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## The association between immigrant generational status, child maltreatment history and intimate partner violence (IPV): evidence from a nationally representative survey

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### Abstract

**Purpose**—The extent to which immigrant-specific factors influence the intergenerational transmission of family violence is unknown. The objectives of this paper are to examine the associations between immigrant generational status (IGS), child maltreatment (CM), intimate partner violence (IPV) and acculturation (i.e., the extent to which an individual adopts the values, language and attitudes of a new culture).

**Methods**—The sample was drawn from wave two of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC;  $n = 34,653$ ), a nationally representative survey of United States (US) residents aged 20 years and older. Logistic regression was used to estimate the associations between IGS, CM history, IPV, and acculturation.

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**Results**—Compared to 3rd generation (or later) respondents, 1st generation immigrants were less likely to report a history of sexual (AOR = 0.74, CI<sub>0.95</sub> = 0.62, 0.90) and emotional abuse (AOR = 0.69, CI<sub>0.95</sub> = 0.55, 0.87), but were more likely to report physical neglect (AOR = 1.30, CI<sub>0.95</sub> = 1.11, 1.52). After adjusting for covariates, IGS was not associated with IPV among respondents with or without a CM history. Among those without a CM history, highly acculturated 1st generation immigrants (AOR = 1.07, CI<sub>0.95</sub> = 1.01, 1.13) were more likely to report perpetrating IPV, with highly acculturated 3rd generation respondents having lower odds of reporting IPV perpetration (AOR = 0.93, CI<sub>0.95</sub> = 0.88–1.00).

**Conclusion**—IGS and acculturation are important factors in CM and IPV. Longitudinal studies are needed to clarify the influence of IGS, recency of immigration, acculturation and acculturative stress on the experiences and relationship between CM and IPV.

### Keywords

Intimate partner violence; Child maltreatment history; Immigrant status; Acculturation; Gender differences

### Introduction

Intimate partner violence (IPV) and child maltreatment (CM) are global health concerns that are associated with negative health outcomes [1, 2]. In the United States (US), the prevalence of CM is approximately 30 % [3]. A representative sample of US residents also indicated that 15 % of women and 20 % of men reported IPV in their current marital relationship [4]. In addition, economic analyses demonstrate that CM and IPV place a significant burden on the health-care system, exceeding billions of dollars in annual health-care costs [5, 6]. Thus, investigating the extent to which various groups experience CM and IPV is an important and precursory step to developing interventions that can address related negative sequelae.

Research has indicated that CM is associated with IPV perpetration and victimization in adulthood [7, 8]. There are several possible explanations for this relationship. Social learning models suggest that when children are exposed to CM, they may perceive aggression as an appropriate response to interpersonal stressors over the life-course [9]. Ecological models suggest greater prevalence of both CM and IPV in families and neighborhoods characterized by cumulative and persistent social and economic disadvantage [10]. However, to date, few studies have examined the extent to which the utility of these models apply within and across various population groups and explain the relationship between CM and IPV across population groups, including immigrants.

Literature cites several common sources of risk for CM and IPV among immigrants, including the loss of social and familial ties when leaving the country of origin, financial challenges due to limited recognition of credentials in the new country, language difficulties, and shifts in culture-specific expectations around gender roles, discipline, and parenting practices [11–14]. However, results from representative studies investigating CM and IPV risk among immigrants to the US are equivocal. For example, some suggest that prevalence of CM and IPV is lower among immigrants than the US-born population [15–17], with other

literature suggesting that prevalence varies with the type of maltreatment investigated [18]. Additionally, IPV estimates have been shown to vary according to an immigrant individual's length of time in the US [19] and one's pre-migration exposure to violence [20]. Third, to our knowledge, there has been no representative study investigating the relationship between immigrant generational status (IGS) and IPV among individuals with and without CM, or to what extent these experiences differ by gender and degree of acculturation. This is particularly concerning given that findings pertaining to gender differences in both CM and IPV victimization and perpetration among immigrants are inconsistent and population estimates for CM among immigrants have largely relied on Child Protective Services reports [15, 16, 21–23]. Finally, the investigation about potential influence of the process of acculturation—that is, the extent to which an immigrant individual adopts the values and attitudes of a new culture—is an important one, as one's level of acculturation has been linked to other morbidities, including depression and anxiety [24, 25].

