

# A Meta-Analysis of Latinx Acculturation and Intimate Partner Violence

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TRAUMA, VIOLENCE, & ABUSE  
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## Abstract

**Objective:** Intimate partner violence (IPV) is a serious public health concern that affects many Latinx couples. The present study conducted a systematic review and meta-analysis to quantitatively assess acculturation as a predictor of IPV among Latinxs and subgroup analyses to evaluate the effect size by gender and type of acculturation measure. **Method:** The meta-analysis implemented the preferred reporting items for systematic reviews and meta-analyses guidelines to retrieve studies assessing the relationship between acculturation and intimate partner victimization among foreign-born and U.S.-born Latinx adults. A fixed effects model (FEM) and a random effects model (REM) were employed. Additional subgroup analyses examined the strength of the relationship by gender and type of acculturation measure. **Results:** The meta-analysis included 27 independent effect sizes across 21 studies. An REM yielded a weighted average correlation of .11 (95% confidence interval [.02, .20]). The strength of the correlation differed by scale and ranged from  $-.003$  to  $.47$ . For both men and women, higher acculturation was associated with increased IPV. **Conclusions:** Our results yielded three important findings: (1) the overall effect of acculturation on IPV is relatively small, (2) acculturation differentially influences male-to-female and female-to-male partner violence, and (3) the strength of the correlation between acculturation and IPV differs by scale. This body of work provides evidence for the effect of acculturation on IPV, with potential implications for interventions targeting Latinxs.

## Keywords

acculturation, Latinxs, intimate partner violence, meta-analysis

Culture is a unique meaning and information system shared by a group of people (Matsumoto & Juang, 2016). Imbedded in culture research is acculturation, which refers to a process of adaptation that immigrants undergo when interacting with a new culture (Abraido-Lanza, Armbrister, Florez, & Aguirre, 2006). Together, culture and acculturation provide a sensible, yet restrained, understanding of health behaviors among Latinxs. More specifically, evidence on the impact of acculturation on health behaviors has been accumulating for decades. However, many questions remain about how and why acculturation impacts health. In this meta-analytic review, we summarize the effect of acculturation on health behaviors, outline methodological concerns, and evaluate the overall effect of acculturation to U.S. culture on intimate partner violence (IPV). More specifically, the present study conducted a systematic review and meta-analysis to quantitatively assess acculturation as a predictor of IPV among Latinxs and subgroup analyses to evaluate the effect size by gender and type of acculturation measure. We then make recommendations for future research.

## IPV

IPV is a serious public health concern (World Health Organization, 2012). The Center for Disease Control and Prevention

(CDC, 2017) defined IPV as any physical, sexual, or psychological harm inflicted by an intimate partner. An intimate partner can be a current or former spouse or nonmarital partner, such as a boyfriend, girlfriend, or dating partner (Saltzman, Fanslow, McMahon, & Shelley, 1999). IPV is examined through the lens of an IPV victim and perpetrator (Caetano, Ramisetty-Mikler, Caetano Vaeth, & Harris, 2007; Caetano, Schafer, Clark, Cunradi, & Raspberry, 2000; Cunradi, 2009). A victim is a person who is the target of violence or abuse (Saltzman et al., 1999). Victimization has been documented as reports by an individual or by couples (Caetano et al., 2000). Common terms to differentiate between types of violence are male-to-female, female-to-male, and a combination (Caetano, Ramisetty-Mikler, & McGrath, 2004), though most of the research concerns male-to-female violence (Frias & Angel, 2012; Moreno, Morrill, & El-Bassel, 2011; Nava,

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McFarlane, Gilroy, & Maddoux, 2014; Sabina, Cuevas, & Zadnik, 2015).

Typically, IPV is measured as any form of physical, emotional, psychological, and sexual violence. These forms of violence are most commonly reported by clinics and shelters (Krishnan, Hilbert, & Pase, 2001; McFarlane, Wiist, & Watson, 1998; Sorenson, 1996). Although the differentiation of the form of IPV is important, most research studies report a composite of these forms, meaning that they report the overall effect of being a victim and define it as any person who has experienced any of these forms of violence as perpetrated by their romantic partner (Moreno et al., 2011; Vera, 2013). A few studies have investigated IPV by assessing the rate in which couples report victimization (Caetano et al., 2004, 2000). These studies provide a more thorough understanding of the dynamics and complexities of IPV by reporting the prevalence of male-to-female and female-to-male victimization. The strength of this method comes from the collection of information on IPV from both partners. However, most studies only report victimization rates as reported by one person in the relationship, typically the female.

