associated with positive outcomes when the identity facet considered is sexual orientation, particularly given the well-documented disparities and minority stressors faced by LGBQ youth (Institutes of Medicine, 2011).

In addition to developing a measure of SOI exploration, resolution, and affirmation for adolescents and young adults, the current study also aimed to develop a measure that was available in both English and Spanish, given that the largest growing ethnic-racial group in the U.S. is Latinos (Ennis, Rios-Vargas, & Albert, 2011), and the majority of Latina/o youth living in the U.S. have at least one foreign-born, Spanish-speaking parent (Fry & Passel, 2009). Thus, we also aimed to develop a measure that had equivalent psychometric properties in English and Spanish in a sample of Latina/o-identified sexual minority youth.

Sexual Orientation Identity Development: Theories and Measures

Most theories of SOI development are formulated as stage-sequential models (e.g., Cass, 1996; Coleman, 1982; Troiden, 1988). These models typically begin with an individual who has become aware of their same-gender attractions and end with a synthesized version of the self where sexual orientation in just one characteristic among many that define the individual. Importantly, most of these models were derived from samples that focused solely on the experiences of White gay men (Diamond, 2005). Like most stage-sequential models

of development, these theories have been criticized (e.g., Diamond, 2005; Rosario, Schrimshaw, & Hunter, 2008), and research suggests that these models do not adequately explain or capture the experiences of many young people, including sexual minority youth of color, women, or bisexuals (e.g., Diamond, 2008; Dube & Savin-Williams, 1999; Rosario, Schrimshaw, Hunter, & Braun, 2006). These findings suggest the need to further interrogate current SOI developmental theories and the methods and measures used to understand these processes among young people.

Driven by these stage-sequential theories, much of the research on SOI development has focused on the timing and patterns of identity awareness and disclosure of identity to others (see Saewyc, 2011). Findings from this area suggest that contemporary youth are aware of their sexual orientation and disclose their sexual identities at younger ages compared to earlier cohorts (e.g., Floyd & Stein, 2002; Martos, Nezhad, & Meyer, 2015). Notably, the timing of SOI milestones does not appear to differ by ethnicity-race (e.g., Martos et al., 2015; Rosario, Schrimshaw, & Hunter, 2004); however, Latina/o and Black youth tend to disclose to fewer people than white youth (e.g., Martos et al., 2015; Rosario et al., 2004). In general, men tend to reach identity milestones earlier than women (e.g., Martos et al., 2015; Rosario et al., 2004), and men tend to engage in sex-centered identity exploration whereas women tend to focus on identity itself without sexual activity being central to that exploration (Savin-Williams & Diamond, 2000). Given these differences, it seems important to understand and measure the underlying processes and behaviors of exploration and resolution, rather than focus solely on the ages at which one was aware or disclosed their SOI to others. Recent research suggests that sexual identity may be fluid, meaning that attractions, behaviors, and identity may change over time (i.e., Diamond, 2008; Katz-Wise, 2015), indicating an even greater need to understand how to measure the extent to which a person is engaged in exploration or commitment to a SOI.

In addition to sexual identity milestones, several studies have also focused on the positive and negative affect attributed to one's sexual orientation. Most of these studies have either focused on internalized homonegativity (i.e., the degree to which an individual has internalized negative feelings about their sexual orientation; Mohr & Kendra, 2011) or positive affect toward one's SOI (e.g., Paul, Smith, Mohr, & Ross, 2014; Riggle, Mohr, Rostosky, Fingerhut, & Balsam, 2014). Positive affect toward one's identity (e.g., sometimes assessed as positive attitudes toward homosexuality in general) is associated with more positive health and well-being (e.g., Balsam & Mohr, 2007; Rosario, Schrimshaw, & Hunter, 2011; Wright & Perry, 2006), whereas internalized homonegativity is associated with a myriad of mental health problems (Newcomb & Mustanski, 2010). Importantly, a more nuanced multidimensional model of LGB identity development developed by Mohr and Kendra (2011), based on the earlier work of Mohr and Fassinger (2000), hypothesized six dimensions of LGB identity including internalized homonegativity, concealment motivation, acceptance concerns, identity uncertainty, identity superiority, and difficulty with identity. However, while these different dimensions of identity assess distinct affective domains related to one's identity, they do not assess the underlying processes of identity development.