## Present study

In view of the limited knowledge about the association between IGS, CM, gender, and IPV, we have used nationally representative data to examine whether: (1) IGS is associated with CM and whether gender moderates this relationship; (2) IGS is associated with reporting IPV victimization and/or perpetration in adulthood among immigrants with and without CM and if these associations are moderated by gender; and finally (3) the extent to which acculturation to the US moderates the association between IGS and IPV victimization and/or perpetration among immigrants with and without CM.

## Methods

Data for this study come from Wave 2 of the National Epidemiologic Survey of Alcohol and Related Conditions (NESARC), a longitudinal population-based survey of US residents aged 20 years and older which collected the second wave of data in 2004/2005 (see Grant and Kaplan [26] for a description of the sample). Data were gathered using computer-assisted face-to-face interviews ( $n = 34,653$ ). We analyzed Wave 2 data given that questions regarding IPV and CM were only asked at this time point. Analysis weights were applied to generate estimates representative of the adult American population and Taylor Series Linearization was performed to account for the complex sampling design [27, 28].

## Measures

### Outcome variables

**Childhood maltreatment:** Thirteen questions, adapted from the CTQ [29] as well as the CTS [30], assessed participant experiences of CM. With the exception of physical neglect, respondents were asked to classify their experiences on a five-point scale (never, almost never, sometimes, fairly often, or very often). For physical neglect, items were reverse coded and the original response options were: never true, rarely true, sometimes true, often true and very often true.

Emotional abuse was assessed through three items: “How often did a parent or other adult swear at, insult, or say hurtful things to you?”, “How often did a parent or other adult

threaten to hit or throw something at you?” and “How often did a parent or other adult act in any other way that made you afraid you would be physically hurt or injured?” Respondents were classified as having experienced emotional abuse if they responded with fairly often or very often to any of these items.

Two items assessed physical abuse in childhood, including: “How often did a parent or other adult living in your home push, grab, shove, slap or hit you?” and “How often did a parent or other adult living in your home hit you so hard that you had marks or bruises or were injured?” Respondents were coded as having experienced physical abuse if they answered sometimes, fairly often, or very often to either item.

Sexual abuse in childhood was assessed through four items: “How often did an adult or other person touch or fondle you in a sexual way when you did not want them to or when you were too young to know what was happening?”, “How often did an adult or other person have you touch their body in a sexual way when you did not want them to or when you were too young to know what was happening?”, “How often did an adult or other person attempt intercourse when you did not want them to or when you were too young to know what was happening?” and “How often did an adult or other person actually have sexual intercourse with you when you did not want them to or when you were too young to know what was happening?” Respondents were classified as having experienced sexual abuse if they responded anything other than never to any of these items.

Finally, physical neglect was assessed through four items, including: “Before the age of 10, how often were you left alone or unsupervised?”, “Before the age of 18, how often did a parent/caregiver ignore or fail to get you treatment when you were sick?”, “Before the age of 18, how often did a parent/caregiver make you go hungry or not prepare regular meals?” and “Before age 18, how often did you go without the things you needed because a parent/caregiver spent the money on themselves?” Respondents were classified as having experienced physical neglect if they responded with anything other than never to any of these four items [31].

A binary ‘any maltreatment’ variable was derived by combining each of the four types of maltreatment into one variable, with ‘1’ indicating some form of maltreatment history. The CTQ and CTS have been extensively used and validated with non-Caucasian and non-English speaking populations [32–36].

