



Published in final edited form as:

J Mens Stud. 2024 October ; 32(3): 421–449. doi:10.1177/10608265241234361.

Multiple Dimensions of Machismo: Linguistic Considerations for Latino Sexual Minority Men in the United States

Gabriel Robles, PhD, LCSW¹, Trey V. Dellucci, PhD², Javier Garcia-Perez, PhD, MSW³, Tyrel J. Starks, PhD⁴

¹School of Social Work, Rutgers University, New Brunswick, NJ 08901, USA

²Adolescent Behavioral Health Research Program, Indiana University School of Medicine, Indianapolis, IN 46202, USA

³School of Social Policy & Practice, University of Pennsylvania, Philadelphia, PA 19104, USA

⁴Department of Psychology, Hunter College of the City University of New York, New York, NY 10016, USA

Abstract

The literature differentiates between two domains of machismo: traditional machismo and caballerismo. Research has largely focused on measuring machismo among English speakers. We evaluated whether Estrada's (2011) 2-factor model of machismo was invariant across languages (English versus a direct Spanish translation). A series of multigroup confirmatory factor analyses were conducted between respondents who completed the survey in English ($n = 428$) and Spanish ($n = 102$). Analyses suggested the hypothesized 2-factor model did not fit across language groups. While the traditional 2-factor structure emerged in the English language data, exploratory factor analysis indicated a 3-factor structure of machismo among Spanish-speaking respondents. One of the new factors (inherent machismo), among Spanish-speaking respondents, was associated with Internalized Heterosexism, suggesting that the new factor structure may capture the belief that masculine men are superior. These findings suggest there is a need for the development of culturally appropriate Spanish language assessment.

Keywords

Hegemony; cross-cultural measurement; psychometric properties; gender norms

Latino sexual minority men (SMM) are subject to discrimination and heterosexism from general society and from within Latino communities (e.g., Brooks, Etzel, Hinojos, Henry, & Perez, 2005; Díaz, Peterson, & Choi, 2008; Swendeman, Rotheram-Borus, Comulada, Weiss, & Ramos, 2006). As a result, Latino SMM experience health inequities across

Contact: Gabriel Robles, PhD, LCSW, Assistant Professor of Social Work, Rutgers University, 390 George Street – 8FL, New Brunswick, NJ 08901.

Disclosure statement.

The authors report no conflicts of interest.

Ethical statement

Ethical approval for this project was given by the City University of New York (Protocol 2018-1094).

multiple domains. In examining inequities, psychological research has often focused on Latino cultural beliefs, including beliefs about masculinity, and how they contribute to the decision-making of Latino SMM. These beliefs are well-established correlates of heavy drinking (Perrotte, Zamboanga, & Kearns, 2019), sexual health (E. V. Wallace, 2011), and help-seeking behaviors more broadly (Hunter, Fernandez, Lacy-Martinez, Dunne-Sosa, & Coe, 2007; Sobralske, 2006). Many of these studies utilized the Modified Machismo for Gay Latino Men scale to assess masculinity. This commonly used measure was developed, and its factor structure was derived, utilizing an English-speaking sample of Latino SMM in the United States (Estrada, et al 2011).

There is an urgent need to extend research on Latino SMM to Spanish-speaking participants. Data on Spanish-speaking U.S.-based Latino SMM is notably missing from the quantitative literature on machismo, among other sectors. With the increasing attention to cultural values, more research is needed on *Spanish-speaking* Latino SMM with the understanding that language is central for ethnic minority groups (Mejía, 2016). For example, a recent HIV-related study found that the risk profiles of Spanish-speaking Latino SMM are notably different than English-speaking Latino SMM (Lee et al., 2021). One solution to the challenge of conducting Spanish language research with Latino SMM would be to directly translate existing English measures. While potentially efficient, there is ample evidence to suggest the possibility that the language of administration might impact the validity and factor structure of established measures, as language is an established proxy for acculturation (Alegria, 2009; Levison et al., 2017).

The goal of the current study is to examine whether the factor structure of the established English-language Machismo for Gay Latino Men scale demonstrates measurement invariance following direct Spanish-language translation. This research therefore occurs in the context of the large body of existing research on machismo among Latino men generally and Latino SMM specifically. It is also informed by research on the impact of language on cognitive and emotional functioning.

Conceptualizing Machismo

Machismo is a multidimensional concept that requires further interrogation. Guiding our understanding of machismo is the concept of hegemonic masculinity. Hegemonic masculinity refers to “the normative ideology that to be a man is to be dominant in society...this specific masculinity works to position men in a space of power” (Smith et al., 2015, pp. 2–3). Furthermore, to demonstrate hegemonic masculinity “men are expected to adhere to a strict set of prescribed masculine gender roles that work to promote male dominance” (Smith et al., 2015, p. 3). Hegemonic masculinity allows us to situate contextual and societal-level-identified ideologies and values. Additionally, hegemonic masculinity is often conflated with toxic masculinity, hypermasculinity, and machismo. Therefore, further definition is required.

Toxic masculinity.

Researchers have identified toxic masculinity as a component of machismo. Furthermore, toxic masculinity has become a framework for popular and scholarly understandings of the

gender factor in social problems (Waling 2019). At the trait level, toxic masculinity refers to the specific aggressive behaviors that are used to practice masculinity that have resulted in the oppression of other men, women, and trans and gender-diverse people (Harrington, 2021; Waling, 2019). Toxic masculinity is believed to be described by aggressive and predatory behavior resulting in sexual and domestic violence committed by men (Bhana, 2012) and the suppression of emotions, including same-gender sexual desires (Waling, 2019). Therefore, toxic masculinity is often used as a common term when horrific acts are committed by men (Harrington, 2021).

Hypermasculinity.

Like toxic masculinity, hypermasculinity is often associated with machismo. Hypermasculinity is defined as “an inclination to engage in exaggerated sex-typed performances [and] is realized by enacting manhood as physicality” (Mosher, 1991, p. 200). Furthermore, when hypermasculinity is enacted, it consists of manly actions embodying personalities toward “toughness, daring, virility, and violence” (Mosher, 1991, p. 200). Therefore, the “macho man displays his aggression, courage, callous sexuality, and cool self-control to demonstrate...he [is] hypermasculine” (Mosher, 1991, p. 200).

Machismo.

The attitudes, beliefs, and behaviors associated with masculine identity have been widely studied among Latino men under the construct of machismo. Machismo—which roughly translates to manliness from Spanish to English—is a concept associated with a set of attitudes and values linked with masculinity (Sobral, 2006). Similar to masculinity—defined by Thompson and Bennett (2015) as expectations that reflect the gender construct—machismo is viewed as a set of ideologies and constructs that dictate Latino/Latin American male behavior. Sobral (2006) identified the following characteristics associated with the traditional cultural conceptualization of Latino men; “strong, virile, intelligent, and wise...they are expected to exhibit valor, dignity, self-confidence” (p. 348). However, within popular literature, the term machismo has been associated with negative characteristics of sexism, chauvinism, and hypermasculinity and is often associated with violence and heavy drinking (Arciniega, Anderson, Tovar-Blank, & Tracey, 2008). Mirande (1988) found in their survey of Latino men that 52% described machismo as a negative construct, 12% a neutral concept, and 35% described it as a source of pride. The results of their study highlight the inconsistent understanding of machismo among Latino men, and more importantly the unaddressed positive aspects of Latino male behavior.

Unsurprisingly, research on Latino masculinity—also referred to as machismo—is continuously associated with negative and contradictory characteristics (Sáenz, Bukoski, Lu, & Rodriguez, 2013). However, when similar masculine characteristics are applied to White/European men, those characteristics are often associated positively. As a result, Latino men receive conflicting messages about masculinity (Sáenz, Bukoski, Lu, & Rodriguez, 2013). Therefore, it is no surprise the concept of machismo is complex. More specifically, Urrabazo (1985) clarifies that machismo is a complex phenomenon and therefore machismo varies within men’s identities and their own views.

Researchers contend that machismo ideologies are properties of particular times, places, and groups, not specific individuals, per se (Thompson & Bennett, 2015). In that regard, machismo denotes a strong sense of masculine pride among Latino men (Sáenz, Bukoski, Lu, & Rodriguez, 2013). This sense of pride facilitates the belief that men should exhibit masculinity with the goal of governing others. One prominent line of research in the study of machismo among Latino cisgender heterosexual men and queer Latino men is that of Estrada et al. (2011) and Arciniega et al. (2008). This work argues that two subdomains of machismo exist, *traditional machismo* and *caballerismo* (Arciniega, Anderson, Tovar-Blank, & Tracey, 2008; Estrada, Rigali-Oiler, Arciniega, & Tracey, 2011). Generally, traditional machismo refers to the dominant position in the community that Latino men hold, which is consistent with the permissible subordination of other genders, traditionally women. This definition is also consistent with the popular culture use of the term machismo. Caballerismo, on the other hand, refers to the deference and civility that men display towards their family and community members that are considered to be gentlemen-like behaviors. More specifically, caballerismo is a code of masculine chivalry often signifying a “Spanish gentleman with proper, respectful manners, living by an ethical code” (Arciniega et al., 2008, p. 20). Additionally, caballerismo can be described as “nurturing, family-centered, and chivalrous” (Arciniega et al., 2008, p. 29).