The lifetime prevalence rate of exposure to IPV among Latinxs is approximately 29–37% for women (Breiding, Chen & Black, 2014). Being a victim of physical violence by an intimate partner results in an injury for women 14% of the time and 4% of the time for men. Physical violence often results in bruises, knife wounds, broken bones, pelvic pain, and more (Black, 2011; Breiding, Black, & Ryan, 2008). In 2015, the CDC reported that homicide caused the death of 3,519 girls and women in the United States (Petrosky et al., 2017). It is estimated that half of homicide victims are killed by a current or former male intimate partner (Catalano, Smith, Snyder, & Rand, 2009). In addition, IPV can result in psychological abuse which leads to depression, symptoms of posttraumatic stress disorder, antisocial behavior, suicidal behavior in females, low self-esteem, and emotional detachment (Coker et al., 2002; Roberts, Klein, & Fisher, 2003; Warshaw, Brashler, & Gil, 2009). Moreover, women with a history of IPV are more likely to engage in behaviors such as high-risk sexual behavior, using harmful substances, and unhealthy diet-related behaviors (Plichta, 2004; Roberts, Auinger, & Klein, 2005).

## Acculturation

Acculturation is defined as the process by which individuals adapt to a new living environment and potentially adopt the norms, values, and practices of their new host society (Abraido-Lanza et al., 2006). Berry (1997) introduced a “fourfold” model of acculturation strategies. This model is bilinear, it categorizes acculturation along two dimensions: (1) retention versus rejection of culture of origin and (2) adoption versus rejection of host culture. These dimensions create four strategies: assimilation, separation, marginalization, and integration. Assimilation proposes that individuals relinquish their cultural identity to adapt to the norms of the mainstream culture. In contrast, separation proposes that individuals retain their own cultural

identity and reject involvement with the host country. Marginalization refers to situations when an individual does not identify with or participate in their own culture or the host culture. Finally, integration proposes that individuals maintain their own cultural identity while at the same time becoming an active participant of the host culture. The four strategies provide a framework to understand the process of adaptation and the multiple ways in which an individual can adopt a new culture, retain their culture of origin, both, or neither. Out of the four adaptation strategies introduced by Berry, acculturation has received the most attention, particularly in the health psychology literature (Hunt, Schneider, & Comer, 2004).

A recent review summarized 26 measures of acculturation (Wallace, Pomery, Latimer, Martinez, & Salovey, 2010). Most measures outlined in the review do not employ an assessment of Berry’s “fourfold” quadrant, but rather utilize a unidimensional approach. Unidimensional measures inform the reader about the degree to which an individual has retained their culture of origin (low acculturation) or adopted the new culture (high acculturation; Wallace et al., 2010). In contrast, bidimensional measures inform the reader on the extent to which an individual endorses two domains—their culture of origin and the new culture. The Bi-dimensional Acculturation Scale for Hispanics and the Acculturation Rating Scale for Mexican Americans II (ARSMA-II) are examples of multidimensional measures (Cuellar, Arnold, & Gonzalez, 1995; Marin & Gamba, 1996; Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987). Regardless of dimensionality, most scales cover topics such as fluency in English or Spanish in different contexts (e.g., with relatives, with friends, at work, at school), language-based media preferences and use patterns, participation or preference for culture-specific celebrations, and ethnic composition of social networks. Researchers also use nativity, time spent living in the United States (mainland), and language preference (i.e., Spanish vs. English) as proxy measures of acculturation (Cunradi, 2009; Frías & Angel, 2012; Moreno et al., 2011).

Given the many measures of acculturation, there is limited research addressing how variant acculturation measures impact the reporting of its relation to health outcomes. A recent meta-analysis reported significant variability in the extent to which acculturation predicts alcohol consumption as a function of acculturation measure (Alvarez, Fritze, Ramos, Field, & Zárate, 2017). Although the findings from the meta-analysis were limited to alcohol consumption, they suggest that results in acculturation research might be impacted by the measure. Thus, creating little consistency across domains and providing evidence that generates a rationale to investigate how acculturation measures account for the inconsistency in findings across different health outcomes.

## Acculturation and Health

Across health domains, acculturation has provided inconsistent evidence. Several studies have reported that acculturation to mainstream American culture *increases* maladaptive behaviors

such as alcohol use (Abraido-Lanza, Chao, & Florez, 2005; Black & Markides, 1993; Cherpitel & Borges, 2002), tobacco use (Abraido-Lanza et al., 2005; Epstein, Botvin, & Diaz, 1998), substance use (Abraido-Lanza et al., 2005; Cherpitel & Borges, 2002), and body mass index (Abraido-Lanza et al., 2005). In contrast, research has shown that acculturation to mainstream American culture promotes healthy behaviors such as *decreased* alcohol use (Alvarez et al., 2017; Sánchez, 2015), tobacco use (Haynes, Harvey, Montes, Nickens, & Cohen, 1990), substance use (Amaro, Whitaker, Coffman, & Heeren, 1990), and more of exercise (Abraido-Lanza et al., 2005).

The inconsistency in acculturation findings has led to an emergence of research addressing the mixed results and identifying which theoretical frameworks are best suited to address these discrepancies. In particular, two theoretical frameworks have emerged to identify how acculturation affects health, including stress theory and the cultural norms theory. Stress theory suggests that when individuals undergo the process of acculturation, they interact with two cultures and constantly face the challenge of integrating different sets of cultural demands and messages that are often conflicting with interpersonal expectations (Adam, McGuire, Walsh, Basta, & LeCroy, 2005). Furthermore, as individuals struggle to integrate competing cultural values and norms, they may experience stress which makes them vulnerable to high-risk or maladaptive behaviors. Cultural norms theory suggests that acculturation can be viewed in terms of losing or retaining traditional norms that shape family relationships (Afaible-Munsuz & Brindis, 2006). Cultural norms theory describes acculturation as a process that impacts the values and norms regarding family cohesiveness, sexual activity, and gender roles. For example, cultural theory would postulate that Latinxs low on acculturation place increased value on virginity, family responsibility, and obedience. In contrast, high acculturation would lead to increased awareness of alternate roles.