**Intimate partner violence perpetration and victimization:** Physical/sexual IPV was measured using a short version of the CTS [37]. Respondents were asked how often they and their partners perpetrated the following six acts over the past 12 months: (1) push, grab, or shove their partner; (2) slap, kick, bite or hit their partner; (3) threaten their partner with a weapon like a knife or gun; (4) cut or bruise their partner; (5) force their partner to have sex; and (6) injure their partner enough for medical care. Response options were never, once, 2 or 3 times, once a month, more than once a month, or unknown. A dichotomous (yes or no) IPV variable was computed with any responses other than never indicating IPV had occurred. Only those respondents who identified being married, dating or involved in a

romantic relationship within the past 12 months were asked questions pertaining to IPV ( $n = 25,379$ ).

**Independent variables**—Gender was self-reported as male/female. IGS was derived from three questions focusing on respondents' and their parents' place of birth. A three-category nominal variable was created to classify respondents' IGS: 1st generation (i.e., born outside of the US), 2nd generation (i.e., born in the US to at least one foreign-born parent), or 3rd generation (or later) (i.e., US-born to US-born parents), which served as the reference group in all analyses. We chose these categories given that previous work has found important differences in the socio-economic and health status of 1st, 2nd and 3rd generation or later individuals in the US; with health and social status varying across generational status and length of time in the US [38–40]. Given this information, it is plausible to question whether IGS status may be related to the prevalence of CM and/or IPV in immigrant populations. In addition, classifying respondents as 1st, 2nd or 3rd generation (or later) respondents allows the opportunity to explore potential differences in the experiences of CM and IPV among individuals who were born outside of US, to those who were born in the US to an immigrant family, and to those who have lived in multi-generational US families. A total of 620 respondents were excluded due to missing data on their own or their parents' place of birth.

**Moderator**—Our analyses tested whether acculturation moderated the association between IGS and IPV [41]. Informed by the work by Chiriboga [42] we computed an acculturation index by summing 11 items from the NESARC that focused on respondents' language and social-interaction preferences. All 11 of items can be found in ESM Appendix 1. Response options for all 11 items were on a five-point scale that represented the participant's preference for their culture of origin to the host (i.e., US) culture. Higher summed scores indicate greater acculturation to US culture, with possible scores ranging from 11–55.

**Covariates**—Because past research has demonstrated significant relationships between common mental disorders and both CM and IPV [31, 43], we adjusted for past-year presence of common mental, alcohol and substance use disorders, including illicit drug use disorder, alcohol use disorder, post-traumatic stress disorder, panic disorder, agoraphobia, social anxiety disorder, specific phobia, generalized anxiety disorder, major depression, dysthymia, mania and hypomania. These disorders were assessed using the Alcohol Use Disorder and Associated Disabilities Interview Schedule—Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition (AUDADIS-IV; [44]). We computed binary 'any past-year substance use disorder' and 'any past-year mood or anxiety disorder' variables.

Given that previous literature has shown an association between the experience of racial/ethnic discrimination and IPV [45], we adjusted for these experiences in our IPV models. Racial/ethnic discrimination in the past year was assessed with 13 items, for example "during the past year, how often were you called a racist name because of your race/ethnicity?" All items were scored on a five-point scale from 'never' to 'very often.' Responses were re-coded into a binary 'any discrimination' variable such that if a

respondent answered anything other than ‘never,’ to any item, they were classified as having been a victim of racial/ethnic discrimination.

The socio-demographic variables examined in the current analysis included age (years), race (White, Asian, Hispanic, Black, or American Indian/Alaska Native), education (less than high school, high school or equivalent, some college, completed associate, technical or bachelor’s degree or some graduate school or more), household income (\$0–\$19,999, \$20,000–\$34,999, \$35,000–\$59,999, or \$60,000 or more), and marital status (married/common-law, never married, or widowed/divorced/separated).