In summary, existing measures of SOI do not capture processes of normative SOI development, including identity exploration and identity resolution. Among adolescent and young adult samples, however, a developmental approach that includes both exploration and resolution of the meaning of one's identity may better examine how identity is related to well-being. Measuring SOI in a way that captures these developmental processes is particularly important in order to better understand the normative process of SOI development, and how it may differ for young people from different backgrounds (e.g., ethnic-racial backgrounds; Moreira, Halkitis, & Kapadia, 2015). Further, assessing components of SOI development provides more targeted measurement that can identify how distinct components of the identity development process, as well as content, relate to young people's adjustment. This, in turn, will aid in the development of specific policies, programs, and preventative intervention practices. A developmentally-informed approach that has attended to these normative processes of identity is widely used in the study of youth of color (i.e., ethnic-racial identity formation; Umaña-Taylor et al., 2014), which is reviewed next.

Measures of Ethnic and Racial Identity Development

Ethnic-racial identity (ERI) refers to one's subjective sense of belonging to a particular ethnic or racial group (Phinney, 1990). Measures of ERI better capture the developmental processes of identity formation postulated by Erikson (1968) compared to those reviewed above that assess SOI development. In a recent review of literature, Umaña-Taylor and colleagues (2014) posited that the multidimensional construct of ERI includes both content (e.g. attitudes, affect, and beliefs about ERI) as well as underlying developmental processes (e.g. exploration and resolution). Whereas many of the identity measures used in the sexual orientation literature do assess content (i.e., affect), none of them explicitly assess process.

Two commonly used measures to assess ERI include the Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992) and the Ethnic Identity Scale (EIS; Umaña-Taylor, Yazedjian, & Bámaca-Gómez, 2004) / Brief Ethnic Identity Scale (EIS-B; Douglass & Umaña-Taylor, 2015a). Both of these scales assess an individual's exploration of and commitment to their ERI; however, important differences exist in how the scales are used in the literature. For example, the MEIM is frequently utilized as a unidimensional scale (i.e., spanning from low to high ERI) whereas the EIS and EIS-B are used in ways that captures the multidimensional nature of ERI (i.e., assessing exploration, resolution, and affirmation separately; Syed et al., 2013). Further, according to recent research by Syed and colleagues (2013), the MEIM and the EIS/EIS-B items that assess ERI exploration do so differently; the items of the MEIM measure ERI search (i.e., ambivalent activities that may signal successful attempts at identity exploration) whereas the EIS and EIS-B items assess ERI participation (i.e., active engagement where knowledge about one's ERI is learned). Further, the MEIM conflates aspects of identity development processes (commitment) and with beliefs and affective attitudes about one's ERI (content), whereas the EIS and EIS-B separates these into distinct components of ERI (i.e., resolution and affirmation) (Umaña-Taylor et al., 2004). The brief form of the EIS, the EIS-B, was used as the base from which to adapt a new Eriksonian-informed measure of SOI development because we believed it to be important to evaluate one's affective beliefs about their sexual identity distinctly from their resolution or

commitment to that sexual identity; that is, it is very possible that a person could have a resolved identity as LGBQ but also have high levels of internalized homonegativity and low levels of sexual identity affirmation. Prior research with Latina/o adolescents has found that that there are small to moderate positive correlations between affirmation and resolution, as well as between affirmation and exploration (Yetter & Foutch, 2013). Strong positive correlations have been found between exploration and resolution among Latina/o youth (Yetter & Foutch, 2013).

Importantly, robust associations exist between each of the particular components of ERI (i.e., exploration, resolution, and positive affect/affirmation) and youth adjustment, including psychosocial, academic, and health outcomes (Rivas-Drake, Seaton, et al., 2014; Rivas-Drake, Syed, et al., 2014). For Latina/o youth (including samples consisting of Mexicanorigin youth, and more diverse groupings of Latina/o ethnicities), ERI exploration and affirmation were positively associated with self-esteem and negatively associated with depressive symptoms (Rivas-Drake, Seaton, et al., 2014; Rivas-Drake, Syed, et al., 2014). In addition, for Latina/o samples, higher levels of ERI affirmation (also referred to in the literature as private regard) was correlated with lower intentions to smoke and engage in risky sexual behavior and higher levels of academic performance and school engagement (Rivas-Drake, Seaton, et al., 2014). Finally, other research has documented that ERI resolution is most important for mitigating encountered ethnic discrimination (e.g., Romero & Roberts, 2003; Toomey et al., 2013).

