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## The influence of relationship power and partner communication on the syndemic factor among Hispanic women

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Hispanic women experience health disparities related to a number of behavioral and mental health conditions. For example, although Hispanic women are less likely to meet the criteria for substance abuse when compared to non-Hispanic whites, they are more likely to experience the negative consequences of substance abuse (e.g., termination of parental rights) and less likely to receive needed treatment (Alvarez, Jason, Olson, Ferrari & Davis, 2007; Amaro, Larson, Gampel, Richardson, Savage & Wagler, 2005). Similarly, although the prevalence of intimate partner violence (IPV) among Hispanic women is comparable to that of non-Hispanic whites (Breiding, Smith, Basile, Walters, Chen & Merrick, 2014), they are more likely to suffer from negative psychological outcomes such as depression, post-traumatic stress disorder (PTSD), and suicidal ideation (Bonomi, Anderson, Cannon, Slesnic & Rodriguez, 2009; Igram, 2007; Krishnan, Hilbert, & VanLeeuwen, 2001). Finally, Hispanic women are over twice as likely to acquire HIV as non-Hispanic whites despite lower behavioral risk such as less injection drug use and fewer sexual partners (Abel & Chambers, 2004; Amaro et al, 2005). More research is needed to identify the contributing factors essential to prevent these disparities.

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The syndemic approach is one useful way to understand and address health disparities among Hispanic women (Gonzalez-Guarda, 2009). A syndemic is comprised of co-occurring epidemics (e.g., substance abuse and HIV) that have synergistic effects on health outcomes (Singer, 1996; Singer & Clair, 2003). There is increasing empirical support for the substance abuse, violence, HIV and AIDS, and depression (SAVA) syndemic among women (Gilbert et al., 2015; Koblin et al., 2015; Meyer et al. 2011). Although several risk and protective factors contributing to this syndemic have been identified, less is known about the effects of the quality of intimate relationships. Understanding this dynamic is important given the influential role that intimate relationships play in the socio-ecology of multiple health outcomes for women (House, Landis & Umberson, 1988; Campbell, 2002). The purpose of this study is to test the hypothesized relationships between characteristics of intimate relationships (i.e., relationship power and partner communication) and the SAVA syndemic among community dwelling Hispanic Women.

## **The SAVA Syndemic**

### **Syndemic Theory**

Understanding how certain environmental, social, and biological health conditions impact populations experiencing health disparities is central to improving health. Syndemic theory seeks to explain the co-occurrence of overlapping epidemics which are mutually enhancing (Singer, 1994; Singer, 1996). A syndemic occurs when two or more epidemics interact synergistically, and the result of this interaction is an increased burden of disease in a population (Frumkin, 2002; Homer & Milstein, 2002). When applied to behavioral health issues, a syndemic moves beyond the mutually enhancing disease interactions at the biological level, to mutually enhancing disease interactions at the biological, environmental, and social levels (Singer & Clair, 2003). Adverse environmental and social conditions such as violent social environments, lack of access to social resources, and oppressive relationships are found to propagate negative health outcomes such as substance abuse, depression, and stress (Singer & Clair, 2003).

### **The SAVA Syndemic**

The SAVA syndemic was first coined to describe the intertwined nature of substance abuse, violence, and AIDS among marginalized inner city women (Singer, 1994, 1996). Researchers have expanded upon the initial description SAVA to describe the complex relationships among alcohol and drug use, abuse experiences as a child and in adulthood, sexual risk taking, history of HIV or other sexually transmitted infections (STIs), and mental health among women in community-based or high risk settings such as in the criminal justice system (Meyer, Springer, & Altice, 2011). For example, Koblin and colleagues (2015) recently completed a longitudinal study examining the risk factors for HIV among a racially and ethnically diverse group of women across three cities in the US. Women who reported heavy alcohol and drug use and intimate partner violence were at higher odds of reporting unprotected vaginal and anal sex and exchanging sex for money, drugs, or other resources. Despite the progress that has been made in describing the mechanisms of the SAVA syndemic, significant gaps remain in describing the social determinants of this

syndemic in certain geographical regions such as Latin America and the Caribbean (Gilbert et al., 2015) and sub-populations in the U.S.