## Analysis

Multinomial logistic regression was used to estimate differences in our sample characteristics. We then ran a series of logistic regression models to estimate the associations between IGS, CM, IPV and acculturation. First, we estimated the association between IGS and CM while adjusting for age, gender, race, education, and household income. We then further adjusted our CM models for any past-year mental, alcohol or substance use disorder. Finally, to determine whether gender moderates the association between IGS and CM, we added a gender-by-IGS interaction term to the adjusted logistic regression models.

We then examined the association between IGS and IPV among respondents with and without CM. Initial models were adjusted for age, gender, race, education, marital status, and household income. We then adjusted for racial discrimination, and any past-year mental or substance use disorder. To account for the potential impact of ‘retaliatory’ violence, we adjusted for IPV victimization in all perpetrator models and vice versa. Third, we tested for an interaction effect between immigrant generational status and child maltreatment history on intimate partner violence outcomes; while adjusting for the previously mentioned covariates. Finally, to determine whether gender and acculturation moderates the association between IGS and IPV, we added IGS-by-gender and IGS-by-acculturation interaction terms to the adjusted IPV logistic regression models.

## Results

Among our sample, 14.8 % were 1st generation, 14.2 % were 2nd generation and 71.0 % were 3rd generation-or-later participants. The sample consisted of an equal proportion of males and females. Second and 3rd generation (or later) respondents were significantly older than 1st generation individuals, with an average age of 51.16 (se = 0.62), 48.14 (se = 0.17) and 45.33 (se = 0.41) years, respectively. The average length of time that 1st generation respondents had been living in the US at the time of data collection was 21.79 (se = 0.30) years. In addition, 1st generation respondents, on average, were significantly more likely to have a greater number of relatives living in their homes when completing the NESARC (1st Gen = 3.43 (se = 0.06); 2nd Gen = 2.68 (se = 0.04); 3rd Gen = 2.67 (se = 0.01)). Table 1 outlines the results of the multinomial logistic regression analyses examining differences in socio-demographic characteristics across IGS. Notably, compared to Whites, respondents identifying as Asian/Native Hawaiian/Other Pacific Islanders, Black or Hispanic were significantly more likely to identify as 1st generation immigrants. Finally, compared to 3rd

generation or later individuals, 1st and 2nd generation immigrants were significantly more likely to speak only non-English as a child.

Table 2 illustrates the prevalence of CM and the associations between IGS and CM. All significant IGS differences were between 1st and 3rd generation immigrants. Specifically, 1st generation immigrants were less likely than 3rd generation immigrants to report a history of sexual and emotional abuse and more likely to report a history of physical neglect. Stratified, post hoc analyses revealed that compared to males, 1st, 2nd and 3rd generation females were significantly more likely to report a history of sexual abuse (1st Gen: AOR = 2.13, CI<sub>0.95</sub> = 1.60, 2.85; 2nd Gen: AOR = 2.16, CI<sub>0.95</sub> = 1.60, 2.91; 3rd Gen: AOR = 3.32, CI<sub>0.95</sub> = 2.92, 3.77) and less likely to report a history of physical neglect (1st Gen: AOR = 0.67, CI<sub>0.95</sub> = 0.57, 0.78; 2nd Gen: AOR = 0.79, CI<sub>0.95</sub> = 0.59, 0.85; 3rd Gen: AOR = 0.82, CI<sub>0.95</sub> = 0.75, 0.88).

Tables 3, 4 and 5 examine our questions pertaining to the role of IGS, gender, and CM on IPV outcomes. Specifically, Table 3 shows a significant interaction effect between CM and IGS on IPV perpetration, even after adjusting for covariates. To unpack this interaction effect, we stratified our sample by CM. Tables 4 and 5 show the prevalence of IPV victimization and perpetration and the associations between IGS and our IPV types among respondents with and without CM. Among respondents with CM, no significant associations between IGS and IPV were found. In addition, neither gender nor acculturation modified the relationship between IGS and IPV among the CM group. For the non-maltreated subsample, no association between IGS and IPV was found following the adjustment for our covariates. However, a significant interaction for IGS by acculturation among respondents reporting a history of IPV perpetration was found. Post hoc analysis which stratified the subsample by IGS and examined the association between acculturation and IPV revealed that 1st generation immigrants who scored higher on the acculturation index were more likely to report IPV perpetration (AOR = 1.07, CI<sub>0.95</sub> = 1.01, 1.13), whereas 3rd generation immigrants who had high acculturation scores were less likely to report perpetrating IPV (AOR = 0.93, CI<sub>0.95</sub> = 0.88–1.00) after controlling for covariates.