Machismo among Latino SMM

Unlike heterosexual Latino men, machismo among Latino SMM has been widely neglected in research. Despite progress made in understanding machismo little has been done to incorporate sexual identity, sexual behavior, and diverse sampling into scientific research (Estrada et al., 2011). However, the conceptual understanding of machismo comes with the implicit understanding that one needs to be heterosexual or heterosexual-passing (Perez, Santamaria, & Operario, 2018). Therefore, existing work with Latino SMM has highlighted associations between traditional machismo and increased alcohol consumption as well as positioning during anal sex among Latino SMM. With respect to the latter, greater levels of masculinity are associated with being the insertive partner (Carballo-Diequez et al., 2004; Rhodes et al., 2014; Surace, Levitt, & Horne, 2017). More specifically, the receiving role is associated with femininity, submission, and inferiority, and is seen as less of a man (Carballo-Diequez et al., 2004). While the insertive partner carries less stigma and is often associated with masculinity, dominance, power, and control (Carballo-Diequez et al., 2004).

Traditional machismo has consistently been observed to correlate positively with internalized heterosexism. Heterosexism refers to an ideological system that operates on the individual, institutional, and cultural levels to stigmatize any non-heterosexual way of being (Szymanski, Kashubeck-West, & Meyer, 2008). The academic literature argues heterosexism and internalized heterosexism are more appropriate terms versus homophobia and internalized homophobia. Homophobia and internalized homophobia refer to the “irrational fear of being in close contact with an LGB person and internalized homophobia describes LGB persons’ own self-loathing being a sexual minority person” (Szymanski et al., 2008, p. 511). Furthermore, the concern with homosexuality was not the LGB community but the intolerant heterosexual person and homophobia is a consequence of the enforcement of traditional male gender norms (Szymanski et al., 2008). Therefore,

internalized heterosexism is an accurate term because it allows for a broader range of negative attitudes towards sexual minoritized individuals in the social, cultural, and political context and accurately shifts the focus away from the LGB community towards the intolerance by heterosexual persons (Kulick et al., 2017). This association is not only well-established, but it has also played a critical role in the development of machismo measurement. Estrada et al. (2011) found that the Modified Machismo for Gay Latino Men scale was correlated with internalized heterosexism and found that it was not correlated with the number of sexual risk events (e.g., safer sex practices and sex while under the influence of alcohol and drugs). This association makes sense because internalized heterosexism highlights the role that gender plays in the oppression of sexual minorities and potentially underlies the relationship between sexism and heterosexism (Szymanski, Kashubeck-West, & Meyer, 2008). This is important as same-gender attractions and sexual behaviors are considered violations of traditional masculine compartments (e.g., Estrada et al., 2011; Murgo, Huynh, Lee, & Chrisler, 2017; Perez et al., 2018).

Language and the assessment of machismo

Scholars have acknowledged that the contemporary definition of masculinity may be overly rigid and thus not generalizable to men in multiple cultural contexts (Messerschmidt, 2012; Roberts, 2013). For this reason, contemporary examinations seek to more precisely recognize subdimensions of masculinity (Smith, Parrott, Swartout, & Tharp, 2015). In their recent review of masculinity measurement studies, Thompson and Bennett (2015) pointed out that most extant measures of masculinity (and machismo) are derived using data from English-speaking university students. This introduces multiple forms of sampling bias by restricting the representation of non-college students, restricting age representation, and precluding examinations of the impact of language of administration (Thompson & Bennett, 2015). Estrada et al. (2011), acknowledged that in the U.S., measures of [queer] machismo have largely been tested in samples of Latino SMM using English-language measures in their paper introducing Modified Machismo for Gay Latino Men scale. To date, it is not known if the two subdimensions defined by Estrada et al. (2011) and Arciniega et al. (2008) are a relic of the integration of language samples and if the two subdimensions still exist (i.e., *traditional machismo* and *caballerismo*) when stratifying by the language of the Latino participants.

Research has identified language as an important aspect of cultural understanding and often represents a core value for ethnic minority groups. Specifically, because the language “influences the way we behave and how we perceive things [which] means that culture is also inherent in the language itself” (Welch & Welch, 2008, p. 341). Mejia (2016) identified core values as values that form the most fundamental aspects of a group’s culture. These aspects of group culture are associated and representative of the group’s membership (Mejia, 2016). The theory of core values argues that for some ethnic groups, language is strongly centered. Therefore, their existence as a distinct culture is dependent on the maintenance and development of their specific language (Mejia, 2016). Consequently, it is important to consider the community’s core values and attitudes toward the use of their native language (Mejia, 2016).

The reliance on English-language assessment is problematic for a number of reasons. First, English-only research excludes Latino SMM who communicate primarily in Spanish. Latino SMM who largely communicate in Spanish with community members, including romantic partners, tend to have a significant cultural overlap such as similar customs, similar religious upbringing, and importantly, similar values around family, relationships, and community (Beougher, Gomez, & Hoff, 2011). Second, reliance on English-language research potentially contributes to the illusion that Latino SMM are a homogenous group and overlooks the importance of cultural variability and linguistic context. Previous research has identified that preferred language may be more important than examining ethnicity itself (Alegria, 2009; DuBard & Gizlice, 2008; Folsom et al., 2007), because language differences may be relevant to differences in cultural beliefs and particular aspects of *Latinidad* (general experiences of being Latino), such as machismo among Latino SMM.

One potential solution to the need for Spanish-language assessment measures is to directly translate existing English language. This solution is appealing because it is arguably more time and cost-efficient than engaging in an extensive measurement development process. The use of translated measures however is predicated on the assumption that the factor structure – an element of validity – is invariant across the language of administration. Research on internal linguistic processing and its associated cognitive/affectual responses suggests that invariance should be evaluated empirically and not assumed a priori. Native speakers (of any language) tend to exhibit greater biases in reading and speaking in their native language whereby the words or phrases may elicit psychological processes that introduce more context or personal experiences into meanings (Ponari et al., 2015). Bilingual or language learners often derive meaning using semantic reasoning otherwise known as understating the meanings of the words as intended by the writer (Pavlenko, 2012). The differences in internal linguistic processing among linguistically diverse people may provide evidence that language may be inextricably linked to cultural belief systems.

Thus, the goal of the current research was not to develop a new measure, but to evaluate the invariance of the factor structure of the existing measure, Machismo for Gay Latino Men scale (Estrada et al., 2011), by comparing responses obtained from administration of the established English language version with a direct Spanish translation. We hypothesized that the established two-factor structure (i.e., traditional machismo, caballerismo) would be invariant across the language of administration. In addition, to replicate the original construct validity test found in Estrada et al. (2011), we examined the association between the dimensions of machismo with internalized heterosexism. We hypothesized that traditional machismo, but not caballerismo, would be associated with increased internalized heterosexism among both English and Spanish respondents.

Methods

Participants

Table 1 includes a summary of the study demographics. Of the 530 Latino SMM, 428 completed the survey in English, and 102 completed the survey in Spanish. The average age of the total sample was 31.25 years old ($SD = 6.82$). The majority of the sample had less than a 4-year college degree (63.4%) and earned less than \$30,000 per year (62.6%).

Regarding race, 63.2% of the Latino SMM identify as White, followed by multiracial or another race not listed (25.1%), Black/Afro-Latino (8.1%), and Indigenous (3.5%). Latino SMM were diverse in their region of residence with, 37.4% living in the West, 26.2% in the Northeast, 10.8% in the Midwest, and 1.5% living in Puerto Rico. Two participants (0.4%) had missing data for their region of residence.

Procedures

Data were collected between August 2019 to November 2019 as part of a larger study examining Latino cultural values and their impact on sexual health and relationship functioning. Latino SMM were recruited using both English and Spanish advertisements on social media platforms (e.g., Facebook) and a geo-location-based dating application. In order to participate, individuals needed to be 18 years of age or older; reside in the United States (the 50 states, Washington DC, and Puerto Rico); be a cisgender man; be in a romantic relationship with another cisgender man who was at least 18-years old; identify as Hispanic or Latino; and be able to read in English or Spanish.