Gonzalez-Guarda and colleagues (2011a) developed a syndemic model specific to Hispanics in the U.S. and later empirically tested various aspects of this model. First, various measures used to assess the substance abuse, violence, HIV, and depression (SAVA) syndemic were reduced to a single latent variable, the syndemic factor (González-Guarda et al., 2011b). Later, they identified various socioeconomic and cultural risk and protective factors for this syndemic among a diverse sample of community-dwelling Hispanic women. Risk factors included socioeconomic disadvantage, the percent of their lifetime they had lived in the U.S., and acculturation as risk factors. Conversely, family support and the maintenance of Hispanic practices such as the reliance of Spanish in communications with family and friends were identified as being protective (Gonzalez-Guarda, McCabe, Vermeesch, Cianelli & Peragallo, 2012).

### **Intimate Relationship Level Predictors of SAVA: Power and Communication**

Despite the progress that has been made in SAVA research including women and Hispanic communities, there is a gap in the literature regarding how intimate relationship level factors, such as relationship power and partner communication, influence this syndemic.

Relationship power is defined as the extent in which a partner controls the relationship and how much he or she can make decisions against their partner's wishes (Emerson, 1981). Cultural ideologies disempowering women in intimate relationships contribute to a woman's lack of power in a relationship and can help facilitate abuse (Raj & Silverman, 2002).

*Machismo*, the conceptualization of masculinity in Hispanic culture, emphasizes the importance of Hispanic men having power and control over intimate relationships (Gonzalez-Guarda et al, 2011c). Studies that have examined the role of male dominated decision making powers have identified it to be a risk factors for intimate partner violence (Sugihara & Warner, 2002), and HIV (Pulerwitz, Gortmaker, & DeJong, 2000). The fact that men traditionally have held power for when and how sex will occur may inhibit women from discussing sexual matters with their partners and negotiating safer sexual practices (Pulerwitz, Gortmaker, & DeJong, 2000; Weeks, Hilario, Li, Coman, Abott, Sylla, Corbett & Dickson-Gomez, 2010). Among Hispanic women specifically, feelings of powerlessness and the inability to affect safer sexual decisions have been identified as influencing their risk for HIV (Pulerwitz, Amaro, Jong, Gortmaker & Rudd, 2002; Harvey, Beckman, Browner & Sherman, 2002). Notably, Hispanic women participating in a study conducted in community health centers with higher relationship power were five times more likely to engage in condom use than women with lower relationship power (Pulerwitz et al, 2002).

The nature and quality of communication among intimate partners is also emerging in the literature as an important predictor of the SAVA syndemic. Researchers have documented that observed patterns of poor communication among couples — characterized by hostility, low warmth, and low problem description — are associated with a recent history of aggression (Gordis, Margolin, & Vickerman, 2005). Similarly, the quality of partner communication has been associated with HIV risk. For example, in a meta-analysis exploring the relationship of partner communication and safer sexual behaviors, researchers

reported that communication that was more specific to managing risks (e.g., condom use and sexual history) had a stronger effect on HIV prevention behaviors than more general communications about sex (Noar, Carlyle, & Cole, 2006). For this reason, HIV prevention programs for women often address partner communication as it relates to safer sex negotiation. Indeed, in an HIV prevention program specifically designed to address relationship risk factors for Hispanic women, researchers noted a decrease in IPV which was mediated by the quality of partner communication (McCabe, Gonzalez-Guarda, Peragallo, & Mitrani, 2016).

This study extends the empirical literature on the effects of relationship power and partner communication on the SAVA syndrome among Hispanic women. Based on syndemic theory and our review of the literature, we examined whether a syndemic factor explained the covariance in the SAVA measures from this sample. Next, we tested the following hypothesized relationships: 1) Relationship power is related to the syndemic factor among Hispanic adult women after controlling for socioeconomic factors, acculturation, and an acculturation interaction; and 2) Partner communication is related to the syndemic factor among Hispanic adult women after controlling for socioeconomic factors and acculturation.