These differential associations between the three ERI components and well-being highlight the importance of a multidimensional conceptualization of sexual orientation that includes both process and content (Rivas-Drake, Seaton, et al., 2014; Rivas-Drake, Syed, et al., 2014; Umaña-Taylor et al., 2014). The measurement of SOI could be enhanced by capturing these normative processes of identity development. That is, an examination of these normative processes could illuminate developmental variation in SOI development and demonstrate how particular components of SOI correlate with youth psychosocial adjustment.

We acknowledge that the sociopolitical histories and contexts of ethnicity-race and sexual orientation are not analogous, and therefore the identity processes related to these identities may be distinct. For example, research demonstrates that family ethnic socialization is a key driver of ERI (e.g., Douglass & Umaña-Taylor, 2015b). Still, research has yet to examine the role of family in SOI development, and this process is undoubtedly different given the discordance between the sexual orientations of most parents and their sexual minority youth (as compared to the concordance of ethnicity-race between most parent-youth dyads). Further, while research on ERI has more rigorously examined the processes of identity development during early and middle childhood (Umaña-Taylor et al., 2014); we are not aware of any prospective study that has examined how children develop an understanding of their sexual orientation identities. It is well-established in the literature that young children are able to label their ethnicity and begin to have an understanding of what ethnicity means to them (Umaña-Taylor et al., 2014); however, the literature on sexual minority youth tends to show that young people are not labeling their identities until adolescence, when sexual orientation identity becomes more salient (Martos, Nezhad, & Meyer, 2015). Importantly, research on ERI documents that these identity processes become heightened during

adolescence (and increase across adolescence) because of the cognitive developmental advances during this developmental period and the increased salience of race-ethnicity during adolescence (Umaña-Taylor et al., 2014). Although the salience of sexuality is similar to ERI in adolescence, the labeling of identity is quite a different process between these identities. Thus, we do anticipate that some differences will exist between the trajectories and salience of these two distinct identity processes, particularly related *how* and *when* sexual identity exploration occurs and *when* resolution first begins to occur. Further, while exploration might not be as positively associated with affirmation among sexual minority youth as it is for youth of color, given that exploration of a marginalized sexual identity may result in emotional distress because of heightened internalized homonegativity (e.g., Meyer, 2003). Withstanding these key sociopolitical and contextual differences, we propose that the measurement used to assess ERI attends to the core Eriksonian (1968) constructs of exploration and resolution, and therefore should be adaptable to other social identities.

Current Study Aims

Framed by Eriksonian perspectives (Erikson, 1968), social identity theory (Tajfel & Turner, 1986), and prior work on ERI (Umaña-Taylor et al., 2014), we sought to establish a valid and reliable measure of SOI development that explicitly measured SOI exploration, resolution, and affirmation. Given that sexual orientation becomes salient in early adolescence and continues to be important throughout young adulthood, we also aimed to develop a measure that would assess these constructs equally across development. Finally, we aimed to develop a measure that would similarly assess these components of SOI across English and Spanish versions of the survey.

The current study uses a sample of Latina/o sexual minority youth. Notably, differences may exist in the sexual identity development process for Latina/o youth compared to youth of other ethnic-racial backgrounds because of cultural constructs related to family (e.g., familism; Wilson et al., 2010) and gender (e.g., machismo; Yon-Leau & Munoz-Laboy, 2010). Although it is beyond the scope of this study to examine the cultural antecedents of SOI development, future research is needed to understand how cultural contexts and adaptive processes influence developmental norms for intersectional identities.

Method

Procedure

This study's sample was derived from a project focusing on the family, school, and developmental experiences of Latina/o sexual minority youth. Inclusion criteria for participation in the study included that the young person (1) be between the ages of 14 and 24 years; (2) identify as lesbian, gay, bisexual, queer, transgender, or questioning, or with another non-heterosexual sexual identity or non-cisgender gender identity; (3) identify as Latina/o; and (4) live in the United States (including U.S. territories and military bases). In order to prevent unnecessary disclosure of minor participant's sexual orientation to their parents, a waiver of parental consent was granted by the institution's human subjects review

board. This procedure is consistent with current recommendations for conducting research with sexual minority youth (Mustanski, 2011).

Participants were recruited for the current study via social media outlets, including Facebook and Twitter. The Gay, Lesbian, and Straight Education Network (GLSEN) posted the recruitment messages on its main social media pages, and messages were also posted to targeted GLSEN chapter social media outlets (i.e., GLSEN chapters in localities with high proportions of Latina/o residents [i.e., Arizona, California, Nevada, Texas, Florida, and New York]. Recruitment messages were posted in both Spanish and English during a two week period that spanned from late October 2014 to early November 2014.