English and Spanish advertisements on social media platforms and a geo-location-based dating application. Men clicked the advertisements to be routed to the very brief screener, upon which potential participants were asked if they wanted to continue in English and Spanish. Eligible men then completed an online consent form in either English or Spanish, followed by an online survey (in either English or Spanish) that included measures of cultural values, internalized heterosexism, and demographics. After participating in the survey, index partners were asked to recruit their main partner by forwarding an email (with both English and Spanish text) that provided an explanation of the study and contained a unique survey link. The full sample enrolled in the *Estoy Contigo* study includes 720 Latino SMM that comprise two subsamples (Robles et al., 2022). Specifically, the study recruited a total of 625 index participants, with 95 index partners who recruited their main partner, creating a dyadic sample comprised of 190 individuals ($n = 95$ couples), and an additional sample of 530 index partners who did not recruit their main partner into the study. The current study utilizes data only from these 530 individual index participants.

The measures in the current study were forward and backward translated (Chen & Boore, 2010) by two investigators—one with Puerto Rican and one with Mexican background—who were fluent in both English and Spanish. One researcher translated the measure into Spanish and the other researcher translated it back into English based on the Spanish translation. The team then discussed the differences in the original English, Spanish, and newly back-translated English. Attention was paid to lexicon and grammar to ensure greater readability across ethnic Latino subgroups. We observed no missing data given that the survey was programmed in which all responses were required.

Measures

Demographics.—Participants reported their age, education, income, HIV status, and birthplace (i.e. mainland-born, island born). Participants reported their sexual orientation identity using a single item—“Do you consider yourself to be”—with response options that included: “heterosexual or straight,” “gay,” “bisexual,” or “queer.” Bisexual and queer

were collapsed together given a low endorsement. Finally, participants reported their city of residence, which we used to create a variable identifying their region of residence based on the U.S. Census.

Traditional cultural values of masculinity.—Cultural values related to masculinity were assessed using the Modified Machismo for Gay Latino Men scale. Previous studies have identified two subscales: traditional machismo and caballerismo (Arciniega et al., 2008; Estrada et al., 2011). The subscale is composed of ten and 11 items, respectively. Participants are instructed to respond to statements such as “It is important not to be the weakest man in a group” (traditional machismo) and “Men should be affectionate with their children” (caballerismo) using a 7-point scale (1 = strongly disagree, 7 = strongly agree). Both traditional machismo ($\alpha = .84$) and caballerismo ($\alpha = .71$) were found to have good internal reliability in the original study (Arciniega et al., 2008). Because two of the original items assumed that respondents were heterosexual, in the present study they were changed to be more relevant to men in same-sex relationships: “Masculine men are superior to effeminate men” and “The bills (electric, phone, etc.) should be paid for by the most masculine man in a relationship.” Scores for each subscale are averaged, with higher scores indicating higher levels of Traditional Machismo, Caballerismo, and the new subscale described in the Results. Each subscale has a possible range of 1 to 7. Cronbach’s alphas for the 2-factor structure and alternative factor structure are provided in the Results.

Internalized heterosexism.—Internalized beliefs and values about sexual identity was assessed using the Short Internalized Homonegativity Scale (Currie, Cunningham, & Findlay, 2004), which consists of 13 items. Participants are instructed to respond to statements such as “I often feel intimidated while at gay venues” and “It is important to me to control who knows about my homosexuality” using a 7-point rating scale (1 = strongly disagree, 7 = strongly agree). Scores were averaged, and higher scores indicated higher levels of internalized heterosexism with a possible range of 1 to 7. The scale demonstrated good reliability in the current study ($\alpha = 0.72$ in English, $\alpha = 0.75$ in Spanish).

Analytic Plan

Analyses were conducted in SPSS Version 25 and MPlus 8. First, a series of χ^2 test of independence and t-tests were conducted to examine if there were demographic differences between groups who completed the survey in English versus Spanish. Subsequently, a series of multi-group confirmatory factor analyses (MGCFAs) were conducted to determine if the two-factor structure for the Modified Machismo for Gay Latino Men scale observed in prior research (Arciniega et al., 2008; Estrada et al., 2011) was replicated among Latino SMM who completed the scale in English ($n = 428$) or Spanish ($n = 102$). The MCCFA was conducted in incremental steps following procedures outlined by Campbell, Barry, Joe, and Finney (2008). In a preliminary step, the fit of the hypothesized two-factor model was evaluated in the English and Spanish samples independently. This step establishes the computational viability of the hypothesized model in both subsamples and initial evaluations of fit for each subsample independently and in the absence of constraints.

Subsequent invariance testing proceeded in three steps. First, a configural model was estimated by allowing all parameter coefficients to be freely estimated across both the English and Spanish groups. This allowed us to assess whether or not items measure the same latent constructs across language groups. Second, a metric model was calculated in which constraints to the factor loadings across both groups were equal. Finally, a scalar model was calculated in which constraints to the factor loadings and the item thresholds across both groups were equal. This sequence of model testing stops when the application of constraints indicates a statistically significant decrease in model fit. For example, when a configural model yielded poor fit, this suggests that the progressive addition of model constraints is not scientifically justified (Bialosiewicz, Murphy, & Berry, 2013). At each step during model testing, the fit was evaluated through multiple indices and corresponding thresholds. We examined the standardized root mean square residual (SRMR; to be less than .08), root mean square error of approximation (RMSEA; to be less than .08), and the χ^2 p-value to be greater than .05 (Xu & Tracey, 2017).

In response to the results of MGCFA, we conducted two post-hoc exploratory factor analyses (EFA) to identify an alternative factor structure. The EFA utilized maximum likelihood extraction and oblimin (i.e., oblique) rotation with Delta normalization. Both the scree plot and the ratio of eigenvalues determined the number of factors with a threshold of 0.40 of a meaningful factor loading using procures outlined by Yong and Pearce (2013) sensitivity analyses were conducted by removing and reingratiating items. A parallel principal component analysis was then run to confirm the factor structures identified in the EFA using the methods outlined in O'Connor (2000). After identifying the factor structures, the individual items were then averaged together within their corresponding factor, and internal consistency for each subscale was evaluated by computing Cronbach's α .

Finally, to replicate the original construct validity test (Estrada et al., 2011), we examined the association between dimensions of machismo with internalized heterosexism. Specifically, predictive validity was evaluated by examining the associations of Modified Machismo for Gay Latino Men factors – identified in the EFA – with internalized heterosexism. Two separate regression analyses were conducted for English respondents and Spanish respondents in SPSS. Regression analyses controlled for age, education, income, race, sexual orientation, U.S. region of residence, and nationality. Both race and U.S. region of residence were dummy coded for analyses, with “White” and “Northeast” used as referent groups respectively. These covariates were selected based on the previous research yielding associations with internalized heterosexism among SMM and Latino SMM alike (e.g., Berg, Munthe-Kaas, & Ross, 2016; Diaz et al., 2020; Rhodes et al., 2013)

Results

Latino SMM differed on several demographic factors across the English and Spanish surveys (See Table 1). Latino SMM who completed the survey in Spanish were more likely to have been born outside of the United States mainland, while those who completed the survey in English were more likely to be born in the mainland United States. In terms of effect sizes, income as well as race had a small effect on survey language, while region had a small to medium effect. Latino SMM who completed the survey in Spanish were less likely

to earn \$30,000 or more a year compared to those who completed the survey in English. Black/Afro-Latinos, those residing in the South and Puerto Rico, and non-US-born Latinos were more likely to complete the survey in Spanish. In contrast, Latino SMM who identified another race not listed, those residing in the West, and US-born Latinos were more likely to complete the survey in English. Latino SMM did not differ in education or age.

Invariance of a Two-factor Model

Table 2 displays the model fit indices for the sequence of models tested to evaluate measurement invariance. As expected, the traditional two-factor model provided a good fit to data from English-speaking respondents. Contrary to our hypotheses, the Spanish subsample model did not meet thresholds for a good fitting model using the original two-factor model.

Results of the configural model, which allowed the parameter estimates to freely load, indicated that model fit was significantly diminished even under the most modest constraints of invariance (see Table 2). This finding renders the subsequent application of constraints in the metric and scalar models of limited utility. The addition of these constraints could only further diminish model fit.

Given the absence of evidence for configural invariance, exploratory factor analysis (EFA) was utilized to identify the factor structure underlying the observed data (See supplemental table). All the research on machismo to date has assumed a two-factor structure, and there was no theoretical rationale for the a priori selection of an alternative factor structure.