These theoretical frameworks support the argument that there are context and individual differences in the way an individual acculturates. For example, an increasing number of studies have focused on investigating gender and Latinx subgroup-specific acculturation effects (Alvarez et al., 2017; Epstein et al., 1998; Karriker-Jaffe & Zemore, 2009). Doing so allows research to theoretically understand the context of their findings and provide increasingly detailed solutions to address health problems among Latinxs.

## IPV and Acculturation

Studies have reported a positive relationship between acculturation and IPV, such that adjusting to the culture of a host country increases the likelihood of becoming a victim of IPV (Jackson et al., 2015; Newcomb & Carmona, 2004; Perilla, Bakeman, & Norris, 1994). However, overall, the literature on acculturation and IPV has uncovered mixed findings. Research has shown that as acculturation to U.S. culture increases, the prevalence rate of IPV increases (Jackson et al., 2015; Perilla et al., 1994). Some attribute this to the idea

that individuals who are highly acculturated to the U.S. culture are more likely to report being a victim of IPV in comparison to less acculturated individuals. In contrast, research suggests that as Latinxs become more acculturated to the U.S. culture, they are more likely to be educated and less depressed, allowing them to adapt and excel in the dominant society, and affectively are more positive about themselves (Newcomb & Carmona, 2004). This research is uncorroborated by evidence for a negative relationship between acculturation and IPV, which suggests that the more one retain their culture of origin, the more likely one is to experience IPV (Frias & Angel, 2012; Gonzalez-Guarda, Peragallo, Urrutia, Vasquez, & Mitrani, 2008). These mixed findings hamper the ability to translate fundamental research into community and medical practice.

## The Present Study

Several qualitative reviews have paved the way for a quantitative review of acculturation and the effect it has on IPV among Latinxs (Cummings, Gonzalez-Guarda, & Sandoval, 2013; Klevens, 2007). The objective of this study was to conduct a quantitative review to assess the strength of the relationship between acculturation and IPV victimization among Latinxs. Our review includes studies that reported the direct relationship between acculturation and IPV victimization. Furthermore, we investigated the extent to which gender and acculturation measure served as a moderating factor which differentially described the relationship between acculturation and IPV victimization.

## Method

### Search Strategy

The inclusion and exclusion criteria followed the preferred reporting items for systematic reviews and meta-analyses (PRISMA) checklist. A description of the systematic review criteria is detailed below.

**Literature search.** We conducted a literature search in Criminal Justice Abstracts, MEDLINE/PubMed, PsycARTICLES, Psychology and Behavioral Sciences Collection, PsycINFO, Web of Science, Google Scholar<sup>®</sup>, Science Direct from the time period of 1976 through March 31, 2017, to produce a preliminary database. The year 1976 was utilized as the cutoff year for two primary reasons. First, Berry's model of acculturation was formally published in 1980, which led to a new wave of acculturation research. Second, this cutoff is consistent with previous research (Wallace et al., 2010).

The key terms searched were (intimate partner violence OR psychological violence OR physical violence OR sexual violence) AND (Latin\* OR Hispanic) AND (acculturation) NOT (children OR adolescents OR Asians). These search terms formed a foundation for the compilation of the database, which led to the thorough review of terms, titles, abstracts, text, and references of all relevant articles to ensure we included as many relevant articles as possible. Furthermore, we reviewed

reference sections to extract additional studies for our meta-analysis that our search terms might have potentially missed. Finally, unpublished studies were sought by using ProQuest Dissertations and theses databases.

**Type of study designs.** Our review included, but was not limited to, national surveys, cross-sectional surveys, clinical trials, and longitudinal surveys. All longitudinal surveys and clinical trials were evaluated but only baseline data were included in this review. Studies were eligible for inclusion if they reported the direct relationship and measure of effect size between acculturation and IPV victimization with Latinx and/or Hispanics in the United States.

**Type of participants.** To be included in this analysis, studies must have assessed acculturation and IPV victimization with Latinx and/or Hispanics (over the age of 18). Participants of the following subgroups were eligible for inclusion: Mexican American, Puerto-Rican, Cuban, Salvadoran, Guatemalan, Central/South American, other Latin countries, or an immigrant of any of these groups. It is important to note that Asians were particularly excluded from our search terms to facilitate the search because three studies were retrieved with this specific population during the pre-search. No other studies addressed a specific ethnic group (i.e., European, African) with such frequency.

**Types of acculturation measures.** The meta-analysis included (a) any acculturation measure and (b) studies that used language, nativity, and time spent in the United States as proxies to measure acculturation. In addition, any variation of the acculturation measures mentioned above (e.g., adaptations to a different Latinx subgroup or shortening the scale) were included.