## Method

### Design

This study is a secondary data analysis of data collected during the baseline assessment of an HIV risk reduction effectiveness trial for Hispanic women, SEPA (*Salud/Health, Educación/Education, Prevención/Prevention, and Autocuidado/Self-care*) (N = 320).

### Sample and Setting

Data were collected between May 2013 and February 2016 in South Florida. Participants were recruited from the local health department and community-based settings such as churches, supermarkets, and community events using in-person recruitment and posting study flyers. Candidates were informed that the study was to evaluate the effectiveness of an HIV prevention program for Hispanic women. In order to be eligible to participate, candidates needed to self-identify as Hispanic or Latina, be between the ages of 18 and 50, and be sexually active in the past three months. Women were ineligible if they had previously participated in another SEPA trial or any other HIV prevention program within the past six months. Data were collected in a private office in a centrally located hospital that was easily accessible to the public.

The majority of women (93%) in the sample were Spanish-speaking immigrants. Participants represented 16 different countries of origin and were mostly born in Cuba (55%), Nicaragua (9%), Colombia (9%), and the Dominican Republic (5%). Additional information on participant characteristics is reported in Table 1. Of importance, a high percentage of women reported IPV (44%) and a history of STIs (35%).

## Procedures

Institutional review board approval was obtained through the University and the health department prior to initiating recruitment and data collection activities. Data were collected using a structured survey that was administered through e-Velos, a secure online research management software. Participants were compensated \$50 for the completion of the baseline assessment.

## Measures

The self-reported measures used to collect data for this study were available in English and Spanish. The latent syndemic factor outcome variable was comprised of manifest variables (i.e., measured variables) including substance abuse, violence, risk for HIV, and depression. Reducing these outcome variables to a single factor is aligned with syndemic theory in that it will allow for the identification of predictors that influence these intertwined conditions (Gonzalez-Guarda et al., 2011). The predictor variables included measures of relationship power, partner communication about HIV, education, and acculturation (Hispanicism and Americanism).

**Substance Abuse**—An adapted form of the 9-item Substance Abuse Behavior questionnaire (Kelly, Murphy & Washington, 1994) was administered. For this study, a scale was created with three items: frequency of alcohol and illicit drug use (two questions) and being drunk or high before sex (one question) in the past three months. This subscale had modest internal consistency ( $\alpha = .61$ ). Due to positive skew, a square root transformation was used for analysis.

**Intimate Partner Violence**—Two measures were used to assess intimate partner violence. The first measure used was the Partner-to-You (victimization) 10-item subscale of the Revised Conflict Tactics Scales, one of the most widely used instruments to measure conflict in relationships (Straus & Douglas, 2004). This scale had high internal consistency in this sample ( $\alpha = .88$ ). To correct for extreme positive skew, this scale was recoded as binary, i.e., any violence vs no violence. The second measure was the HITS, a brief domestic violence screening measure designed for use in primary care and other health settings (Sherin, Sinacore, Li, Zitter & Shakail, 1998). This scale has four items, including physical harm, insulting, threatening, and screaming or cursing, on a five-point Likert scale from never to frequently. A score greater than 10 is considered a positive result, so this variable was coded as negative or positive for analysis. In this sample, the HITS had strong internal consistency of  $\alpha = .82$ .

**Risk for HIV**—Risk for HIV was assessed using a combination of self-reported lifetime STI history and laboratory tests for Chlamydia. Self-report STI history was assessed through asking participants to report if they were ever diagnosed with certain common diseases listed. Chlamydia was assessed with strand displacement amplification (CDC, 2007), and was chosen as the STI to assess because it is the most common STI among women in the geographical area where the study took place (Florida Department of Health, n.d.). Participants reporting diagnoses of one or more STI in their lifetimes and/or a positive laboratory test were coded as 1 = positive, 0 = negative.

**Depressive symptoms**—Depressive symptoms were measured with the Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer & Williams, 2001), a widely-used nine-item scale for depression screening in primary care and other health settings. Items about depressive symptoms are scored on a four-point Likert scale, from 0 *not at all* to 3 *everyday*; scores of 15 or greater indicate moderate to severe symptoms of depression. The PHQ-9 had high internal consistency,  $\alpha = .89$  in this sample. Due to positive skew, a square root transformation was used for analysis.