Post-Hoc Examination of New Factor Structure

Table 3 includes a summary of the EFA results. Eigenvalues suggested that the two-factor model was appropriate for the sample of 428 Latino SMM who completed the survey in English. The first factor's eigenvalue (6.61) was 1.11 times greater than the second factor, and the second factor's eigenvalue (5.92) was 6.43 times greater than the third. The third factor's eigenvalue was lower than 1, which suggests a flattening of the scree line after the second factor. These results are consistent with the parallel principal component analysis, which found that the eigenvalue for the second factor in the EFA (5.92) was greater than the randomly generated second factor eigenvalue (1.42). In contrast, the eigenvalue for the third factor of the EFA (0.92) was lower than the randomly generated third factor eigenvalue (1.35), suggesting that a two-factor model best fits the data. All of the caballerismo items loaded onto one factor above a threshold of 0.40, and below the threshold of the other factor (Guadagnoli & Velicer, 1988; Yong & Pearce, 2013). Similarly, all of the traditional machismo items loaded onto one factor above the threshold, and below on the other factor.

The scree plot and eigenvalues suggested that a three-factor model was appropriate for the sample of 102 Latino SMM who completed the survey in Spanish. The first factor's eigenvalue (8.03) was 1.39 times greater than the second factor; the second factor's eigenvalue (5.78) was 4.55 times greater than the third factor, and the third factor's eigenvalue (1.27) was 1.63 times greater than the fourth factor. The fourth eigenvalue was lower than 1 suggesting a flattening of the scree line after the third factor. These results are consistent with the parallel principal component analysis which found that the eigenvalue for the third factor in the EFA (1.27) was greater than the randomly generated third

factor eigenvalue (1.02). In contrast, the eigen value for the fourth factor of the EFA (0.78) was lower than the randomly generated third factor eigenvalue (0.88), suggesting that a three-factor model best fits the data. All of the *caballerismo* items loaded onto one factor above a threshold of 0.40, and below the threshold on the other two factors. In contrast to the overall and English survey samples, the 11 traditional *machismo* items loaded across two unique factors. Six items (1, 2, 3, 4, and 21) describing, what the authorship team named, inherent superiority in masculinity loaded onto one factor above the threshold of 0.40, and five items (5, 6, 7, 9, and 10) describing strength and power [in interpersonal relationships] loaded onto a third factor, what the authorship team named, relational *machismo*. It should be noted that one item, “It would be shameful for a man to cry in front of his children” (item 8), loaded onto both “inherent superiority” and “relational” factors. Upon examining item 8 for face validity, the item appears to be theoretically congruent with other items describing inherent superiority. We have opted not to remove the item entirely given that the goal of the research was to evaluate the psychometric properties of an existing translated version of the scale – which has implications for future research.

Examination of Reliability

Good internal consistency was found for both the *caballerismo* ($\alpha = 0.94$) and traditional *machismo* ($\alpha = 0.91$) subscales within the sample of 530 Latino SMM and within the sample of 428 Latino SMM who completed the survey in English (*caballerismo* $\alpha = 0.93$, traditional *machismo* $\alpha = 0.91$). Internal consistency was examined for both the traditional two-factor structure utilized in the literature and the three-factor structure identified in the current study among the 102 Latino SMM who completed the survey in Spanish. There was good internal consistency across the two-factor structure including both the traditional *machismo* ($\alpha = 0.92$) *caballerismo* factors ($\alpha = 0.96$). There was also good internal consistency among the two new factors identified in the current study’s three-factor model including inherent superiority ($\alpha = 0.89$) and relational ($\alpha = 0.90$).

Examination of Predictive Validity

Pearson’s *r* correlations were used to examine the bivariate associations between cultural values and internalized heterosexism separately for the sample of 428 Latino SMM who completed the survey in English and the sample of 102 Latino SMM who completed the survey in Spanish. Traditional *machismo* was positively correlated with internalized heterosexism ($r = .42, p < .001$) among the sample of English respondents. In contrast, *caballerismo* was not associated with internalized heterosexism ($r = -.03, p = .49$). Similarly, *caballerismo* was not associated with traditional *machismo* ($r = -.01, p = .82$). Among the sample of Spanish respondents, both inherent *machismo* ($r = .30, p = .003$) and relational *machismo* ($r = .19, p = .049$) were positively associated with internalized heterosexism. Similarly, *caballerismo* was positively associated with relational *machismo* ($r = .26, p = .007$), but not inherent *machismo* ($r = .07, p = .51$) or internalized heterosexism ($r = -.15, p = .14$).

Table 4 includes the summary of two independent linear regression models, which examined the predictive validity of the factor structures identified from the Modified *Machismo for Gay Latino Men* scale among English and Spanish respondents, respectively. Specifically,

the subscales found in the current study were entered as predictors of internalized heterosexism.

An independent linear regression model examined the sample of 428 Latino SMM who completed the survey in English. The model utilized the traditional two-factor structure identified in the original studies (Arciniega et al., 2008; Estrada et al., 2011). Consistent with our hypothesis, machismo was positively associated with internalized heterosexism; however, caballerismo was not significantly associated with internalized heterosexism. With respect to covariates, both age and having at least a four-year bachelor's degree were negatively associated with internalized heterosexism. Similarly, identifying as gay, as opposed to bisexual or queer, was associated with lower internalized heterosexism. No other covariates were associated with internalized heterosexism.

An independent linear regression model was calculated among the sample of 102 Latino SMM who completed the survey in Spanish. The model utilized the three factors identified in the current study as predictors of internalized heterosexism. Given that a new factor structure emerged for Spanish respondents, there were no a priori hypotheses about the associations between cultural values of masculinity and internalized heterosexism. The current study found that caballerismo was negatively associated with internalized heterosexism, while the value in masculine superiority was positively associated with internalized heterosexism. Value in a more relational form of machismo was not significantly associated with internalized heterosexism. With respect to covariates, living in the South and Puerto Rico (compared to the Northeast) was associated with greater internalized heterosexism. No other covariates were significantly associated with internalized heterosexism.

Discussion

Contrary to initial hypotheses, the results of this study indicated that the factor structure of the Machismo for Gay Men scale varied across the language of administration. The factor structure for Latino SMM completing the survey in English resembled the two-factor structure of machismo and caballerismo found in the previous literature (Arciniega et al., 2008; Estrada et al., 2011). In contrast, a new three-factor structure was found among Spanish-language respondents. Specifically, the traditional machismo subscale was broken into two distinct dimensions of machismo: (1) a set of items that map on to what is considered inherent superiority, and (2) a set of items that is more relational in nature. These factor structures subsequently demonstrated a differential ability to predict the related construct of internalized heterosexism, with only inherent machismo being associated with internalized heterosexism even after adjusting for socio-demographic factors.

This observed variability in factor structure calls into question whether English-language studies of these constructs accurately represent the experiences of Latino SMM who prefer to communicate in Spanish. The sample composition of the current study suggests a number of plausible factors that might contribute to the unique factor structure of Spanish-language responses. Latino SMM who completed the survey in Spanish were more likely than English-language respondents to have been born outside of the United States mainland.

This may facilitate the ability to adhere to U.S. mainstream normative cultural beliefs among English and Bilingual individuals (Lovelace & Wheeler, 2006; Weisskirch et al., 2011). Conversely, this means that Spanish language respondents were more likely to experience at least some period of direct immersion in cultures outside the US. This exposure may shape gender norms and perceptions even in instances of high acculturation. Although the differences in machismo scores between English and Spanish respondents do not necessarily indicate differential levels in acculturation, they may indicate a greater social cohesion to their respective co-ethnic communities in which contextual influences on acculturation may be present (Lopez-Class, Castro, & Ramirez, 2011; P. M. Wallace, Pomery, Latimer, Martinez, & Salovey, 2010).

In the three-factor structure, there appears to be a diverging domain of inherent superiority and relational machismo. The sense of inherent superiority within traditional machismo among this sample of Latino SMM may capture what is traditionally seen as hostile sexism in the greater literature on sexism (Glick & Fiske, 1996; Glick et al., 2000). Hostile sexism describes the attitudes that justify men's power by expressing that men are dominant over or inherently superior to other genders (Hammond, Milojev, Huang, & Sibley, 2018). This classification situates cisgender men at a higher social status than other genders (Cowie, Greaves, & Sibley, 2019). Accordingly, gay men benefit from sexism as they exist within a context in which social attitudes in which men who are presumed to be cisgender and heterosexual are placed at higher social statuses (Blumell & Rodriguez, 2020). In the context of Latino SMM, a plethora of research suggesting that sexual minority men who exhibit behaviors and characteristics that are consistent with femininity face more psychological distress than men who exhibit behaviors and characteristics consistent with traditional masculinity (Diaz, Ayala, & Bein, 2004; Sandfort, Melendez, & Diaz, 2007; Sun et al., 2016). This factor appears to address the adherence to the belief that men (i.e., masculine men) are inherently superior to anyone not deemed masculine. For sexual minority men specifically, gender studies scholars have maintained that queer men tend to perpetuate sexist beliefs that originate within the general male culture (Cowie et al., 2019). Thus, it is likely that the mechanism that perpetuates sexist beliefs from the broader male culture is similar among Latino SMM.