The survey was available in English and Spanish; most participants completed the English-version of the survey (n = 272, 71.2%) All measures that were not previously available in Spanish were translated from English into Spanish using a back-translation process (see Knight, Roosa, Calderon-Tena, & Gonzales, 2009). That is, initial translations were performed by a native Spanish-speaker, these translations were then back-translated into English by a trained Spanish translator, and the two English versions (the original English version and the back-translated English version) were then compared by a third individual. Only minor discrepancies were identified (e.g., conceptual versus literal translation) and were resolved by the two investigators. Participants were compensated for completing the survey with a \$10 Amazon.com electronic gift card. All study protocols were approved by the institution's human subjects review board and GLSEN's Research Ethics Review Committee.

Sample

The sample included 382 adolescents and emerging adults who identified as both Latina/odescent and as LGBQ. Participants ranged in age from 14 to 24 years (M= 20.26, SD= 2.619). Over half of the participants were currently enrolled in school (63.1%), and 21.3% of those participants were in high school while the remainder were enrolled in post-secondary schooling. Participants were geographically located in diverse regions across the United States (18% Northeast, 22% Midwest, 27.5% Southeast, 30.3% West, 0.3% Puerto Rico, and 1.8% U.S. military bases), and most lived in urban areas (70.7%; compared to 23.6% suburban locales and 5.2% rural locales).

In terms of ethnicity, most participants were of Mexican descent (67.3%), followed by Puerto Rican-descent (20.2%), Cuban- descent (4.2%), and other Latin American origins (7.9%; e.g., Columbian, Ecuadorian, Honduran); the majority of participants were born in the U.S. (94.8%). In terms of gender identity, most of the respondents were men (73.6%), 19.1% were women, and 7.1% were transgender or did not identify with the gender binary. The majority of participants identified as gay or lesbian (82.5%), 5.5% identified as bisexual, 11% identified with other same-sex sexual orientation labels (e.g., pansexual), and 1.0% identified as straight but reported same-sex attractions or behaviors.

Measures

SOI development—We adapted the Sexual Orientation Identity (SOI) Development Scale from the nine-item Brief Ethnic Identity Scale (EIS-B; Douglass & Umaña-Taylor, 2015a). Adaptations included changing the content of items to reflect sexual orientation rather than ethnicity (e.g., changing "ethnicity" to "sexual orientation"). The adapted scale includes the same three components of identity development and each component includes three items: exploration (e.g., "I have participated in activities that have taught me about my sexual orientation"), resolution (e.g., "I know what my sexual orientation means to me"), and affirmation (e.g., "I feel positively about my sexual orientation"). A panel of experts on sexual minority youth development as well as youth identity development reviewed the items to ensure that the adapted items had face validity. Items were rated on a four-point Likert-type scale ranging from 1 (Does not describe me at all) to 4 (Describes me very well). Higher scores indicate higher levels of SOI exploration, resolution, and affirmation. All items are provided in the Appendix.

Convergent validity measures—Internalized homonegativity and self-esteem measures were used to assess convergent validity of the SOI Development Scale. Internalized homonegativity was assessed using the three-item subscale of the Lesbian, Gay, and Bisexual Identity Scale (Mohr & Kendra, 2011). Participants rated the items (e.g., "If it were possible, I would choose to be straight") on a 6-point rating scale, ranging from strongly disagree to strongly agree. Items were averaged, with higher scores representing greater internalized homonegativity. Prior studies have provided evidence for the reliability and validity of this measure (e.g., Mohr & Kendra, 2011) and the Spanish version of the scale was previously developed (personal correspondence with Jessica Marialaura Vinces Guillén, 2014). Internal consistency was acceptable ($\alpha = .86$).

Self-esteem was assessed with Rosenberg's (1979) 10-item Self-Esteem Scale. All items were rated on a 4-point Likert scale to assess self-esteem in the past week, ranging from strongly disagree to strongly agree. This scale was previously translated into Spanish, and has been validated with Latina/o youth (Umaña-Taylor et al., 2004). Items were averaged, with higher scores indicating high self-esteem. Internal consistency was acceptable (α = . 72).