For studies that reported more than one measure of acculturation, we selected the measure that has been well-established (reliability and validity). Some examples of well-established acculturation scales are the ARSMA, ARSMA-II, the Bi-dimensional Acculturation Scale for Hispanics, and the Short Acculturation Scale for Hispanics. For studies that reported Latinx orientation ( $n = 4$ ) and American orientation, only the latter was used. For detailed information regarding the measures of each study, see Table 1.

**Type of outcome measures.** Our main interest was to evaluate the research that reported male-to-female violence as reported by the female partner and female-to-male violence as reported by the male partner. Consistent with Saltzman and colleagues (1999), we defined intimate partner as a person's current or former spouse or nonmarital partner (e.g., boyfriend, girlfriend, or dating partner) and a victim as a person who is the target of violence or abuse. Violence was defined as any form of sexual, physical, emotional, and psychological partner aggression. We limited violence to these forms because they are investigated and referenced in the IPV literature most frequently. Studies that assessed only attitudes and perceptions of IPV were also excluded from this review. Furthermore, the studies included in

this meta-analysis were comprised of individual and couple reports of male-to-female, female-to-male, and bilateral partner violence.

Most studies reported one cumulative effect of IPV (the summative effect of various forms of IPV, such as sexual, physical, and emotional) and others ( $n = 4$ ) reported up to four individual forms of IPV (i.e., physical, sexual, stalking, and threat). Given that most studies reported a cumulative score of aggression, we had insufficient data to analyze each form of IPV. For the three studies that reported individual scores for physical, sexual, and psychological violence, we computed the average correlation of all the effects.

### *Coding of Articles Selected for Inclusion*

Two of the authors and two trained coders coded all studies identified as eligible at the final screening stage using a data extraction instrument developed by the research team. The coding instrument used for this systematic review is comprised of seven sections:

1. Quoted text from the original paper indicating the prediction of interest;
2. Study design: for example, cross-sectional;
3. Key statistical effect: for example, difference of means, two simple effects, and so on;
4. Type of acculturation measure: for example, ARSMA;
5. Type of IPV measure: Conflict Tactics Scale, Lifetime Trauma and Victimization History;
6. Sample descriptors: mean age, income, education, gender;
7. Result: that is,  $t$  test,  $\chi^2$ , correlation, and so on;
8. Quoted text from the original paper with statistical results.

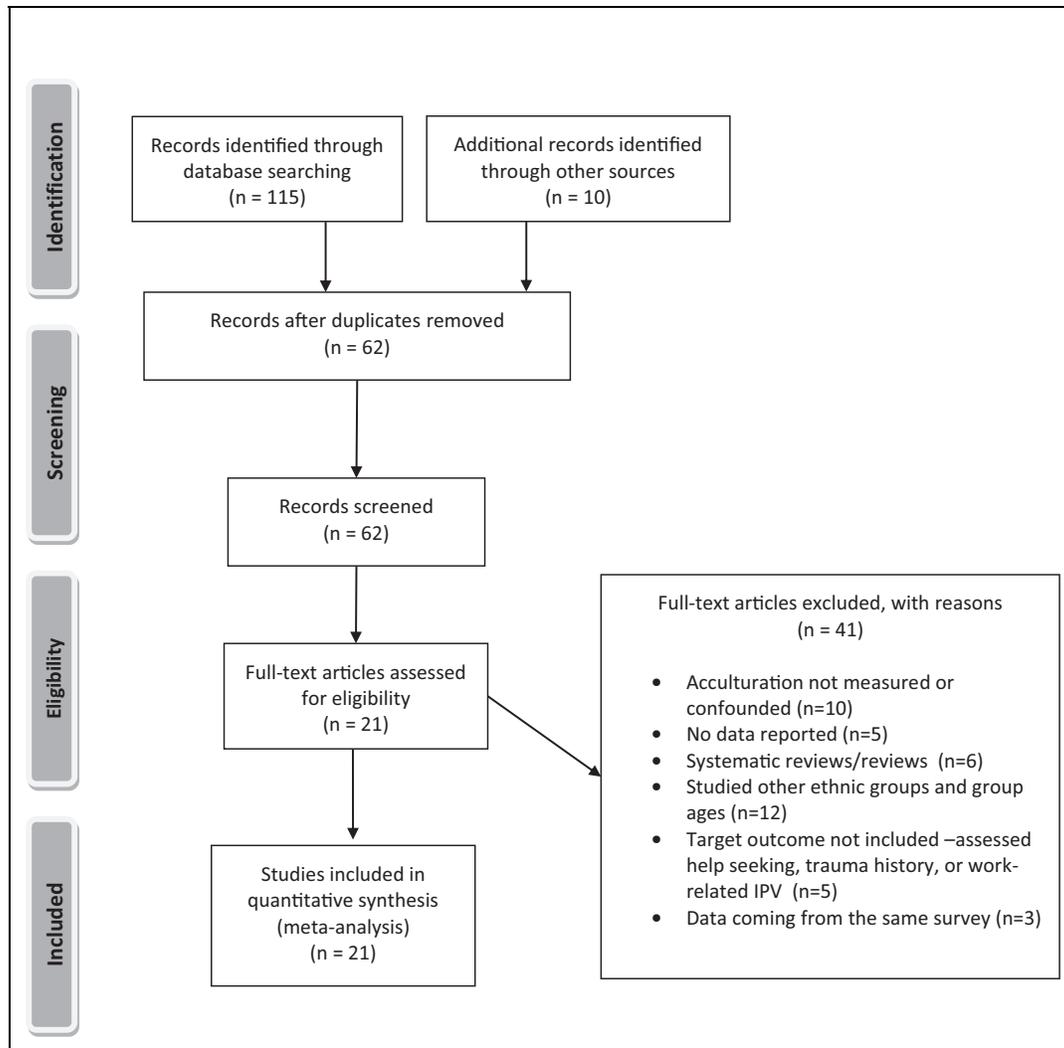
The initial search generated a total of 125 potential studies. Only 62 studies remained once duplicates were removed. The studies were first coded for prediction of interest, type of acculturation measure, type of IPV measure, descriptors, and results to provide information about the content of the studies. Second, the effect size data were transferred to the data extraction document to assist the coders in organizing the data and in identifying any gaps in the data. Third, the data extraction document was used to gather information pertaining to relationship of interest. We conducted a round table discussion among all authors to review articles that generated any ambiguity to make a final decision regarding inclusion or exclusion.