Relational machismo, the third factor structure emerging from the Spanish-speaking sample, captures the belief that men not only need to possess physical and emotional strength, but also the implicit understanding that these characteristics are in some way meant to protect the self, the partner, and the family more broadly, thus allowing for the permissible oppressive behaviors of men (Liang, Salcedo, & Miller, 2011; Santiago-Rivera, 2003). The concept of a relational form of machismo is found in the existing literature on the different typologies of sexism (Hammond et al., 2018; Masser & Abrams, 1999). For example, benevolent sexism, although generally applied to the dynamics between heterosexual men and women, describes stereotypically sexist attitudes toward women (e.g., It is important for women to be beautiful.) and the idea that men must maintain strength and power in relationships with others (Glick & Fiske, 1996; Hammond et al., 2018; Masser & Abrams, 1999). Yet, this form of sexism is distinct in that these attitudes generally possess a subjectively positive in feeling tone toward women (Masser & Abrams, 1999). Further, this relational stance (e.g., with the goal of obtaining strength and power) may allow for

masculine-presenting men to retain their inherent social status while at the same time respecting women and other “less masculine” men who assume feminine-gendered roles in sexual positioning and the allocation of household duties (Blumell & Rodriguez, 2020). Given that these factors emerged from the Spanish-speaking sample, it provides potential insight into the gender dynamics that play out in Latin America and how they, if at all, shift when residing in the U.S.

In addition to offering insight into the gender dynamics, the Spanish-speaking sample provides a rationale for Spanish-specific measures. The understanding that language is a fundamental aspect of a group’s culture, and this group cultural understanding is associated with group membership, offers key insights (Mejia, 2016). In a clinical setting with Spanish-speaking individuals, Santiago-Rivera (1995) noted emotional expression was more authentic and less inhibited in the client’s native language and was more defensive in their second language. Additionally, Santiago-Rivera (1995) emphasized when a client was able to verbalize personal experiences in their native language, they were able to access important memories but also communicate strong emotions that had been repressed when speaking in English. Ultimately, allowing individuals to utilize their native language while communicating and disclosing information may be beneficial and allow for a depth of understanding and engagement that would otherwise be missed (Santiago-Rivera, 1995).

In examining the predictive utility of both the existing and new Spanish language factor structure, aspects of machismo are associated with internalized heterosexism across both the English and Spanish respondents. Consistent with the previous literature (e.g., Estrada et al., 2011; Murgo et al., 2017; Perez et al., 2018), traditional machismo was associated with greater internalized heterosexism among the English correspondents. This association is in line with the relationship between hypermasculinity and heterosexism in samples of straight/heterosexual men (Diefendorf & Bridges, 2020).

Among the Spanish respondents, inherent superiority and not the more relational form of machismo, was associated with greater internalized heterosexism. Together, these findings suggest that the men who completed the survey may hold more nuanced views of masculinity, such as being superior to femininity, that are associated with the internalized beliefs of one’s own sexual identity. Caballerismo, was not associated with internalized heterosexism among both the English and Spanish respondents, which is consistent with the existing literature (e.g., Estrada et al., 2011), pointing to its utility across diverse Latino men regardless of language. This was expected given that caballerismo is characterized as the deference and civility that men display towards their family and community members are considered to be gentlemen-like behaviors (Rivera, Brady, & Blashill, 2020). Thus, the cultural belief of caballerismo may potentially operate similarly to sexual minority and heterosexual men.

Regarding covariates, both age and education were negatively associated with internalized heterosexism among English correspondents but not among Spanish correspondents. This may point to the effects of intersectionality. For example, emerging and younger adults may be experiencing intersectional stress related to but not limited to ethnic, sexual, and masculine identities, which may implicate developmental periods in early adulthood.

Among Spanish correspondents, living in Puerto Rico and those living in the South were associated with greater internalized heterosexism. It is possible that these individuals may be surrounded by specific communities that value aspects of hypermasculinity that may increase internalized heterosexism. Similarly, these two regions also hold conservative social and political structures against same-gender relationships in general (Croff, Hubach, Currin, & Frederick, 2017; Rodríguez-Díaz et al., 2016). More studies are needed to determine a more nuanced understanding of individual-level beliefs in the context of oppressive socio-political settings (Rodríguez-Díaz et al., 2016).

Practical Implications

These findings suggest that providers and advocates may need to revisit the concept of traditional machismo and consider the possibility that at least some sub-components of this construct may be more adaptive than others among Latino SMM. For example, psychological services that would be “culturally affirming” or “masculinity affirming” may benefit from expanding and modifying their conceptualization to distinguish between potential prosocial vs. negative manifestations of masculinity. Practitioners should contextualize therapeutic practices within a larger social-cultural framework. This is particularly important given that linguistic context may point to relational forms of machismo (or otherwise benevolent sexism), which may be rooted in Latino men’s social position in the United States among both sexual minorities and those with heterosexual identities.

Regardless of linguistic dominance or preference, Latino SMM should be encouraged to view machismo as a positive cultural function that encourages a man to protect his family and his health out of respect for himself and his family (Meyer & Champion, 2010) – which is in line with the Latino cultural belief of familismo (Abreu, Gonzalez, Capielo Rosario, Domenech-Rodriguez, & Pulice-Farrow, 2020). Further, intervention researchers may consider the integration of relational machismo-related ideas in programming and leverage them to develop studies that uplift Latino same-gender couples, families, and communities.

Limitations

The findings presented here should be contextualized with specific considerations for limitations. The sample may be biased in that the recruitment method (social media and geo-location-based dating apps users) may not be representative of the broader Latino SMM population. The data were drawn from a larger study that recruited men who were in relationships. It is possible that single men may have a different factor structure in addition to a varying level of internalized heterosexism. Further, the MGCFA used a variable indicating the language in which the survey was completed. In addition to statistical power considerations, the limited sample size did not allow for the further stratification of language administration and linguistic ability (e.g., Monolingual English, English but Bilingual, Spanish but bilingual, and monolingual Spanish), in addition to the retesting of the factor structure among a distinct Spanish speaking sample. Relatedly, the current study used a sample that is smaller than a “common rule of thumb” ($n = 200$) for factor analyses (Kyriazos, 2018). However, given that this study was not conducted within the context of

primary measurement development, reduced sample sizes ($n = 100$) may not necessarily invalidate the results (Kyriazos, 2018). Consequently, more research is needed to examine and replicate these findings with larger samples of Spanish-dominant Latino SMM.

The current research sought to evaluate the invariance of the factor structure of the existing measure, and not to develop a new measure. As a result, item 8 of the scale could be thought to be related to both inherent and relational aspects of machismo in Spanish-speaking communities. Thus, future research should evaluate the utility of item 8 using qualitative methods to contextualize how, if at all, this item fits into the conceptualization of machismo at the individual and community levels. Additionally, the development of a new scale or the refining of the current scale may warrant the employment of traditional methods such as cognitive interviewing in Spanish to critically evaluate the content validity of the measure at the item level (Schein, Bauer, Bastos, & Poteat, 2021).

The sample also consisted of men who were targeted for research programming that was advertised for gay, bisexual, queer, or “Latino men who have sex with other men.” Thus, the participants in this study may hold a level of comfort with these identifying terms. Similarly, the study did not assess for “outness”, and it is possible that the predictive results of internalized heterosexism are not generalizable across all levels of outness. The current study did not examine machismo differences based on a person’s self-identification. It is unknown if the new factor structure may change based on Latino SMM self-identification (gay, bisexual, queer, straight, etc.). The current study did not formally assess acculturation. We did, however, conduct follow-up analyses in which we included the length of time participants have been living in the U.S. Time living in the U.S. was not significant and did not change the overall results. Nevertheless, more robust measures of acculturation may elucidate mechanisms at play. Finally, the current study took a quantitative approach to translating an existing English measure into Spanish and validating it on a sample of Spanish-speaking Latino SMM living in the United States. While these methods are standard in cross-cultural research (Behr, 2017; Choi, Kushner, Mill, & Lai, 2012), it is possible that the current measure does not fully capture the cross-cultural values of masculinity.

Conclusion and Future Directions

Despite these limitations, this paper presents the first evidence that dominant conceptualizations of masculinity applied to the study of Latino SMM may fail to capture nuances in this cultural value that emerge when the assessment is conducted in Spanish. These findings point to the utility of bilingual assessment options and disaggregated analyses to fully explicate linguistic and cultural variability in studies of Latino SMM. This is important given that the Latino population as a whole is diverse.