**Relationship power**—Relationship power was assessed with the Sexual Relationship Power Scale (Pulerwitz et al., 2000). This scale has 23 items in two domains, relationship control (e.g. ‘My partner tells me who I can spend time with’) and decision making dominance (e.g. ‘My partner usually has more say about whether we have sex’). Each subscale is scored separately, and then combined in to a single dimension of relationship power. In this sample, the measure had strong internal consistency,  $\alpha = .89$ .

**Partner communication about HIV**—This scale has ten items, adapted from Catania (1987), to ask whether the woman had discussed HIV prevention, including condoms, health, negotiating efforts, and HIV/AIDS concerns, with her sexual partner(s) during the past three months. The scale had high internal consistency,  $\alpha = .89$ , in this sample.

**Acculturation**—The Bidimensional Acculturation Scale (Marin & Gamba, 1996) has 24 items to assess how acculturated Hispanics are to the U.S. culture (Americanism) and their culture of origin (Hispanicism). The 12 items that measure each cultural domain are averaged separately. In this sample, both the Hispanicism and Americanism subscales had high internal consistency ( $\alpha = .82$  and  $.96$ , respectively).

## Analysis Plan

We tested our primary hypothesis in two steps using Mplus 7.4 (Muthén & Muthén, 2014). Mplus allowed for modeling with categorical indicators using a weighted least square parameter estimator (WLSMV) using a diagonal weight matrix with standard errors and mean- and variance adjusted chi-square test statistic that uses a full weight matrix. In Step 1, Confirmatory Factor Analysis (CFA) was used to test the a priori theory that substance abuse, violence, risk for HIV, and depressive symptoms are aspects of a single underlying phenomena, i.e., a syndemic factor, in the current sample. Model fit was evaluated with the  $\chi^2$  test, CFI, and RMSEA. Good fit with the  $\chi^2$  is a non-significant result. We used cutoffs of CFI  $> .90$  and RMSEA  $< .05$  to indicate good fit. In Step 2, we tested predictors of the syndemic factor. The latent syndemic factor identified in Step 1 was regressed on each predictor, after controlling for education, Hispanicism, Americanism, and the interaction between Hispanicism and Americanism.



## Results

### Step 1: Test of syndemic factor model

The model with a single latent factor had good fit to the data,  $\chi^2(5) = 5.15, p = .398, CFI = .999, RMSEA = .010$ . Table 2 shows unstandardized and standardized loadings for indicators of the syndemic factor. All the items had significant standardized loadings above .25.

### Step 2: Predictors of the syndemic factor

Model fit. The fit of the model with predictor variables was good,  $\chi^2(29) = 43.52, p = .041, CFI = .926, RMSEA = .040$ . Table 3 shows the unstandardized and standardized coefficients for predictors of the syndemic factor. Figure 1 shows the final SEM model with the syndemic factor model and predictors.

**Control variables**—The syndemic factor was significantly related to education,  $b = -0.08, SE = 0.03, \beta = -.18, p = .009$ , Hispanicism,  $b = 1.11, SE = 0.31, \beta = .28, p < .001$ , Americanism,  $b = 0.82, SE = 0.17, \beta = .45, p < .001$ . There was also a significant interaction between Hispanicism and Americanism,  $b = -1.13, SE = 0.32, \beta = -.29, p < .001$ . Figure 2 shows the interaction between Hispanicism and Americanism.

**Hypothesis tests**—Controlling for these variables, relationship power was inversely related to the syndemic factor,  $b = -2.25, SE = 0.34, \beta = -.49, p < .001$ , but partner communication was not,  $b = 0.06, SE = 0.03, \beta = .14, p = .054$ . Combined, these variables accounted for over half (53%) of the variance in the syndemic factor.

## Discussion

The findings from this study suggest that relationship power in intimate relationships predicts the substance abuse, violence, HIV, depression syndemic among Hispanic women. That is, the more power women reported in their relationships, the less likely they were to report behaviors and experiences included in the syndemic factor. When relationship power is considered with other determinants of health such as education and acculturation, a large proportion in the variance of the syndemic factor can be explained (53%). These findings expand upon our current knowledge base regarding common risk and protective factors for the syndemic factor among Hispanic women, and have important implications for prevention efforts targeting this population.