Once all articles were assessed for eligibility by all coders, only 21 studies remained to be included in the analyses. The flow diagram presented in Figure 1 depicts the flow of information through the different phases of the present review by mapping out the number of records identified, included and excluded, and the reasons for exclusions. Furthermore, Table 1 provides demographic information regarding the studies that remained to be included in the analyses.

**Table 1.** Study Demographics by Acculturation and IPV Measures.

Author/Year	Ethnicity	Sex	Acculturation Measure	IPV Measure
1. Moreno et al. (2011)	Puerto Rican	Females ( <i>N</i> = 1,003)	Language and nativity	Revised Conflict Tactics Scale
2. Hinojosa (2011)	Hispanic	Females ( <i>N</i> = 508)	ARSMA II	Revised Conflict Tactics Scale
3. Vera (2015)	Hispanic (Mexican, Puerto Rican, Cuban, Salvadoran, Dominican, Guatemalan, Colombian, Honduran, Ecuadorian, or Peruvian)	Males and females ( <i>N</i> = 116)	SASH	Revised Conflict Tactics Scale
4. Cunradi (2009)	Hispanics	Males ( <i>N</i> = 1,147) Females ( <i>N</i> = 1,399)	Language	Two items measuring Physical IPV
5. Jackson et al. (2015)	Mexican American	Females ( <i>N</i> = 42)	ARSMA II	Pregnancy Risk Assessment Monitoring System
6. Caetano et al. (2007)	Hispanic	Males ( <i>N</i> = 342) Females ( <i>N</i> = 342)	Caetano 1987	Revised Conflict Tactics Scale
7. Frías and Angel (2012)	Mexican American	Females (United States <i>N</i> = 401; foreign, <i>N</i> = 153)	Language	Revised Conflict Tactics Scale
8. Sabina et al. (2015)	Latinas	Females ( <i>N</i> = 1,971)	ARSMA II	Lifetime Trauma and Victimization History
9. Nava et al. (2014)	Hispanic (some non-Latinos)	Females ( <i>N</i> = 104)	Acculturation Scale for Hispanics	Severity of Violence Against Women Scale
10. González-Guarda et al. (2008)	Latina/Hispanic	Females ( <i>N</i> = 80)	Bidimensional Acculturation Scale	Items from the partner table and the violence assessment questionnaire
11. Martin and Garcia (2011)	Latina/Hispanic	Females ( <i>N</i> = 307)	ARSMA II	Physical, sexual, and emotional abuse
12. Millett, Seay, and Kohl (2015)	Hispanic	Females ( <i>N</i> = 211)	Language and length of stay in the United States	Conflict Tactics Scale
13. Caetano et al. (2000)	Hispanic	Males ( <i>N</i> = 527) Females ( <i>N</i> = 527)	Caetano 1987	Revised Conflict Tactics Scale
14. Harris, Firestone, and Vega (2005)	Mexican Origin	Females (United States, <i>N</i> = 350; foreign <i>N</i> = 647)	Combination of language, time spent in the United States, language of interview	Not specified
15. Garcia, Hurwitz, and Kraus (2005)	Hispanic (Mexican, Central American, Caribbean)	Females ( <i>N</i> = 459)	ARSMA II	Castro, García, Ruíz, and Peek-Asa, (2006)
16. Jasinski (1998)	Hispanic (Mexican, Mexican American, Puerto Rican, and Cuban)	Males ( <i>N</i> = 392) Females ( <i>N</i> = 743)	Language, nativity, and time spent in the United States	Conflict Tactics Scale
17. Newcomb and Carmona (2004)	Latinas (Mexican, Mexican American, Puerto Rican, Central American, and South American)	Females ( <i>N</i> = 113)	Cuellar 1980	Conflict Tactics Scale
18. Denham, Frasier, Hooten, Belton, Newton, Gonzalez, and Campbell (2007)	Latinas (Mexican, Mexican American, Puerto Rican, Central American, and South American)	Females ( <i>N</i> = 87)	Marin 1987	Conflict Tactics Scale
19. Lown and Vega (2001)	Mexican American	Females ( <i>N</i> = 127)	Nativity (birthplace)	Abuse Assessment Screen
20. Perilla et al. (1994)	Latinas	Females ( <i>N</i> = 90)	Bicultural Involvement Questionnaire	Index of Spouse Abuse
21. Kantor, Jasinski, and Aldarondo (1994)	Hispanic (Puerto Rican, Mexican, and Cuban)	Females ( <i>N</i> = 609)	Language questionnaire	Conflict Tactics Scale