Results

Analytic Procedures

A four-step procedure was used to test the psychometric properties of the SOI Development Scale. All analyses were conducted in M*plus* version 7.3 (Muthén & Muthén, 2015). Step one involved examining the factor structure of the measure using the *a priori* three-factor structure developed to assess ERI development by Umaña-Taylor and colleagues (2004) via confirmatory factor analysis (CFA). In addition to examining the significance of the overall model chi-square statistic (i.e., a non-significant chi-square test suggests that the model-implied covariance matrix does not vary significantly from the observed covariance matrix), we examined two indicators of model fit including the comparative fit index (CFI) and the root-mean-square-error of approximation (RMSEA). CFI values that are equal to or larger

than .95 (.90) and RMSEA values that are equal to or less than .05 (.08) indicate that the model is considered good (or acceptable) (Kline, 2016; Little, 2013).

After an acceptable baseline measure was established, step two involved examining the invariance of the measurement model by language tested (English and Spanish) in multiple group CFAs. Measurement invariance is established through a series of three nested model comparisons, which examine whether the patterns of loadings are equivalent across groups, whether factorial invariance is attainable, and whether intercept invariance is attainable. A non-significant chi-square difference test suggests that the constraints are supported (Kline, 2016). Step three involved testing the invariance of the measurement, using the same method, by developmental age groupings (adolescence and emerging adulthood). Finally, step four involved examining the reliability and convergent validity (i.e., whether the measure was correlated in meaningful, theoretically-consistent ways with other measures) of the measure using previously established measures of internalized homonegativity (convergent) and self-esteem (convergent). We expected that SOI affirmation, exploration, and resolution would be positively correlated with self-esteem and negatively correlated with internalized homonegativity. Convergent validity was assessed using correlation coefficients in a structural model in Mplus. All analyses used full information maximum likelihood to account for missing data (Schlomer, Bauman, & Card, 2010).

Results from Confirmatory Factor Analysis (CFA)

The initial CFA using the *a priori* three-factor structure of identity development (i.e., exploration, resolution, and affirmation) based on Douglass and Umaña-Taylor's (2015a) EIS-B had poor model fit (χ 2 (df = 24) = 226.409, p < .001; RMSEA = .155 (90% CI: .137 - .174); CFI = .753). All of the factor loadings were significant and greater than $\lambda = .40$. Investigation of the modification indices revealed that significant additional variance in item 3 (affirmation subscale; "I feel positively about my sexual orientation") could be accounted for by a second factor, namely identity resolution. Although identity affirmation (i.e., information about the degree to which a person feels positively or negatively about their identity) and identity resolution (i.e., information about the degree to which one understands the meaning of their identity) are conceptually different constructs, this item contains verbiage that conflates resolution and affect (i.e., in order to understand whether an identity is positively or negatively valued, one would necessarily need to understand what that identity means to them). This item was removed from the model; however, resultant model fit was still not acceptable ($\chi 2$ (df = 18) = 101.296, p < .001; RMSEA = .115 (90% CI: .093 -.137); CFI = .871). Further investigation of the modification indices revealed that significant additional variance in item 2 (exploration subscale; "I have read books/ magazines/ newspapers or other material that have taught me about my sexual orientation.") could be accounted for by the other two factors in the model, resolution and affirmation subscales. Removal of this item resulted in better fit ($\chi 2$ (df = 13) = 38.005, p < .001; RMSEA = .074 (90% CI: .047 - .068); CFI = .956.

No additional complex indicators were suggested in the modification indices. Thus, the final measure had seven items (two affirmation, two exploration, and three resolution). Correlations, means, and standard deviations are shown in Table 1. In this final model, SOI

resolution and SOI affirmation were strongly correlated to one another, and SOI resolution and SOI exploration were also moderately associated to one another. A small negative association emerged between SOI exploration and SOI affirmation.

Language Invariance of SOI Measure

Tests of invariance were conducted to ensure that the measure assessed SOI development equally across the English (n = 256) and Spanish (n = 96) versions of the survey (see Table 2). For configural invariance, all items loaded at $\lambda > .40$ in both groups, and the model had acceptable fit: $\chi 2$ (df = 30) = 74.243, p < .001; RMSEA = .092 (90% CI: .066 – .118); CFI = .92. However, when factor loadings were constrained across groups to test for factorial invariance, the chi-square difference test was significant ($\chi 2$ (df = 2) = 11.437, p < .05). In order to determine which item(s) contributed to the measurement variance, we tested a series of sequential models whereby we constrained each factor loading individually. These tests revealed that item 6 ("I know what my sexual orientation means to me.") from the resolution subscale was not equivalent across language versions of the survey. The factor loading for participants who completed the survey in English ($\lambda = .462, p < .001$) was substantially smaller than the factor loading for participants who completed the survey in Spanish ($\lambda = .960, p < .001$). We proceeded with partial invariance, allowing the factor loading for item 6 to be freely estimated across groups. These results suggested that the data were consistent with a model reflecting partial invariance ($\chi 2$ (df = 1) = 2.135, p > .05): χ^2 (df = 31) = 76.378, p < .001; RMSEA = .091 (90% CI: .066 – .117); CFI = .918. The test of intercept invariance was not significant ($\chi 2$ (df = 2) = 4.294, p > .05), suggesting that the intercept-level measurement did not vary based on language.

