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## Intimate Partner Violence and Health Conditions Among U.S. Adults—National Intimate Partner Violence Survey, 2010–2012

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### Abstract

**Introduction:** Few studies of intimate partner violence and health outcomes include multiple forms of intimate partner victimization, so this paper sought to examine health associations with intimate partner violence (IPV), including sexual, physical, stalking, and psychological forms, as well as polyvictimization.

**Methods:** Data are from the 2010–2012 National Intimate Partner and Sexual Violence Survey, an on-going national random-digit-dial telephone survey of U.S. adults. There were 41,174 respondents. Logistic regression was used to compute prevalence ratios for any IPV, adjusted for demographics and non-IPV victimization. For individual forms of IPV, prevalence ratios were further adjusted for other forms of IPV. Tests for linear trend in poly-victimization were performed.

**Results:** Any IPV was associated with all health conditions for both sexes with a few exceptions for males. Female penetrative sexual victimization and male stalking victimization were associated with the most health conditions. For each health condition, a significant linear trend indicated that as the number of forms of IPV experienced increased, prevalence of each health condition increased, with a few exceptions for males.

**Conclusions:** It is important for service providers to screen for multiple forms of IPV, including psychological aggression, because individual forms or polyvictimization may have unique and cumulative health effects.

### Keywords

intimate partner violence; sexual violence; stalking; polyvictimization; domestic violence

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## Introduction

Intimate partner violence (IPV), which entails physical violence, sexual violence, stalking, or psychological aggression (including both expressive aggression and coercive control tactics) against a current or former romantic or dating partner is a substantial problem in the United States that has impacts on health (Breiding et al., 2015; Smith et al., 2018). Nationally representative data collected in 2015 from the National Intimate Partner and Sexual Violence Survey (NISVS) estimated that a quarter of U.S. women (24.4%, approximately 29 million) and one in 10 men (10.6%, about 12 million) experienced contact sexual violence, physical violence, and/or stalking by an intimate partner in their lifetime and reported at least one IPV-related impact (Smith SG et al., 2018). Lesser studied, psychological aggression is also a particularly common form of IPV victimization, with almost half of U.S. women and men reporting at least one form of psychological victimization at some point in life (Smith SG et al., 2018).

IPV has been linked to multiple health problems. Physical health associations include injury, chronic pain, headaches, difficulty sleeping, activity limitations and chronic medical conditions such as asthma, gastrointestinal disorders, diabetes, and cancer (Breiding et al., 2014; Campbell et al., 2002; Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence, 2013; Reingle Gonzalez et al., 2018; Wu et al., 2010). Reproductive health may be impacted as well; for example, reproductive coercion, wherein a victim's ability to negotiate sex, condom, and other contraception use is compromised and may result in subsequent contraction of a sexually transmitted disease or an unintended pregnancy (Basile et al., 2018; Bergmann & Stockman, 2015; Campbell et al., 2002; Spiwak et al., 2013). Women who experience IPV are less likely to access adequate antenatal care and use skilled delivery care than those who do not experience IPV (Musa et al., 2019). Perinatal outcomes are also worse for victims of IPV compared to non-victims. For example, IPV victims more frequently experience miscarriage, pre-term birth, premature rupture of membranes, intrauterine growth restriction, low birthweight, and perinatal death (Pastor-Moreno et al., 2020). In addition to physical health impacts, mental health associations with IPV include depression, post-traumatic stress disorder, and suicidality (Beydoun et al., 2012; McLaughlin et al., 2012; Woods, 2005). IPV victim's health is further placed at risk by increased substance use (Caleyachetty et al., 2014; Devries et al., 2014). Ultimately, these health impacts may contribute to IPV victims reporting greater disability than non-victims, and disability is a known risk factor for IPV (Breiding & Armour, 2015; Breiding et al., 2014). The ultimate consequence of IPV is death. One in seven homicides globally (including men and women) and more than a third of female homicides are perpetrated by an intimate partner (Stöckl et al., 2013).

While numerous studies have examined health associations with IPV, there are some important gaps. The first gap is that the majority of studies have focused on sexual or physical IPV, or the two as a singular domain, despite psychological IPV being more prevalent (Okafor et al., 2018; Smith SG et al., 2018). Although NISVS has consistently found that nearly half of all U.S. women and men experience psychological aggression, the

reporting on IPV associated health conditions to date used a composite measure of IPV that only included rape, physical violence, and stalking (Breiding et al., 2014).

A second gap in the literature is that few studies have examined specific forms of IPV separately with respect to a given health outcome, and those that have, often did not control for other co-occurring forms of IPV (Beydoun et al., 2017; Coker et al., 2002; Lacey & Mouzon, 2016; Mason et al., 2013; Stöckl & Penhale, 2015). This is important because different forms of IPV may have unique associations with health. The few studies that have attempted to control for other forms of IPV were limited in scope given the narrow population studied, for example undergraduates, women presenting to the district attorney's office, or for antenatal care (Bennice et al., 2003; Symes et al., 2014; Wolford-Clevenger et al., 2016).

A third gap in the literature that this study addresses is the paucity of data on polyvictimization specific to intimate partner violence. While the literature base on polyvictimization is more robust for childhood experiences of violence alone or in combination with adult IPV, it is less so with respect to adult experiences and multiple forms of IPV specifically (Cho & Kwon, 2018; Finkelhor et al., 2011; Riedl et al., 2019; Turner et al., 2010). It has been found that low-frequency victimization in an individual's life course across multiple forms of violence (e.g., physical violence, bullying, etc.) can be more harmful than high-frequency victimization in a single form, so this paper will explore health conditions associated with multiple forms of IPV (physical, sexual, etc.) as a measure of polyvictimization rather than frequency (Finkelhor et al., 2011).