Note. ARSMA II = Acculturation Rating Scale for Mexican Americans II; SASH = Short Acculturation Scale for Hispanics; IPV = intimate partner violence.



**Figure 1.** Preferred reporting items for systematic reviews and meta-analyses flow diagram of application of inclusion criteria. This figure depicts a sequence of decisions about study inclusion criteria.

### Statistical Analyses

Pearson product moment correlations were the most common effect size reported within the studies that were identified in the literature. When alternative effect size indices were reported, we converted them into correlations in order to calculate a weighted average correlation (Borenstein, Hedges, Higgins, & Rothstein, 2009). As recommended by Lipsey and Wilson (2001), correlation coefficients were transformed into Fisher's  $Z$ s and then the  $Z$ -transformed correlations were transformed back into Pearson product correlations after applying the meta-analytic techniques. A fixed effects model (FEM) and a random effects model (REM) were employed. Heterogeneity was assessed within the FEM to determine whether the samples estimate the same underlying population. Subsequently, the REM was employed because the REM is considered to be a more conservative approach for dealing with heterogeneity (Kisamore & Brannick, 2008). Comprehensive Meta-Analysis Version 2 (Biostat, Englewood, NJ) was used to

conduct the trim and fill algorithm (Duval & Tweedie, 2000), which imputes effect size estimates for a projected number of missing studies in order to provide an unbiased effect size estimate. In addition, publication bias was assessed using the Classic fail-safe  $N$ , which is a test that estimates the number of studies that would be needed to nullify a significant effect (Rosenthal, 1979).

### Results

Twenty-one studies yielded 27 independent effect sizes on data collected from 12,798 participants. Table 1 provides detailed information regarding the demographics of all studies included in the meta-analyses. Study sample sizes ranged from 42 to 1,971 participants. Across the 27 independent effects sizes, correlations ranged from  $-.31$  to  $.71$  (see Figure 2). The FEM yielded a weighted average correlation of  $.11$  (95% confidence interval [CI] =  $[.09, .12]$ ). The heterogeneity test indicated that one or more of the 27 effect sizes may not represent the same