## Discussion

Findings from this study are novel in several important ways. To our knowledge, this is the first study to use nationally representative population-based data to examine associations between IGS and various forms of CM. Second, we found a differential effect of IGS and gender on self-reported CM, and no association between IGS and IPV among those with and without CM. Third, acculturation was found to have differential effects on the association between IGS and IPV outcomes.

Consistent with previous literature (e.g. Perez-Fuentes, Olfson [46]), females were more likely to report a history of sexual abuse, irrespective of IGS. However, 1st to 3rd generation males were more likely to report a history of physical neglect. The latter finding is inconsistent with an earlier meta-analysis that found physical neglect to occur approximately in equal proportions for males and females [47]. Our work suggests that IGS may be a factor in the extent to which males and females experience childhood physical neglect. In fact, it is

possible that by not including IGS as a variable in their analyses, previous work included in the meta-analysis may have masked these IGS-by-gender differences.

Previous research suggests that being an immigrant may place individuals at greater risk for IPV [13, 48, 49]. However, in our study, being a 1st or 2nd generation immigrant did not influence the odds of perpetrating or being the victim of IPV. In addition, acculturation did not influence the association between IGS and IPV perpetration or victimization among individuals with CM. However, there was a significant interaction effect between IGS and CM on IPV perpetration. Among the non-maltreated group, greater acculturation was associated with greater odds of perpetrating IPV among 1st generation immigrants and lower odds of perpetrating IPV among 3rd generation or greater respondents. It is possible that within the non-maltreated group, our measure of acculturation may be tapping into aspects of ‘acculturative’ stress, which may be driving the higher odds for IPV perpetration among the 1st generation respondents. Work by Caetano, Ramisetty-Mikler [50] suggests that it is not just one’s level of acculturation which influences risk for perpetration, but rather, it is the distress that comes with acculturating to a new culture while simultaneously trying to retain ties to the culture-of-origin that may increase the odds of using violence as response to interpersonal conflict. Prospective, longitudinal surveys designed with adequate power to explain these mechanisms are needed before we can make any firm conclusions about the differential effect of acculturation and the stress associated with this process on IPV among immigrants with and without CM.

There are limitations inherent in the present study. The cross-sectional nature of the NESARC precludes the ability to control for the temporal sequencing of the study variables. However, the comprehensive nature of the dataset allowed for the ability to control for a number of well-known IPV and CM covariates, including an array of mental disorders, racial discrimination and socio-demographic factors. Second, CM and IPV responses were based on retrospective self-report. It is possible that some respondents may have under-reported these experiences. Third, the low prevalence of IPV prevented our ability to examine IPV rates across various ethnic groups. The present paper required respondents to self-report their own and their parents place of birth to be included in the analysis; therefore, the lower prevalence rates could be accounted for—to some extent—by this criteria. In addition, previous work in IPV tends to conflate 1st, 2nd and 3rd generation individuals into the same group, implying that these individuals are similar and making an assumption that IPV prevalence is equivalent across groups—this is clearly not the case. A third and important potential explanation for the lower prevalence rates found in our work is that under-reporting of victimization is likely to have occurred. Fear of reporting or being caught reporting IPV perpetration or victimization has been cited as a significant barrier to capturing accurate IPV prevalence results, as has the fact that not all cultural groups identify what the literature defines as IPV perpetration or victimization, as such [51]. A fourth limitation of our work is that our assessment of IPV was limited to physical/sexual abuse whereas higher prevalence rates found in other studies may have included other manifestations of IPV (i.e., emotional, psychological, spiritual). Finally, and despite the fact that NESARC interview materials were available in six languages, it is possible that a number of 1st and 2nd generation immigrants could have been excluded from this sample given an inability to speak or read one of the study languages or having lower literacy skills