In examining machismo, especially in marginalized groups, it is important to note the history of oppression that may contribute to the formation of identities and behaviors. Historically, the comportments of Latino men are associated with toxic masculinity without consideration for socio-structural mechanisms possibly linked to the development of machismo in the United States. Despite belonging to a systematically privileged gender group, Latino men are not automatically shielded from inequity in educational, economic,

or oppressive experiences (Patrón & Garcia, 2016), yet these are in contrast to the social expectations of being a breadwinner or caregiver (Valdez, Garcia, Ruiz, Oren, & Carvajal, 2018). Consequently, the examination of the social context in which any form of machismo continues to form may provide some insight into the everyday stressors of U.S.-based Latino men.

Further, future research should examine language dominance and survey completion particularly given the linguistically heterogeneous context in which U.S.-based Latino people live including language spoken with family, friends, and healthcare settings. Subsequent studies should attend to within-group differences in Latino populations with attention to examining the effect of acculturation or acculturative stress. As Latino people continue to be a large population experiencing inequity, attempts that close the health gaps by addressing the unique needs of both English and Spanish language-dominant Latinos may help us better understand the health and intersectional nature of the lives of diverse Latino SMM.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Funding details.

This work was supported by a Research Supplements to Promote Diversity in Health-Related Research through the U.S. National Institute on Drug Abuse under Grant R01DA045613-01S1.

Data availability statement.

Due to the nature of this research, participants of this study did not agree for their data to be shared publicly, so supporting data is not available.

References

- Abreu RL, Gonzalez KA, Capielo Rosario C, Domenech-Rodriguez M, & Pulice-Farrow L (2020). "Latinos Have a Stronger Attachment to the Family": Latino Fathers' Acceptance of Their Sexual Minority Children. *Journal of GLBT Family Studies*, 16(2), 192–210. 10.1080/1550428X.2019.1672232.
- Alegria M. (2009). The challenge of acculturation measures: What are we missing? A commentary on Thomson & Hoffman-Goetz. *Social Science & Medicine*, 69(7), 996–998. 10.1016/j.socscimed.2009.07.006. [PubMed: 19664868]
- Arciniega GM, Anderson TC, Tovar-Blank ZG, & Tracey TJG (2008). Toward a fuller conception of machismo: Development of a traditional machismo and caballerismo scale. *Journal of Counseling Psychology*, 55(1), 19–33. doi:10.1037/0022-0167.55.1.19
- Behr D. (2017). Assessing the use of back translation: The shortcomings of back translation as a quality testing method. *International Journal of Social Research Methodology*, 20(6), 573–584. 10.1080/13645579.2016.1252188.
- Beougher SC, Gomez W, & Hoff CC (2011). The couple as context: Latino gay male couples and HIV. *Culture, health & sexuality*, 13(3), 299–312. 10.1080/13691058.2010.528032.
- Berg RC, Munthe-Kaas HM, & Ross MW (2016). Internalized Homonegativity: A Systematic Mapping Review of Empirical Research. *Journal of homosexuality*, 63(4), 541–558. 10.1080/00918369.2015.1083788. [PubMed: 26436322]

- Bhana D. (2012). "Girls are not free"—In and out of the South African school. *International Journal of Educational Development*, 32(2), 352–358. 10.1016/j.ijedudev.2011.06.002.
- Bialosiewicz S, Murphy K, & Berry T (2013). *An Introduction to Measurement Invariance Testing: Resource Packet for Participants*. Claremont Evaluation Center.
- Blumell LE, & Rodriguez NS (2020). Ambivalent Sexism and Gay Men in the US and UK. *Sexuality & Culture*, 24(1), 209–229. 10.1007/s12119-019-09635-1.
- Brooks RA, Etzel MA, Hinojos E, Henry CL, & Perez M (2005). Preventing HIV among Latino and African American gay and bisexual men in a context of HIV-related stigma, discrimination, and homophobia: Perspectives of providers. *AIDS patient care and STDs*, 19(11), 737–744. 10.1089/apc.2005.19.737. [PubMed: 16283834]
- Campbell HL, Barry CL, Joe JN, & Finney SJ (2008). Configural, metric, and scalar invariance of the modified achievement goal questionnaire across African American and white university students. *Educational and Psychological Measurement*, 68(6), 988–1007. 10.1177/0013164408318766.
- Carballo-Dieguez A, Dolezal C, Nieves L, Diaz F, Decena C, & Balan I (2004). Looking for a tall, dark, macho man ... sexual-role behaviour variations in Latino gay and bisexual men. *Culture, Health & Sexuality*, 6(2), 159–171. 10.1080/13691050310001619662
- Chen HY, & Boore JR (2010). Translation and back-translation in qualitative nursing research: methodological review. *Journal of clinical nursing*, 19(1-2), 234–239. 10.1111/j.1365-2702.2009.02896.x. [PubMed: 19886874]
- Choi J, Kushner KE, Mill J, & Lai DW (2012). Understanding the language, the culture, and the experience: translation in cross-cultural research. *International Journal of Qualitative Methods*, 11(5), 652–665. 10.1177/160940691201100508.
- Connell RW, & Messerschmidt JW (2005). Hegemonic masculinity: Rethinking the concept. *Gender & Society*, 19(6), 829–859. 10.1177/0891243205278639.
- Cowie LJ, Greaves LM, & Sibley CG (2019). Sexuality and sexism: Differences in ambivalent sexism across gender and sexual identity. *Personality and Individual Differences*, 148, 85–89. 10.1016/j.paid.2019.05.023.
- Croff JM, Hubach RD, Currin JM, & Frederick AF (2017). Hidden rainbows: Gay bars as safe havens in a socially conservative area since the pulse nightclub massacre. *Sexuality Research and Social Policy*, 14(2), 233–240. 10.1007/s13178-017-0273-1.
- Currie MR, Cunningham EG, & Findlay BM (2004). The Short Internalized Homonegativity Scale: Examination of the factorial structure of a new measure of internalized homophobia. *Educational and Psychological Measurement*, 64(6), 1053–1067. 10.1177/0013164404264845.
- Diaz JE, Schrimshaw EW, Tieu HV, Nandi V, Koblin BA, & Frye V (2020). Acculturation as a Moderator of HIV Risk Behavior Correlates Among Latino Men Who Have Sex with Men. *Archives of sexual behavior*, 49(6), 2029–2043. 10.1007/s10508-019-01604-x [PubMed: 31858309]
- Díaz RM, Peterson JL, & Choi KH (2008). Social discrimination and health outcomes in African American, Latino, and Asian/Pacific Islander gay men. In Wolitski RJ, Stall R, & Valdiserri RO (Eds.), *Unequal opportunity: Health disparities affecting gay and bisexual men in the United States* (pp. 327–354). New York, NY: Oxford University Press.
- Diefendorf S, & Bridges T (2020). On the enduring relationship between masculinity and homophobia. *Sexualities*, 23(7), 1264–1284. 10.1177/136346071987684.
- DuBard CA, & Gizlice Z (2008). Language spoken and differences in health status, access to care, and receipt of preventive services among US Hispanics. *American journal of public health*, 98(11), 2021–2028. 10.2105/AJPH.2007.119008. [PubMed: 18799780]
- Estrada F, Rigali-Oiler M, Arciniega GM, & Tracey TJG (2011). Machismo and Mexican American men: An empirical understanding using a gay sample. *Journal of Counseling Psychology*, 58(3), 358–367. 10.1037/a0023122. [PubMed: 21534655]
- Folsom DP, Gilmer T, Barrio C, Moore DJ, Bucardo J, Lindamer LA, ... Patterson T (2007). A longitudinal study of the use of mental health services by persons with serious mental illness: Do Spanish-speaking Latinos differ from English-speaking Latinos and Caucasians? *American Journal of Psychiatry*, 164(8), 1173–1180. 10.1176/appi.ajp.2007.06071239. [PubMed: 17671279]