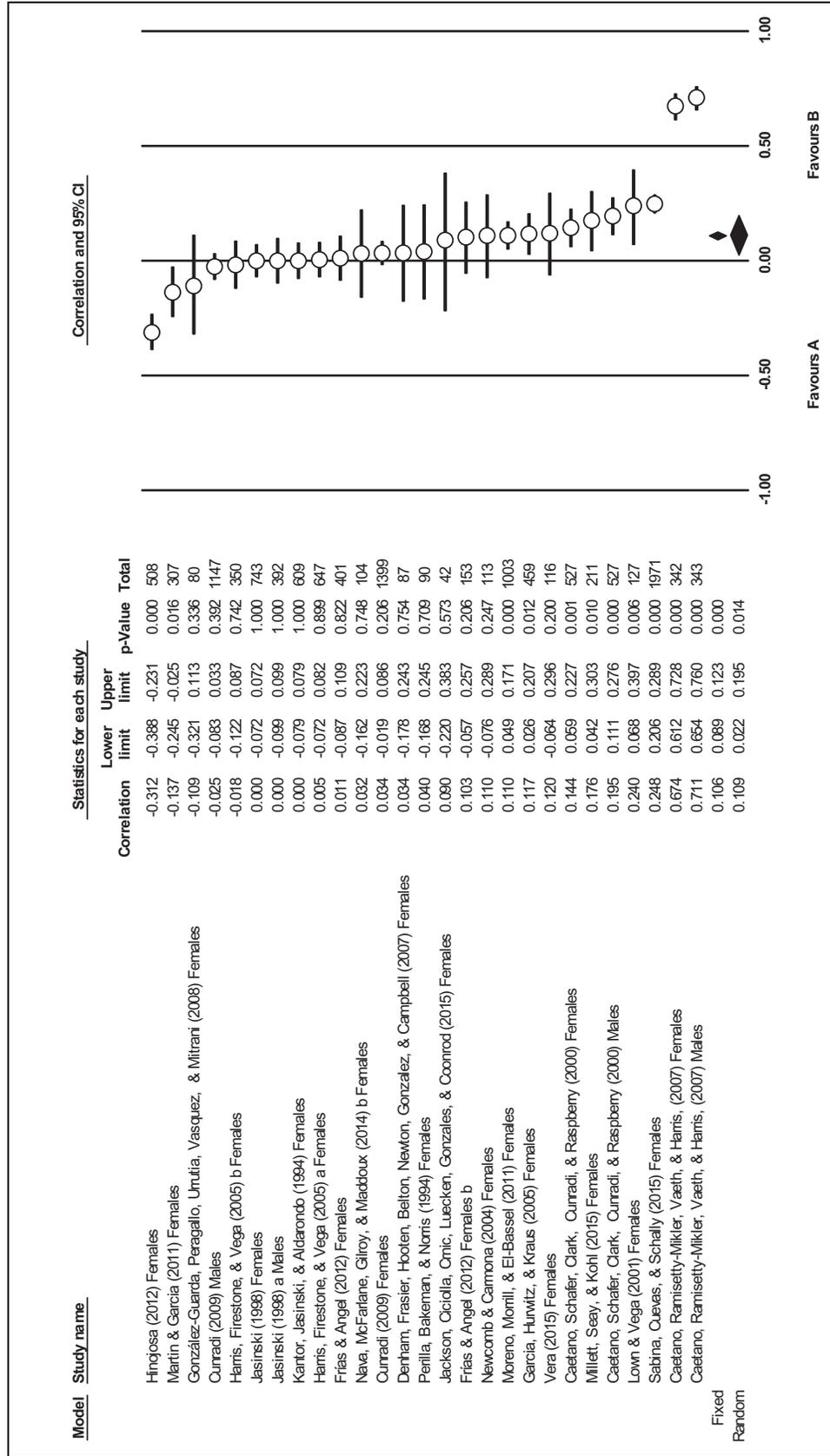


Figure 2. Forest plot of female acculturation and intimate partner violence (n = 27).

underlying population ( $Q = 610.03, p < .001, I^2 = 95.74$ ) and thus an REM was conducted. The REM yielded a weighted average correlation of .11 (95% CI [.02, .20]).

### Subgroup Meta-Analysis by Gender

A subgroup analysis was used in order to examine the effects of gender. The male group included 4 effect sizes, while the female group included 22 effect sizes. The FEM yielded weighted average correlations of .16 (95% CI [.12, .20]) and .09 (95% CI [.07, .11]), for males and females, respectively. Heterogeneity was detected in the male subgroup ( $Q = 34.98, p < .001, I^2 = 91.42$ ) and the female subgroup ( $Q = 1,223.57, p < .001, I^2 = 98.328$ ). The REM yielded a weighted average correlation of .26 (95% CI [-.11, .56]) for males. For females, the REM yielded a weighted average correlation of .08 (95% CI [-.01, .17]).

### Subgroup Meta-Analysis by Acculturation Measure

An additional subgroup analysis examined the effects of using different scales to measure acculturation. The FEM yielded weighted average correlations of .11 (95% CI [.07, .14]) for the ARSMA ( $n = 5$ ) and .41 (95% CI [.37, .45]) for the Caetano (1987) scale ( $n = 4$ ). The language proxies ( $n = 12$ ) yielded weighted average correlations of .03 (95% CI [.007, .05]), and .05 (95% CI [-.04, .13]) for the “other” scales ( $n = 6$ ). Homogeneity was not detected within each of the subgroups: ARSMA, Caetano (1987), language proxies, and other ( $Q = 153.79, p = .001, I^2 = 97.40$ ;  $Q = 705.18, p < .001, I^2 = 99.58$ ;  $Q = 25.96, p = .007, I^2 = 57.63$ ;  $Q = 15.20, p = .01, I^2 = 67.10$ , respectively). The REM yielded weighted average correlations of -.003 (95% CI [-.25, .25]) for the ARSMA, .47 (95% CI [.13, .71]) for the Caetano (1987) scale, .04 (95% CI [-.001, .07]) for the language proxies, and .05 (95% CI [-.04, .13]) for “other” acculturation measures not mentioned above.

The trim and fill procedure was applied under the FEM and REM to assess publication bias. Twelve studies were trimmed and filled in the FEM and the imputed effect size was larger than the original .21 (95% CI [.20, .22]). The results of the trim and fill procedure under the REM suggest that 10 studies were trimmed and filled and the imputed effect size was also larger than the original .21 (95% CI [.13, .29]). The results of the Classic fail-safe  $N$  test estimated that 818 missing studies with an effect size equal to 0 would be needed to increase the  $p$  value to above .05. The trim and fill procedure yielded an effect that was larger than the original effect size, however, the results of the Classic fail-safe  $N$  test indicate that that publication bias was not present.

## Discussion

Our review assessed the utility of acculturation as a predictor of IPV (physical, sexual, and psychological) among Latinxs and included male-to female and female-to male violence. Results revealed a significant positive correlation between acculturation

to the United States and IPV of .11, suggesting that higher acculturation to U.S. culture is associated with increased self-reported intimate partner victimization.