[52]. In addition, there is a well-documented and persistent fear among immigrants of government and research enterprises, particularly in relation to the potential identification of an 'undocumented' migrant status and fear of discrimination. Future work would benefit from the consideration of the research design and ethics frameworks proposed by Hernandez and colleagues [52], especially given the complex and sensitive nature of family violence research.

Findings of this study have implications for policy and practice. Our findings suggest that 1st and 2nd generation immigrants have no greater odds of experiencing IPV than those who are 3rd generation or later Americans. However, first generation immigrants without CM and greater acculturation to the US have significantly greater odds of perpetrating IPV. This suggests that IPV prevention programs targeted towards 1st generation immigrants soon after the migratory experience and which support the healthy acculturation to the US within and external to interpersonal relationships, may assist in reducing the incidence and prevalence of IPV.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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### What is already known?

Immigrants experience CM and IPV

CM and IPV are associated

This study examines the link between CM, IPV and acculturation among a nationally representative survey of adults

What does this study add?

Compared to 3rd generation or later Americans, 1st and 2nd generation immigrants with and without child maltreatment do not have greater odds of perpetrating or being the victim of IPV

Acculturation has differential effects on IPV outcomes across immigrant generational status and among those with and without child maltreatment

**Table 1**

Differences in socio-demographic characteristics by immigrant generational status

Socio-demographic variable	1st generation vs. 2nd generation OR (95 % CI)	1st generation vs. 3rd generation OR (95 % CI)	2nd generation vs. 3rd generation OR (95 % CI)
Gender			
Male	1.00	1.00	1.00
Female	0.93 (0.85–1.03)	0.94 (0.86–1.02)	1.00 (0.92–1.10)
Age <sup>a</sup>			
20–29 years	1.00	1.00	1.00
30–44 years	1.71 (1.42–2.05)***	1.19 (1.05–1.36)**	0.70 (0.60–0.81)***
45–64 years	1.37 (1.11–1.68)**	0.82 (0.72–0.94)**	0.60 (0.51–0.70)***
65+ years	0.49 (0.39–0.62)***	0.69 (0.58–0.82)***	1.40 (1.16–1.68)***
Race/ethnicity			
White	1.00	1.00	1.00
Black	3.67 (2.65–5.08)***	2.48 (1.73–3.54)***	0.68 (0.56–0.82)***
American Indian/Alaska native	0.93 (0.37–2.33)	0.49 (0.22–1.09)***	0.52 (0.35–0.78)**
Asian/native Hawaiian/other Pacific islander	14.92 (10.90–20.44)***	198.66 (129.36–305.07)***	13.31 (9.80–18.08)***
Hispanic	7.40 (5.92–9.25)***	55.56 (42.76–72.20)***	7.51 (6.08–9.27)***
Household income			
\$0–19,999	1.00	1.00	1.00
\$20,000–34,999	1.06 (0.89–1.25)	1.02 (0.89–1.18)	0.97 (0.86–1.10)
\$35,000–59,999	1.17 (0.99–1.39)	0.85 (0.73–0.99)*	0.73 (0.65–0.81)***
\$60,000+	0.73 (0.59–0.89)**	0.64 (0.53–0.79)***	0.89 (0.79–1.00)*
Education			
Less than high school	1.00	1.00	1.00
High school or equivalent	0.37 (0.30–0.44)***	0.27 (0.23–0.32)***	0.74 (0.64–0.84)***
Some college	0.30 (0.24–0.37)***	0.24 (0.20–0.30)***	0.82 (0.70–0.95)**
Completed associate, technical or bachelor's degree	0.43 (0.36–0.52)***	0.31 (0.26–0.37)***	0.71 (0.62–0.82)***
Some graduate school or more	0.41 (0.33–0.51)***	0.37 (0.30–0.48)***	0.91 (0.78–1.08)
Spoke only non-english as a child			
No	1.00	1.00	1.00
Yes	26.66 (21.55–32.99)***	324.81 (235.29–448.39)***	12.18 (8.75–16.96)***
Marital Status			
Married/common-law	1.00	1.00	1.00
Widowed/separated/divorced	0.55 (0.48–0.63)***	0.66 (0.57–0.75)***	1.19 (1.08–1.31)***
Never married	0.65 (0.55–0.77)***	0.84 (0.73–0.95)**	1.29 (1.13–1.47)***