Developmental Invariance of SOI Measure

Tests of invariance were also conducted to ensure that the measure assessed SOI development equally in adolescence (14 to 18 years) and emerging adulthood (19 to 24 years). The configural, factorial, and intercept invariance tests resulted in non-significant chi-square difference tests (see Table 2), suggesting that the measure equally measured SOI development during adolescence and young adulthood.

Reliability and Validity of the SOI Measure

To assess reliability, Cronbach's alpha was calculated for the resolution subscale, given that it contained three items, and Spearman-Brown coefficients were computed for the affirmation and exploration subscales given that they only contained two items each. All three subscales achieved levels of acceptable reliability (affirmation = .81; exploration = .61; resolution = .67). Tests of convergent validity revealed that the subscales operated in the expected direction (see Table 1). Specifically, SOI affirmation was negatively associated with internalized homonegativity and positively associated with self-esteem. SOI resolution was negatively associated with internalized homonegativity and positively associated with self-esteem. Finally, and contrary to our hypotheses about convergent validity, SOI exploration was not associated with internalized homonegativity or self-esteem.

Discussion

Theories about identity development suggest that it is a central, normative task of adolescence and young adulthood (Arnett, 2000; Erikson, 1968). Specifically, identity exploration and resolution are considered to be normative processes for adolescents and young adults, with specific processes occurring for identities related to social groups (Tajfel & Turner, 1986; Umaña-Taylor et al., 2014). Yet, to date, research on identity development among sexual minority young people had only considered the timing of identity milestones and the affective components of identity development (e.g., internalized homonegativity), rather than the explicit developmental process of exploration and resolution. Thus, the results from this study fill a void in the literature by specifying the structure, reliability, and validity of the SOI Development Scale as a measure of the exploration, resolution, and affirmation of SOI development during adolescence and young adulthood. Further, given that prior research has identified that other minority identity processes (e.g., ERI) act as buffers of encountered minority stress (e.g., Romero & Roberts, 2003; Toomey et al., 2013), this new measure allows future research to identify whether the SOI development processes of exploration and resolution, as well as affirmation of one's identity, operates in a similar protective way for sexual minority youth.

Psychometric Properties of the SOI Development Scale

Overall, findings indicated that the seven-item, three component measure demonstrated strong internal consistency and validity, and measurement equivalence across developmental period (adolescence and young adulthood) was established. Only partial measurement equivalence was established across language of survey (English and Spanish). Given that a large proportion of Latina/o individuals in the U.S. speak Spanish as their primary language (Ennis et al., 2011), the establishment of measurement equivalence across language for newly developed and established measures is critical. Future work (e.g., focus groups) with this scale will be necessary in order to fully understand why differences emerged by language with the resolution item, "I know what my sexual orientation means to me." Further, given that the sample size of participants who took the survey in Spanish was considerably smaller than the sample who took the survey in English, it is important for future studies to replicate the language invariance of this new measure. Finally, future studies with larger and more diverse samples should explore CFA replication with all nine items.

Notably, the correlations among the subscales were similar to those found with Latina/o youth using the EIS. That is, there were moderate to strong positive correlations between resolution and exploration and affirmation, respectively. These results suggest that the Eriksonian processes of SOI exploration and resolution are not substantially different from the processes of ERI development (Yetter & Foutch, 2013). Of note, the correlation between SOI resolution and affirmation was higher in this study compared to the small to moderate effect sizes (r= .08 to .30) that have been documented among Latina/o populations with ERI, suggesting that perhaps sexual identity resolution is more closely tied to a positive valuation of one's sexual identity. The correlation between SOI affirmation and exploration in this study was small in nature and negative, which is substantially different than what has

been found among Latina/o youth with the EIS (i.e., correlations tend to be small and positive; Yetter & Foutch, 2013). This difference points to key differences in the affective experiences related to exploration of one's sexual orientation compared to ERI. It may be the case, for example, although one might hypothesize that young people who are exploring their sexuality may also be experiencing higher levels of internalized homonegativity during this period, we did not find a significant relationship between exploration and internalized homonegativity. Yet, this finding warrants future longitudinal research to understand why exploration was negatively associated with affirmation of sexual identity.