A novel component of the present study is the analysis of the association between acculturation and IPV by acculturation scales such that the strength of the correlation between acculturation and IPV differed by scales and ranged from -.003 to .47. The results revealed that the Caetano Acculturation items (Caetano, 1987) yielded the strongest correlation and the ARSMA produced the weakest. Our meta-analysis uncovered differences in the strength of the relationship between acculturation and IPV as a function of measurement. These findings are consistent with previous research and contribute to our understanding of the construct of acculturation, such that this meta-analysis provides further evidence for the inconsistency of acculturation as a factor that significantly impacts health across domains (Alvarez et al., 2017). These results provide a potential explanation for the mixed findings in the literature as there are over 26 measures of acculturation. Our results suggest that different measures might produce dissimilar, noncomparable effects (Wallace et al., 2010). Although our meta-analysis provides some supporting evidence for these conclusions, future studies should focus on expanding these analyses to other health outcomes that disproportionately affect Latinx.

Among females, the meta-analysis results yielded a small correlation of .08 between self-reported acculturation and IPV. These results suggest that as females acculturate to the culture in the United States, the likelihood of becoming a victim or experiencing IPV increases, though that effect is very small. In comparison, among males, our results yielded a moderate correlation of .26 between self-reported acculturation and IPV victimization. As males acculturate to U.S. culture, the likelihood of becoming a victim of IPV increases. These results should be treated with caution, as the research is limited and the sample for this analysis was small ( $n = 4$ ). A limitation of the gender subgroup analysis is that most studies sampled individuals rather than couples. Only three studies recruited couples (Caetano et al., 2004, 2000; Cunradi, 2009). The studies that recruited couples reported both male-to-female and female-to-male from both the male and female partners. Due to relatively low sample size, no additional analyses were conducted. Future research should focus on exploring these effects to better understand how acculturation differs by male-to-female and female-to-male partner violence.

### Limitations

One limitation of our analysis of acculturation measures is that it did not account for measure dimensionality. For the studies that reported two subscales (American and Latinx), only the dimension assessing acculturation to the United States was extracted and included, thus our results refer to acculturation to mainstream American culture. However, in our sample, only six studies utilized a bidimensional measure of acculturation, and two treated the measure as unidimensional; thus, the final sample was too small to assess dimensionality effects. As

acculturation continues to face critical scrutiny, we understand the limitations of our research and encourage researchers to conduct a quantitative assessment of the effect of acculturation as measured through bidimensional scales.

## Conclusion

This meta-analysis demonstrates low ( $r = .11$ ) correlations between acculturation to the U.S. culture and IPV. The results are consistent with another meta-analysis on acculturation and alcohol use that demonstrated a similarly low ( $r = .16$ ) correlation (Alvarez et al., 2017). Thus, across two distinct health domains, acculturation was a poor predictor of the health outcome. Moreover, while the Caetano scale was the best predictor in this meta-analysis, that same scale was a poor predictor for alcohol use. For alcohol use, the ARMSA was the best predictor, whereas for IPV, the correlation was near 0. Together, the two meta-analyses suggest that as currently measured, acculturation is not a great predictor of health outcomes for Latinx populations. Further research needs to conceptualize when acculturation measures are appropriate and which measures are most effective. For instance, researchers often use acculturation measures for native U.S. Latinx populations, but the presumption of acculturation is to identify psychological changes of people as they acculturate to a new culture.

The results presented in this meta-analysis are also consistent within the IPV literature. Moore et al. (2008) conducted a meta-analysis on the effect of drug abuse on aggression between intimate partners. Their results revealed an effect of drug abuse on IPV, such that increases in drug use and drug-related problems were significantly associated with increases in aggression between intimate partners ( $d = .27$ ). These findings are consistent and comparable to the findings of the meta-analysis presented in this article as both meta-analyses show that *overall* acculturation and drug abuse are small causal factors that predict IPV.

To consolidate these findings, we argue that future research should clearly specify the population of interest and consider the role of gender and specific cultural factors (i.e., gender norms, familism, resilience) when investigating health outcomes. Future studies should give special consideration to patriarchal ideologies as research has shown that violence attitudes ( $d = .27$ ), attitudes toward women ( $d = .54$ ), and androgyny ( $d = -.70$ ) are stronger predictors of spousal violence (Sugarman & Frankel, 1996). Lastly, future research should take into consideration how independent factors differentially predict the most common types of IPV reported in the literature (physical, psychological, and sexual), given that they are conceptually different.

The present study makes a valuable contribution by providing further evidence of the predictive utility of acculturation in health outcomes among minorities. Our results yielded three important findings: (1) the overall effect of acculturation on IPV is relatively small, (2) acculturation has different amounts of influence on male-to-female and female-to-male partner violence, and (3) the strength of the correlation between acculturation and IPV differs by scale. Lastly, given that we found heterogeneity in our overall analysis, we believe there are other

factors that impact the relationship between acculturation and IPV, such as finances, jealousy, gender roles, and substance use. All these factors warrant attention and should be considered as potential moderators in future research.

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