Education and acculturation were related to the syndemic factor among Hispanic women, supporting previous syndemic theory research identifying the important role that socioeconomic and cultural factors play in influencing syndemic risks (Gonzalez-Guarda et al., 2011; Gonzalez-Guarda et al., 2012; Koblin et al., 2015 (Koblin et al., 2015)). However, unlike previous research which has documented the protective effects that maintaining Hispanic culture (Hispanicism) has on the syndemic factor (Gonzalez-Guarda et al., 2012), both Hispanicism and Americanism were positively related to the syndemic factor. When interactions between these two conceptualizations of acculturation were considered, it appears that high Americanism was driving the high syndemic scores. Specifically, participants who were both highly American and highly Hispanic, or highly American and

less Hispanic (i.e., as measured by acculturation scores), had higher syndemic scores. Acculturation strain theory offers a potential explanation for these findings (Vega & Gil, 1999; Vega, Zimmerman, Gill, Warheit & Apospori, 1993). According to this theory, risky behaviors may be the product of cumulative effects of stress-inducing factors related to acculturation. For example, the risk for alcohol use may be augmented by the stress associated with the acculturation process if it is not buffered by personal resources (Gil, Wagner, & Vega, 2000; Vega, Zimmerman, et al., 1993). Yet, because acculturative stress and resources such as social support were not measured in this study, we were not able to explore this hypothesis. More research is needed to untangle the relationships among acculturation, stress, protective factors, and health outcomes among Hispanics over time.

This study documented an inverse relationship between relationship power and the syndemic factor among Hispanic women. In fact, relationship power was the predictor variable that had the strongest effect on the syndemic factor ( $\beta = -.49, p < .001$ ). Similar findings have been documented by researchers exploring this relationship between power in intimate relationships and risk for intimate partner violence and HIV risk (Sugihara & Warner, 2002; Weeks et al., 2010). For example, in a study conducted by Sugihara and Warner (2002) exploring dominance and IPV among Mexican Americans, researchers found that decision-making power was higher among men than women and was associated with the perpetration of physical assault among men, especially when they were the sole decision makers.

In this study partner communication was not associated with the syndemic factor when other factors such as education, acculturation, and relationship power were addressed. This is inconsistent with previous research which has documented an effect of partner communication on risk for IPV (McCabe et al, 2015) and HIV (Noar, Carlyle, & Cole, 2006). Possible reasons for differing study results include the fact that this study assessed partner communication specifically around HIV. Although HIV risk was one of the components of the syndemic factor, substance abuse, violence, and depression were also included. Partner communication about HIV may not have been a good proxy for partner communication practices more broadly. It is also possible that the quality of partner communication does not matter when relationship power is considered. For example, if a Hispanic woman is trying to communicate using healthy communication practices with her partner, but her partner holds all the decision making power in that relationship, the qualities of that communication may not matter. More research is needed to explore potential complex interactions between these two relationship level factors on behavioral and mental health outcomes.

There are important limitations to this study that must be considered. First, this was a secondary data analysis of baseline data collected as part of an HIV prevention trial for Hispanic women. Consequently, using partner communication about HIV may not have been the best operationalization of the concept of partner communication in general. Second, although there was a strong theoretical basis to this study that helped explore directional relationships between the predictor variables and the syndemic factor outcome, the data used for this study were cross-sectional and therefore limits the ability to establish temporal relationships. The measures in this study were limited in that they asked participant to recall different time periods. For example, the substance abuse measure assessed for alcohol and



drug use in the past three months, while depressive symptoms were only assessed for the past two weeks. Although the timeframes that were assessed were the ones used in the original instructions of the measures, future studies should consider standardizing the period in which participants are asked to recall the exposure to coexisting risk behaviors and mental health conditions that characterize the syndemic factor. Finally, the sample of Hispanic heterosexual women consisted of primarily Cuban American women (54%) and Spanish speaking (93%) women. Given the tremendous diversity of the Hispanic community according to immigration status, country of origin, language, acculturation, geographical location in the U.S., and sexual orientation, caution must be taken in generalizing findings. Future studies should sample other Hispanic subgroups.