In terms of construct validity, we found that SOI resolution and affirmation were both positively associated with self-esteem and negatively correlated with internalized homonegativity. SOI exploration, however, was not associated with self-esteem or internalized homonegativity. Consistent with some research on ERI, because our sample largely consistent of older adolescents and young adults, resolution and affirmation of identity may be more salient for adjustment compared to exploration, which may be more salient in early adolescence (e.g., Brittian, Umaña-Taylor, & Derlan, 2013). Thus, it will be important for future studies to investigate the salience of SOI exploration, resolution, and affirmation at varying development times (e.g., early adolescence compared to middle adolescence).

Taken together, these findings provide initial support for the construct validity of the SOI Development Scale. These results have important implications for the field, given that this measure can be used to identify and examine interpersonal and contextual predictors of SOI development components. Additionally, researchers can examine how these different components of SOI development are associated with psychosocial outcomes throughout adolescence and young adulthood. If found to be salient in promoting adjustment or mitigating minority stress, SOI development components could be included in targeted intervention programs to boost well-being among LGBQ youth.

Limitations and Future Directions

Although our study had numerous strengths (e.g., focus on a normative developmental task among an understudied population of sexual minority youth; inclusion of native and nonnative English speakers), it is important to discuss the limitations of the research. First, our study examined the experiences of Latina/o youth broadly, rather than focusing on specific subpopulations that fall under the Latina/o umbrella. Given that prior research has identified important subgroup differences among Latina/o individuals (e.g., Delgado, Ettekal, Simpkins, & Schaefer, 2015), future research should examine the reliability and validity of the measure within subgroups of Latina/o youth and for non-Latina/o identified youth (e.g., white youth, Black youth). Yet, given that Latina/o youth are the fastest growing populations of young people in the U.S. (Ennis et al., 2011), our focus on this population is warranted.

Second, the majority of our sample were men, limiting our availability to test and understand whether the measure was equivalent across gender identity. Given that the extant literature suggests that identity milestones differ by gender (e.g., Diamond, 2005), it will be important for future research to replicate this study with a focus on examining whether the psychometric properties are equivalent across gender (e.g., men, women, transgender

persons). This is particularly true given that sexual fluidity, particularly related to sexual identification, has been found to exist more often in samples of women compared to men (e.g., Katz-Wise, 2015), and men are more likely to reach sexual identity milestones earlier than women (e.g., Martos et al., 2015). Thus, a longitudinal design measuring these sexual identity developmental processes of exploration, resolution, and affirmation would be critical to test whether differences in measurement equivalence across time and mean-level differences in experiences exist by gender. Third, our sample was recruited online and was geographically diverse; thus, we are unable to discuss how greater contextual forces (e.g., school policies; Poteat & Russell, 2013) might constrain or afford opportunities to explore and resolve one's sexual identity during adolescence and young adulthood.

Despite these limitations, the current study contributes a new measure to the field that can be used in research to assess sexual minority youths' levels of identity exploration, resolution, and affirmation related to their sexual orientation. Beyond examining whether this measure works similarly for other ethnic-racial or gender subgroups, it is also important for research to identify whether these dimensions of SOI buffer minority stressors, similar to what has been found in the ERI literature (e.g., Rivas-Drake, Seaton, et al., 2014; Romero & Roberts, 2003; Toomey et al., 2013). Further, given that youth often hold intersecting social group identities (e.g., a young person may be Black and gay and male), it is important for future research to examine whether and how multiple identities co-develop during adolescence and young adulthood, and whether they synergistically serve as promotive or protective mechanisms of well-being.

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Appendix

Sexual Orientation Identity Development Scale

	Does not describe me at all / Nome describe en absoluto	Describes me a little / Me describe un poco	Describes me well / Me describe bien	Describes me very well / Me describe muy bien
1. I have attended events that have helped me learn about my sexual orientation, such as gay-straight alliance meetings or events at a lesbian, gay, bisexual, and transgender (LGBT) community center. / He asistido a eventos que me han ayudado a aprender más acerca de mi orientación sexual. Por ejemplo, he asistido al club de estudiantes GSA (Gay-Straight Alliance/ Alianza Gay-Heterosexual) en mi escuela ó a eventos en el centro comunitario LGBT.	1	2	3	4
2. I have read books/ magazines/ newspapers or other material that have taught me about my sexual orientation. / He leído libros/ revistas/periódicos u otros	1	2	3	4