- Glick P, & Fiske ST (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology*, 70(3), 491. 10.1037/0022-3514.70.3.491.
- Glick P, Fiske ST, Mladinic A, Saiz JL, Abrams D, Masser B, ... Lopez Lopez W (2000). Beyond prejudice as simple antipathy: hostile and benevolent sexism across cultures. *Journal of Personality and Social Psychology*, 79(5), 763–775. doi:10.1037//0022-3514.79.5.763 [PubMed: 11079240]
- Guadagnoli E, & Velicer WF (1988). Relation of sample size to the stability of component patterns. *Psychological Bulletin*, 103(2), 265–275. 10.1037/0033-2909.103.2.265. [PubMed: 3363047]
- Hammond MD, Milojev P, Huang Y, & Sibley CG (2018). Benevolent sexism and hostile sexism across the ages. *Social Psychological and Personality Science*, 9(7), 863–874. 10.1177/1948550617727588.
- Harrington C. (2021). What is “Toxic Masculinity” and Why Does it Matter? *Men and masculinities*, 24(2), 345–352. 10.1177/1097184X20943254.
- Hunter JB, Fernandez ML, Lacy-Martinez CR, Dunne-Sosa AM, & Coe MK (2007). Male Preventive Health Behaviors: Perceptions From Men, Women, and Clinical Staff Along the US-Mexico Border. *American Journal of Mens Health*, 1(4), 242–249. 10.1177/1557988306294163.
- Kyriazos TA (2018). Applied psychometrics: sample size and sample power considerations in factor analysis (EFA, CFA) and SEM in general. *Psychology*, 9(08), 2207. 10.4236/psych.2018.98126.
- Lee JJ, Rao DW, Robles G, Kerani RP, Naismith K, Rodriguez-Díaz CE, ... Katz DA (2021). Differences in HIV Risk and Prevention Among Cisgender Latino Sexual Minority Men by Language of Online Survey Completion: Analysis of National and Washington State Data. *AIDS and behavior*, 26(3), 662–673. 10.1007/s10461-021-03426-2 [PubMed: 34405303]
- Levison JH, Bogart LM, Khan IF, Mejia D, Amaro H, Alegría M, & Safren S (2017). “Where It Falls Apart”: Barriers to retention in HIV Care in Latino immigrants and migrants. *AIDS patient care and STDs*, 31(9), 394–405. 10.1089/apc.2017.0084. [PubMed: 28891715]
- Liang C, Salcedo J, & Miller H (2011). Perceived racism, masculinity ideologies, and gender role conflict among Latino men. *Psychology of Men & Masculinity*, 12(3), 201–215. 10.1037/a0020479.
- Lopez-Class M, Castro FG, & Ramirez AG (2011). Conceptions of acculturation: a review and statement of critical issues. *Social science & medicine*, 72(9), 1555–1562. 10.1016/j.socscimed.2011.03.011. [PubMed: 21489670]
- Lovelace S, & Wheeler T (2006). Cultural discontinuity between home and school language socialization patterns: Implications for teachers. *Education*, 127(2), 303–310.
- Masser B, & Abrams D (1999). Contemporary sexism: The relationships among hostility, benevolence, and neosexism. *Psychology of women quarterly*, 23(3), 503–517. 10.1111/j.1471-6402.1999.tb00378.x.
- Mejía G. (2016). Language usage and culture maintenance: A study of Spanish-speaking immigrant mothers in Australia. *Journal of Multilingual and Multicultural Development*, 37(1), 23–39. 10.1080/01434632.2015.1029931
- Messerschmidt JW (2012). Engendering gendered knowledge: Assessing the academic appropriation of hegemonic masculinity. *Men and masculinities*, 15(1), 56–76. 10.1177/1097184X11428384.
- Meyer MA, & Champion JD (2010). Protective factors for HIV infection among Mexican American men who have sex with men. *The Journal of the Association of Nurses in AIDS Care*, 21(1), 53–62. 10.1016/j.jana.2009.08.003. [PubMed: 19804993]
- Mirande` A. (1988). Chicano fathers: Traditional perceptions and current realities. In Bronstein P & Cowan CP (Eds.), *Fatherhood today: Men’s changing role in the family* (pp. 93–106). Oxford, England: Wiley.
- Mosher DL (1991). Macho Men, Machismo, and Sexuality. *Annual Review of Sex Research*, 2(1), 199–247. 10.1080/10532528.1991.10559871
- Murgo MAJ, Huynh KD, Lee DL, & Chrisler JC (2017). Anti-Effeminacy Moderates the Relationship Between Masculinity and Internalized Heterosexism Among Gay Men. *Journal of LGBT Issues in Counseling*, 11(2), 106–118. 10.1080/15538605.2017.1310008
- O’connor BP (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer’s MAP test. *Behavior Research Methods, Instruments, & Computers*, 32(3), 396–402. 10.3758/BF03200807.

- Patrón OE, & Garcia GA (2016). The convergence of social identities and environmental contexts in facilitating Latino male resilience. *Hispanic Journal of Behavioral Sciences*, 38(4), 523–545. 10.1177/0739986316669496.
- Pavlenko A. (2012). Affective processing in bilingual speakers: disembodied cognition? *International journal of psychology : Journal international de psychologie*, 47(6), 405–428. 10.1080/00207594.2012.743665. [PubMed: 23163422]
- Perez A, Santamaria EK, & Operario D (2018). A Systematic Review of Behavioral Interventions to Reduce Condomless Sex and Increase HIV Testing for Latino MSM. *Journal of immigrant and minority health*, 20(5), 1261–1276 10.1007/s10903-017-0682-5. [PubMed: 29247266]
- Perrotte JK, Zamboanga BL, & Kearns N (2019). Linking alcohol-specific masculine norms and drinking behavior among Latino men. *Psychology of Men & Masculinities*, 21(3), 490–495. 10.1037/men0000252. [PubMed: 33776591]
- Ponari M, Rodríguez-Cuadrado S, Vinson D, Fox N, Costa A, & Vigliocco G (2015). Processing advantage for emotional words in bilingual speakers. *Emotion*, 15(5), 644–652. 10.1037/emo0000061. [PubMed: 25893450]
- Rhodes SD, Alonzo J, Mann L, Downs M, Siman FM, Andrade M, ... Bachmann LH (2014). Novel Approaches to Hiv Prevention and Sexual Health Promotion among Guatemalan Gay and Bisexual Men, Msm, and Transgender Persons. *AIDS Education and Prevention*, 26(4), 345–361. 10.1521/aeap.2014.26.4.345. [PubMed: 25068181]
- Rhodes SD, Martinez O, Song EY, Daniel J, Alonzo J, Eng E, ... Reboussin B (2013). Depressive symptoms among immigrant Latino sexual minorities. *American journal of health behavior*, 37(3), 404–413. 10.1080/00224499.2020.1743961. [PubMed: 23985187]
- Rivera DB, Brady JP, & Blashill AJ (2020). Traditional Machismo, Caballerismo, and the Pre-Exposure Prophylaxis (PrEP) Cascade Among a Sample of Latino Sexual Minority Men. *Journal of sex research*, 1–8. 10.1080/00224499.2020.1743961.
- Roberts S. (2013). Boys will be boys... won't they? Change and continuities in contemporary young working-class masculinities. *Sociology*, 47(4), 671–686. 10.1177/0038038512453791.
- Robles G, Dellucci TV, Rosario-Williams B, Jimenez RH, Rodríguez-Díaz CE, & Starks TJ (2022). Factors associated with individual and couple participation in online sexual health research with Latinx sexual minority men. *Journal of Latinx Psychology*, 10(3), 241. 10.1037/lat0000169. [PubMed: 36246414]
- Rodríguez-Díaz CE, Martínez-Vélez JJ, Jovet-Toledo GG, Vélez-Vega CM, Hernández-Otero N, Escotto-Morales B, & Mulinelli-Rodríguez JJ (2016). Challenges for the well-being of and health equity for lesbian, gay, and bisexual people in Puerto Rico. *International Journal of Sexual Health*, 28(4), 286–295. 10.1080/19317611.2016.1223252.
- Sáenz VB, Bukoski BE, Lu C, & Rodriguez S (2013). Latino males in Texas community colleges: A phenomenological study of masculinity constructs and their effect on college experiences. *Journal of African American Males in Education*, 4(2), 82–102.
- Santiago-Rivera AL (1995). Developing a Culturally Sensitive Treatment Modality for Bilingual Spanish-Speaking Clients: Incorporating Language and Culture in Counseling. *Journal of Counseling & Development*, 74(1), 12–17. 10.1002/j.1556-6676.1995.tb01816.x
- Santiago-Rivera A. (2003). Latinos values and family transitions: Practical considerations for counseling. *Counseling and Human Development*, 35(6), 1.
- Scheim AI, Bauer GR, Bastos JL, & Poteat T (2021). Advancing Intersectional Discrimination Measures for Health Disparities Research: Protocol for a Bilingual Mixed Methods Measurement Study. *Journal of Medical Internet Research Research Protocols*, 10(8), e30987. 10.2196/30987.
- Smith RM, Parrott DJ, Swartout KM, & Tharp AT (2015). Deconstructing Hegemonic Masculinity: The Roles of Antifemininity, Subordination to Women, and Sexual Dominance in Men's Perpetration of Sexual Aggression. *Psychology of Men & Masculinity*, 16(2), 160–169. 10.1037/a0035956. [PubMed: 29950930]
- Sobralste M. (2006). Machismo sustains health and illness beliefs of Mexican American men. *Journal of the American Academy of Nurse Practitioners*, 18(8), 348–350. 10.1111/j.1745-7599.2006.00144.x. [PubMed: 16907695]