### Implications for Practice

Findings from this study call for development and testing of relationship level interventions addressing the SAVA syndemic among Hispanic women. Research is emerging suggesting the important role that integrated violence and HIV prevention programs can have in targeting key syndemic mechanisms among women. Couple-based interventions have been identified as an emerging approach to improve the power dynamics and quality of communication among couples and thereby reduce syndemic risk (Gilbert et al., 2015). More research is needed to integrate unique cultural factors and influential experiences for Hispanics in the U.S. such as shifts in gender norms and power dynamics associated with the acculturation process (Gonzalez-Guarda, Ortega, Vasquez & Ortega, 2010; Gonzalez-Guarda, Vasquez, Urrutia, Villarruel & Peragallo, 2011). Yet, caution must be taken when implementing interventions that promote equality in relationship power in intimate relationships, as attempting to change power dynamics in relationships may pose additional risk for women who are already experiencing IPV. Future research should help to further understand when in the acculturation process would be the best time to expose Hispanic couples to interventions that promote power equality.

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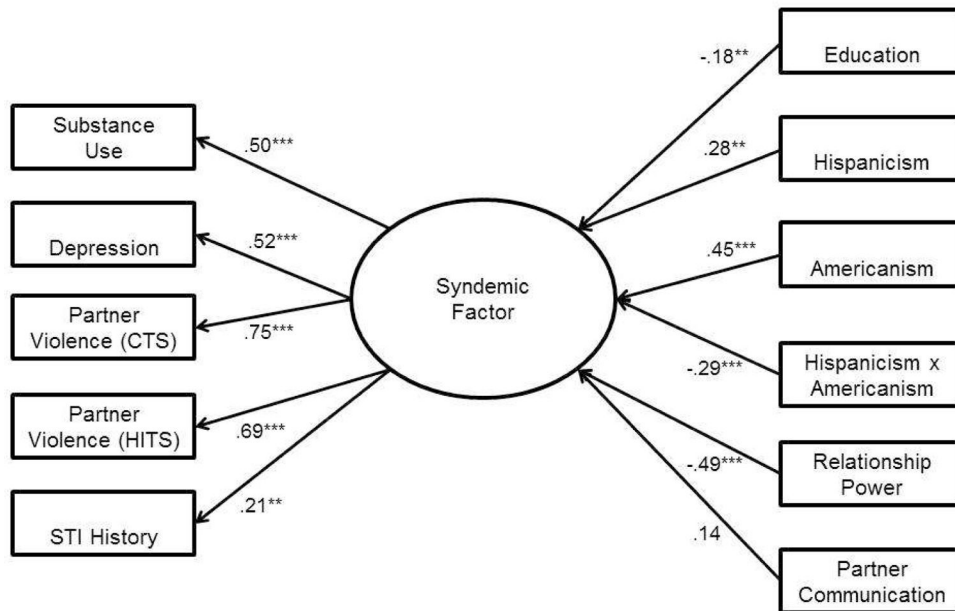
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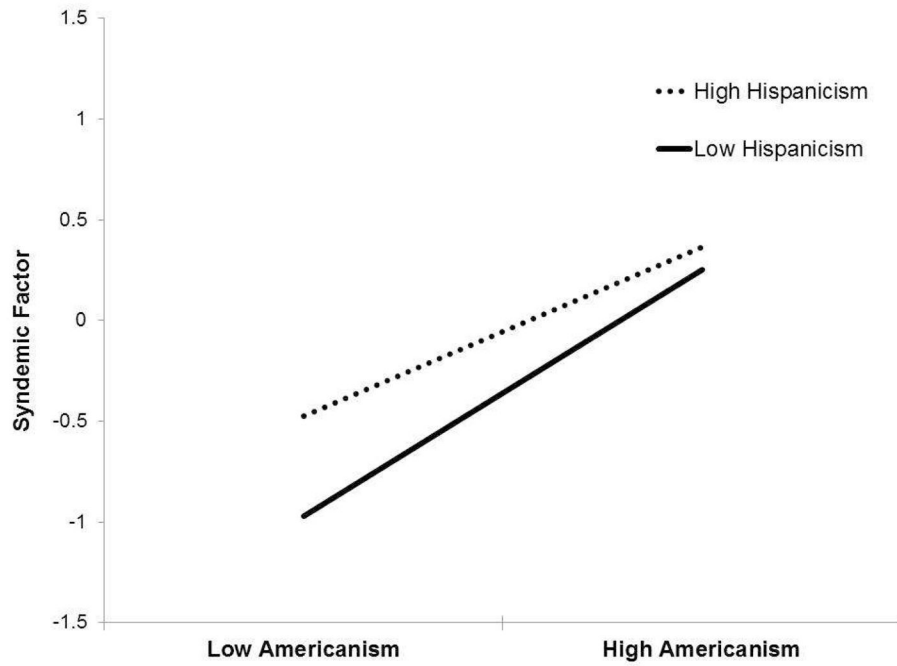
**Figure 1.** The right side of the diagram shows relationships between hypothesized predictors of the syndemic factor. The left side shows the relationships in the syndemic factor measurement model. These loadings differ slightly from the initial model, which did not include predictor variables. This model had a good fit to the data.,  $\chi^2 (29) = 43.52, p = .041, CFI = .926, RMSEA = .040.$  \* $p < .05,$  \*\* $p < .01,$  \*\*\* $p < .001.$