Table 1 represents the results from multinomial logistic regressions examining socio-demographic differences across immigrant generational status groups. As an example, compared to Whites, Black respondents were significantly more likely to identify as 1st generation immigrants

\*  
 $p < 0.05,$

\*\*  
 $p < 0.01,$

\*\*\*  
 $p < 0.001$

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**Table 2** Prevalence of a child maltreatment (CM) and association between immigrant generational status and CM

Maltreatment type	Immigrant generational status (IGS)	Prevalence of maltreatment, n (%)	AOR1 (95 % CI) <sup>a</sup>	AOR2 (95 % CI) <sup>b</sup>	Gender × IGS interaction OR (95 % CI)	Gender × IGS interaction AOR (95 % CI) <sup>b</sup>
Physical abuse	3rd Gen.	4,526 (17.8)	1.00	1.00	0.99 (0.89–1.10)	0.98 (0.89–1.09)
	2nd Gen.	849 (17.0)	0.96 (0.85–1.08)	0.98 (0.87–1.11)		
	1st Gen.	796 (14.8)	0.78 (0.66–0.93)**	0.86 (0.73–1.02)		
Sexual abuse	3rd Gen.	2,845 (10.9)	1.00	1.00	1.34 (1.15–1.55)***	1.33 (1.15–1.55)***
	2nd Gen.	490 (9.8)	0.91 (0.79–1.05)	0.93 (0.81–1.08)		
	1st Gen.	441 (7.3)	0.67 (0.56–0.81)***	0.74 (0.62–0.90)**		
Emotional abuse	3rd Gen.	2,176 (8.4)	1.00	1.00	0.98 (0.83–1.14)	0.98 (0.83–1.15)
	2nd Gen.	365 (7.1)	0.88 (0.75–1.03)	0.90 (0.77–1.06)		
	1st Gen.	305 (5.2)	0.61 (0.48–0.77)***	0.69 (0.55–0.87)**		
Physical neglect	3rd Gen.	5,825 (23.3)	1.00	1.00	1.13 (1.04–1.23)**	1.13 (1.03–1.23)**
	2nd Gen.	1,138 (22.9)	0.94 (0.85–1.05)	0.96 (0.87–1.07)		
	1st Gen.	1,454 (29.6)	1.19 (1.02–1.40)*	1.30 (1.11–1.52)**		
Any childhood maltreatment	3rd Gen.	9,284 (37.3)	1.00	1.00	1.16 (1.07–1.26)***	1.17 (1.07–1.27)***
	2nd Gen.	1,779 (35.7)	0.93 (0.85–1.02)	0.95 (0.87–1.04)		
	1st Gen.	1,947 (38.2)	0.98 (0.84–1.13)	1.08 (0.93–1.25)		

<sup>a</sup> Adjusted for age, gender, race, education, household income

<sup>b</sup> Adjusted for age, gender, race, education, household income, any past-year mood or anxiety disorder, and any past-year substance use disorder

\*  $p < 0.05$ ,

\*\*  $p < 0.01$ ,

\*\*\*  $p < 0.001$

**Table 3**

Testing for an interaction effect between immigrant generational status and child maltreatment history on intimate partner violence outcomes