	Does not describe me at all / Nome describe en absoluto	Describes me a little / Me describe un poco	Describes me well / Me describe bien	Describes me very well / Me describe muy bien
materiales que me han enseñado acerca de mi orientación sexual.				
3. I feel positively about my sexual orientation. / <i>Tengo sentimientos positivos sobre mi orientación sexual.</i>	1	2	3	4
4. I wish I were of a different sexual orientation. / Quisiera ser de otra orientación sexual.	1	2	3	4
5. I understand how I feel about my sexual orientation. / <i>Entiendo cómo me</i> siento acerca de mi orientación sexual.	1	2	3	4
6. I know what my sexual orientation means to me. / Sé lo que mi orientación sexual significa para mí.	1	2	3	4
7. I have participated in activities that have taught me about my sexual orientation. / He participado en actividades que me han ayudado a aprender				
información sobre mi orientación sexual.	1	2	3	4
8. I dislike my sexual orientation. / No me gusta mi orientación sexual.	1	2	3	4
9. I have a clear sense of what my sexual orientation means to me. / Tengo un sentido claro de lo que significa mi orientación sexual para mí.	1	2	3	4

Note. Instructions for the participants stated: "The United States is made up of people who have different sexual orientations. Sexual orientation refers to one's romantic and sexual attractions to other people. Some examples of the sexual orientations that people may identify with include gay, lesbian, straight or heterosexual, bisexual, or queer. Using the rating scale provided, please chose the option that you believe best describes how you feel." / "En los Estados Unidos hay personas con diferentes tipos de orientaciones sexuales. La orientación sexual es un aspecto de identidad que se refiere a las atracciones románticas y sexuales que cada uno tenemos hacia otras personas. Algunos ejemplos de orientaciones sexuales incluyen gay, lesbiana, heterosexual, bisexual, ó queer. En las preguntas que siguen, escoge la opción que te describe a tí." Items 2 and 3 were removed during psychometric testing (bolded items remained in the questionnaire). Items 4 and 8 need to be reverse coded for use in analyses. The exploration subscale includes items 1 and 7. The resolution subscale includes items 5, 6, and 9. The affirmation subscale includes items 4 and 8. Other researchers may use the scale without contacting the authors; however, we do request that researchers please send reports (unpublished and published) that use this scale to the first author.

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Table 1

Latent Correlations among Sexual Orientation Identity Development (SOID) Components and Measures of Convergent Validity

	1	2	3	4	S	9
1. SOID affirmation	1					
2. SOID resolution	.57 ***	!				
3. SOID exploration	17*	.33 ***	!			
4. Self-esteem	.40	.39***	.01	ŀ		
5. Internalized homonegativity	93	47	.05	39***		
6. Age	49	27	.08	12	.41	
Mean	Mean 2.56	2.94	2.82	2.82 2.56	3.47	20.26
Standard Deviation 0.89	0.89	0.55	0.67	0.67 0.41	1.13	2.62

* p < .05.

** p < .01.

p < .01.

Table 2

Measurement Equivalence of the Sexual Orientation Identity Development Scale by Survey Language (English vs. Spanish) and Across Developmental Periods (Adolescence vs. Young Adulthood)

Model	χ^2	χ^2 df	ď	χ^2 (df) P	<u>a</u>	CFI	CFI Constraint Tenable
P.	articipan	t Lan	guage (J	Participant Language (English vs. Spanish)	Spanish)		
Configural Invariance 74.24 30 < .05	74.24	30	< .05	1	1	.92	1
Loading Invariance	76.39 31	31	< .05	< .05 2.14 (1)	>.05	.92	Yes
Intercept Invariance	80.67	33	< .05	80.67 33 < .05 4.29 (2)	> .05	.91	Yes
Developn	nental Pe	riod (Adolesc	Developmental Period (Adolescence vs. Young Adulthood)	ung Adul	thood)	
Configural Invariance 64.51 30 > .05	64.51	30	> .05	ŀ	1	.92	1
Loading Invariance	69.27	32		> .05 4.76 (2)	>.05	.92	Yes
Intercept Invariance	74.77	34	> .05	74.77 34 > .05 5.50 (2)	> .05	.91	Yes

Note. The configural invariance model places no constraints across the different groups. Loading invariance constrains the factor loadings across groups to be equal. Intercept invariance constrains the intercept means to be equal across groups (described in depth by Little, Card, Slegers, & Ledford, 2007).