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**Figure 2.** Estimated Values of the Syndemic Factor for High and Low Hispanicism and High and Low Americanism. Note: High = Mean + 1SD; Low = Mean – 1SD.

**Table 1**

Characteristics of Hispanic Women (N = 320).

Characteristics	M	SD
Age, years	34.79	9.23
Education, years	13.73	3.39
Monthly Family Income, \$	1690.84	1048.52
Time in U.S., years	8.5	8.25
Number of Children	1.37	1.21
Substance Use	3.26	0.85
Depression	4.25	4.73
Hispanicism	3.50	0.37
Americanism	2.02	0.79
Relationship Power	2.63	0.32
Partner Communication	3.52	3.32
	<i>N</i>	%
Living with Spouse/Partner	219	68
Employed	91	28
Partner Violence (CTS)	141	44
Partner Violence (HITS)	14	4
STI History	113	35

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**Table 2**

Unstandardized and Standardized Loadings for Indicators of the Syndemic Factor (N = 320).

<i>Indicators</i>	<b>Model 1</b>			
	<i>b</i>	$\beta$	<i>SE<sub>b</sub></i>	<i>p</i>
Substance Use	0.07	.36	0.01	<.001
Depression	0.59	.47	0.10	<.001
Partner Violence (CTS)	0.90	.90	0.10	<.001
Partner Violence (HITS)	0.70	.70	0.01	<.001
STI History	0.25	.25	0.09	.005

*Note.* Variance of the latent factor is set to 1. Fit:  $\chi^2(5) = 5.15, p = .398, CFI = .999, RMSEA = .010$ .

**Table 3**

Unstandardized and Standardized Coefficients for Predictors of the Syndemic Factor (N = 320).

Predictors	<b>b</b>	<b>β</b>	SE <sub>b</sub>	<b>p</b>
Education	<b>-0.08</b>	<b>-.18</b>	<b>0.03</b>	<b>.009</b>
Hispanicism	<b>1.11</b>	<b>.28</b>	<b>0.31</b>	<b>&lt;.001</b>
Americanism	<b>0.82</b>	<b>.45</b>	<b>0.17</b>	<b>&lt;.001</b>
Hispanicism x Americanism	<b>-1.12</b>	<b>-.29</b>	<b>0.32</b>	<b>&lt;.001</b>
Relationship Power	<b>-2.25</b>	<b>-.49</b>	<b>0.34</b>	<b>&lt;.001</b>
Partner Communication	0.06	.14	0.03	.054

Note. Model Fit:  $\chi^2(29) = 43.52$ ,  $p = .041$ , CFI = .926, RMSEA = .040. **Bold** indicates significant coefficients.