	<b>Immigrant generational status × child maltreatment</b>	
	<b>AOR1 (95 % CI)<sup>a</sup></b>	<b>AOR2 (95 % CI)<sup>b</sup></b>
Intimate partner violence victimization	1.00 (0.81–1.24)	1.19 (0.93–1.53)
Intimate partner violence perpetration	0.80 (0.66–0.97) *	0.74 (0.59–0.92) **

<sup>a</sup> Adjusted for age, gender, race, education, household income, marital status

<sup>b</sup> Adjusted for age, gender, race, education, income, marital status, racial discrimination, mutual IPV, any past-year mood or anxiety disorder, and any past-year substance use disorder

\*  $p < 0.05$ ,

\*\*  $p < 0.01$ ,

\*\*\*  $p < 0.001$



Table 4

Prevalence of intimate partner violence (IPV) and association between immigrant generational status and IPV among respondents with child maltreatment

Immigrant generational status (IGS)	Prevalence of IPV, n (%)	AORI (95% CI) <sup>a</sup>	AOR2 (95% CI) <sup>b</sup>	Gender × IGS interaction AOR (95% CI) <sup>b</sup>	Acculturation × IGS interaction AOR (95% CI) <sup>b</sup>
IPV perpetration					
3rd Gen.	721 (8.3)	1.00	1.00	1.03 (0.76–1.40)	0.98 (0.96–1.00)
2nd Gen.	129 (7.9)	0.96 (0.71–1.29)	0.99 (0.69–1.43)		
1st Gen.	149 (9.5)	0.87 (0.66–1.17)	1.10 (0.75–1.60)		
IPV victimization					
3rd Gen.	714 (8.8)	1.00	1.00	0.98 (0.73–1.31)	1.00 (0.98–1.02)
2nd Gen.	124 (8.6)	0.95 (0.70–1.28)	0.98 (0.68–1.40)		
1st Gen.	145 (8.7)	0.75 (0.55–1.03)	0.80 (0.51–1.26)		

<sup>a</sup> Adjusted for age, gender, race, education, household income, marital status<sup>b</sup> Adjusted for age, gender, race, education, income, marital status, racial discrimination, mutual IPV, any past-year mood or anxiety disorder, and any past-year substance use disorder\*  $p < 0.05$ ,\*\*  $p < 0.01$ ,\*\*\*  $p < 0.001$

**Table 5**

Prevalence of intimate partner violence (IPV) and association between immigrant generational status and IPV among respondents without child maltreatment

Immigrant generational Status (IGS)	Prevalence of IPV, n (%)	AORI (95 % CI) <sup>a</sup>	AOR2 (95 % CI) <sup>b</sup>	Gender × IGS interaction AOR (95 % CI) <sup>b</sup>	Acculturation × IGS interaction AOR (95 % CI) <sup>b</sup>
IPV perpetration					
3rd Gen.	480 (3.9)	1.00	1.00	1.45 (0.94–2.23)	0.95 (0.92–0.99) *
2nd Gen.	88 (3.9)	1.00 (0.73–1.38)	1.17 (0.77–1.78)		
1st Gen.	79 (3.0)	0.61 (0.40–0.93) *	0.69 (0.42–1.13)		
IPV Victimization					
3rd Gen.	444 (3.8)	1.00	1.00	0.95 (0.66–1.38)	1.01 (0.98–1.03)
2nd Gen.	79 (3.3)	0.88 (0.65–1.20)	0.90 (0.59–1.35)		
1st Gen.	78 (3.8)	0.83 (0.56–1.23)	1.34 (0.86–2.10)		

<sup>a</sup> Adjusted for age, gender, race, education, household income, marital status

<sup>b</sup> Adjusted for age, gender, race, education, income, marital status, racial discrimination, mutual IPV, any past-year mood or anxiety disorder, and any past-year substance use disorder

\*  $p < 0.05$ ,

\*\*  $p < 0.01$ ,

\*\*\*  $p < 0.001$