- Surace FI, Levitt HM, & Horne SG (2017). The relation between cultural values and condom use among Latino gay men. *Journal of Gay & Lesbian Social Services*, 29(3), 252–272. 10.1080/10538720.2017.1320255.
- Swendeman D, Rotheram-Borus MJ, Comulada S, Weiss R, & Ramos ME (2006). Predictors of HIV-related stigma among young people living with HIV. *Health Psychology*, 25(4), 501–509. 10.1037/0278-6133.25.4.501. [PubMed: 16846325]
- Szymanski DM, Kashubeck-West S, & Meyer J (2008). Internalized heterosexism: A historical and theoretical overview. *The Counseling Psychologist*, 36(4), 510–524. 10.1177/0011000007309488.
- Thompson EH, & Bennett KM (2015). Measurement of masculinity ideologies: A (critical) review. *Psychology of Men & Masculinity*, 16(2), 115. 10.1037/a0038609.
- Urrabazo R. (1985). *Machismo: Mexican American male self-concept*. Doctoral dissertation, Graduate Theological Union, Berkeley, CA.
- Valdez LA, Garcia DO, Ruiz J, Oren E, & Carvajal S (2018). Exploring Structural, Sociocultural, and Individual Barriers to Alcohol Abuse Treatment Among Hispanic Men. *American Journal of Mens Health*, 12(6), 1948–1957. 10.1177/1557988318790882.
- Waling A. (2019). Problematising ‘toxic’ and ‘healthy’ masculinity for addressing gender inequalities. *Australian Feminist Studies*, 34(101), 362–375. 10.1080/08164649.2019.1679021.
- Wallace EV (2011). Understanding sex practices of heterosexual Hispanic males in an effort to prevent HIV. *International Journal of Humanities and Social Science*, 1, 8–10. 10.30845/ijhss.
- Wallace PM, Pomery EA, Latimer AE, Martinez JL, & Salovey P (2010). A Review of Acculturation Measures and Their Utility in Studies Promoting Latino Health. *Hispanic Journal of Behavioral Sciences*, 32(1), 37–54. 10.1177/0739986309352341. [PubMed: 20582238]
- Weisskirch RS, Kim SY, Zamboanga BL, Schwartz SJ, Bersamin M, & Umaña-Taylor AJ (2011). Cultural influences for college student language brokers. *Cultural Diversity & Ethnic Minority Psychology*, 17(1), 43–51. 10.1037/a0021665. [PubMed: 21341896]
- Welch DE, & Welch LS (2008). The importance of language in international knowledge transfer. *Management International Review*, 48, 339–360. 10.1007/s11575-008-0019-7.
- Xu H, & Tracey TJ (2017). Use of multi-group confirmatory factor analysis in examining measurement invariance in counseling psychology research. *European Journal of Counselling Psychology*, 6(1), 75–82. 10.5964/ejcop.v5i2.120.
- Yong AG, & Pearce S (2013). A beginner’s guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in quantitative methods for psychology*, 9(2), 79–94. 10.20982/tqmp.09.2.p079.

Table 1.

Summary of Demographics

	Full Sample (N=530)		English (n = 428)		Spanish (n = 102)		Significance test
	n	%	n	%	n	%	χ^2 (1)
Education							0.01
< 4-year degree	336	63.4	271	63.3	65	63.7	
> 4-year degree	194	36.6	157	36.7	37	36.3	
Income							5.30*
< \$30k/year	332	62.6	258	60.3	74	72.5	
> \$30k/year	198	37.4	170	39.7	28	27.5	
Race							
White Latino	335	63.2	269	62.9	66	64.7	0.12
Black/Afro Latino	43	8.1	27	6.3	16	15.7	9.72*
Indigenous Latino	19	3.5	15	3.5	4	3.9	0.04
Other Latino	133	25.1	117	27.3	16	15.7	5.95*
Region ^f							
Northeast	139	26.2	107	25	32	31.4	1.85
Midwest	57	10.8	43	10	14	13.7	1.22
South	126	23.8	92	21.5	34	33.3	6.6**
West	198	37.4	184	43	14	13.7	29.78**
Puerto Rico	8	1.5	1	0.2	7	6.9	24.55**
Mainland US Born							68.50**
Yes	223	42.1	285	66.6	22	21.6	
No	307	57.9	143	33.4	80	78.4	
	M	SD	M	SD	M	SD	t (528)
Age	31.3	6.9	31.1	6.7	31.7	7.5	0.74

Notes. *p<0.05; **p<0.01; ^f2 missing cases for Region.

Table 2.

Measurement Invariance of Traditional Two-factor Model

	χ^2 (df)	CFI	SRMR	RMSEA	RMSEA 90% CI
Spanish Two Factor Model	325 (165)*	0.90	0.09	0.09	0.08, 0.11
English Two Factor Model	554 (165)*	0.93	0.07	0.07	0.06, 0.08
Configural Invariance	1209 (347)*	0.89	0.09	0.09	0.08, 0.10

* p<.001;

Table 3.

Summary of Factor Loadings

Items	English (N = 428)		Spanish (N = 102)		
	Factor 1: Caballerismo	Factor 2: Machismo	Factor 1: Caballerismo	Factor 2: Inherent Machismo	Factor 3: Relational Machismo
1. Masculine men are superior to effeminate men.	-0.01	0.63	0.10	0.61	0.09
2. In a family, a father's wish is law.	-0.05	0.72	0.10	0.70	0.01
3. Men are superior to women.	-0.19	0.76	-0.07	0.96	-0.03
4. The birth of a male child is more important than a female child.	-0.15	0.77	-0.15	0.59	0.32
5. It is important not to be the weakest man in a group.	0.28	0.63	0.12	-0.03	0.78
6. Real men never let down their guard.	0.08	0.79	-0.02	0.06	0.79
7. A man should be in control of his husband.	-0.03	0.79	-0.03	0.14	0.83
8. It would be shameful for a man to cry in front of his children.	-0.16	0.76	-0.09	0.49	0.48
9. It is necessary to fight when challenged.	0.08	0.60	-0.02	-0.03	0.66
10. It is important for women to be beautiful.	0.16	0.63	0.08	0.21	0.72
11. A man is expected to be loyal to his husband.	0.63	0.05	0.64	-0.14	0.25
12. Men must display good manners in public.	0.84	-0.04	0.86	-0.1	0.04
13. Men should be affectionate with their children.	0.87	-0.18	0.94	-0.12	0.02
14. Men should respect their elders.	0.87	-0.16	0.91	-0.09	0.03
15. Men must exhibit fairness in all situations.	0.84	-0.07	0.89	-0.09	0.11
16. Men should be willing to fight to defend their family.	0.80	0.07	0.78	0.06	0.1
17. The family is more important than the individual.	0.58	0.17	0.66	0.23	0.05
18. Men hold their mothers in high regard.	0.77	0.07	0.89	0.03	-0.04
19. A real man does not brag about sex.	0.58	0.02	0.73	0.16	-0.16
20. Men want their children to have better lives than themselves.	0.82	-0.08	0.94	0.06	-0.13
21. The bills (electric, phone, etc.) should be paid for by the most masculine man in a relationship	-0.04	0.65	-0.23	0.42	0.31

Note. Bolded numbers represent factor loadings greater than 0.40

Table 4.

Summary of regression analyses predicting internalized heterosexism

	English (<i>n</i> = 428; <i>R</i> ² = .24)		Spanish (<i>n</i> = 102; <i>R</i> ² = .35)					
	B	SE	β	p	B	SE	β	p
Constant	3.79	.32			3.88	.52		
Age	-.02	.01	-.10	.021	-.01	.01	-.03	.760
Gay	-.34	.13	-.12	.010	-.15	.24	-.06	.531
Education								
> 4-year degree	-.34	.10	-.17	.001	-.16	.17	-.09	.373
Income								
>\$30,000/year	.05	.10	.02	.645	-.21	.20	-.11	.289
Race								
Black/Afro-Latino	-.04	.18	-.01	.837	-.14	.23	-.06	.542
Indigenous Latino	-.07	.23	-.01	.764	-.32	.47	-.07	.498
Other Latino	.02	.10	.01	.810	-.03	.23	-.01	.911
Region								
Midwest	-.26	.16	-.08	.097	-.37	.26	-.15	.149
South	-.03	.13	-.01	.824	.52	.21	.28	.013
West	.05	.11	.03	.658	.40	.25	.16	.120
Puerto Rico	.35	.86	.02	.683	.73	.34	.21	.035
Nationality								
Mainland US born	-.15	.09	-.07	.110	-.42	.22	-.20	.053
Cultural Values								
Caballerismo	-.01	.03	-.01	.891	-.11	.05	-.23	.030
Machismo	.30	.03	.41	.000	-	-	-	-
Inherent	-	-	-	-	.21	.09	.33	.017
Relational	-	-	-	-	.04	.08	.07	.605

Notes. Referent groups for categorical variables are as follows: Education is less than a 4-year degree; Income is < \$30k/year; Race is White Latino; Region is Northeast; Nationality is non-US-born