Given the literature gaps described above, the first aim of this paper is to provide an update on health associations with IPV, including psychological aggression in the composite definition, given its prevalence and associations with poor health (Coker et al., 2002). The second aim of this study is to investigate associations between individual forms of IPV and health conditions, while controlling for other forms of IPV, demographic variables, and having experienced stalking and sexual violence by non-intimate partners. Third, recognizing that the various forms of IPV rarely occur in isolation, this paper examines whether there is a linear relationship between the number of forms of IPV a person has experienced and an increased likelihood of negative health conditions. To our knowledge, this is the first paper examining the health conditions associated with IPV polyvictimization.

## Methods

### Study Sample

Data are from the 2010–2012 administrations of NISVS, a national random-digit-dial telephone survey of the non-institutionalized English- or Spanish-speaking U.S. population, ages 18 and older. While the most recent NISVS data collection is from 2015, these study years were selected because data from the 2010–2012 survey years could be combined to yield a larger dataset, allowing for more granular analysis than was possible with 2015 data alone. The survey is conducted in all 50 states and the District of Columbia and uses a dual frame sampling strategy that includes landlines and cell phones. Survey questions are behavior-specific and allow for computation of lifetime and 12-month prevalence of

IPV, sexual violence, and stalking. More information on the data collection instrument can be found elsewhere (Breiding et al., 2014; Smith, Basile & et al., 2017). A total of 41,174 respondents (22,590 women and 18,584 men) completed the survey in the three years combined (43.3% by landline and 56.7% by cell phone). The weighted response rate ranged from 27.5% to 33.6% (AAPOR Response Rate 4, AAPOR 2011) while the cooperation rate ranged from 80.3% to 83.5%, indicating high participation among adults who were contacted and eligible. Data were weighted to produce national estimates. The survey protocol received approval by the Office of Management and Budget as well as the Institutional Review Board of Research Triangle Institute, International. Additional details on the methods for NISVS and weighting procedures can be found elsewhere (Smith, Basile & et al., 2017). Data on victimization was collected for multiple types of perpetrators, so we specify violence as being perpetrated by an intimate partner or non-intimate partner.

## Measures

**Demographics.**—Demographic variables included participant age, race/ethnicity, education, and income.

**Health Conditions.**—Physical health conditions were assessed by asking participants if they had ever been told by a doctor, nurse, or other health professional that they had asthma, irritable bowel syndrome, diabetes, or high blood pressure. They were also asked if they have frequent headaches, chronic pain, or difficulty sleeping. General physical and mental health was assessed by asking, “Would you say that in general your physical/mental health is excellent, very, good, fair, or poor?”

**Intimate Partner Violence.**—IPV was defined as having experienced any psychological aggression/reproductive coercion, stalking, physical violence, or sexual violence by a current or former intimate partner in one’s lifetime. Intimate partners include current or former spouses, boyfriends/girlfriends, dating partners, or sexual partners. Greater detail and justification for definitions of intimate partner violence, psychological aggression/reproductive coercion, stalking, physical, and sexual violence can be found elsewhere (Breiding et al., 2015).

**Psychological Aggression/Reproductive Coercion.**—Psychological aggression/reproductive coercion included expressive aggression (such as name calling, insulting or humiliating), coercive control and entrapment (behaviors meant to monitor, control, or threaten an intimate partner), and reproductive coercion (refusal to use a condom, trying to get a partner pregnant/become pregnant against the other partner’s will).

**Stalking.**—Stalking includes a pattern of harassing or threatening tactics used by a perpetrator that is both unwanted and causes fear or safety concerns in the victim.

**Physical Violence.**—Physical violence (PV) was further separated into either having been slapped, pushed, or shoved by an intimate partner or severe PV. Severe PV included a participant having been hit with a fist or something hard, kicked, hurt by hair pulling,

slammed against something, choked or suffocated, beaten, burned on purpose, or had a knife or gun used against them.

**Sexual Violence.**—Sexual violence (SV) was sub-divided into non-penetrative and penetrative SV. Non-penetrative SV included unwanted sexual contact (being fondled, groped, grabbed, kissed in a sexual way) and non-contact unwanted sexual experiences (exposing sexual body parts or flashing, masturbating in front of the victim, being made to show one's body parts, or participate in sexual photos/videos, or harassing the victim in a way that made them feel unsafe). Penetrative SV included completed or attempted physically forced rape or being made to penetrate someone else, completed alcohol or drug facilitated rape or being made to penetrate someone else, and sexual coercion.

**Poly-victimization.**—Poly-victimization was calculated by summing the number of IPV forms experienced (psychological aggression, stalking, PV, or SV) so that a participant could have experienced one, two, three, or four forms of IPV in their lifetime.

**Non-intimate Partner Violence.**—Non-intimate partner violence included SV and stalking as defined above by anyone other than an intimate partner.

**Statistical Analysis.**—All analyses were conducted separately for females and males. Lifetime prevalence estimates were computed of any IPV by socio-demographic characteristics. Chi-square tests were used to determine demographic differences between IPV victims and non-victims. The prevalence of each health condition was calculated by IPV victimization status, overall and for each individual form of IPV. For each health condition, logistic regression was used to compute adjusted prevalence ratios for any IPV, adjusted for respondent demographics and stalking and SV by someone other than an intimate partner. For analysis of the individual forms of IPV, prevalence ratios were further adjusted for the other forms of IPV. Finally, to account for the cumulative impact of experiencing multiple forms of IPV, tests for linear trend of adjusted odds ratios in IPV poly-victimization (range 0–4 forms) were performed. All analyses were conducted using SAS, version 9.3 (SAS Institute Inc) and SAS-callable SUDAAN, version 11.0 (Research Triangle Institute) to account for the complex survey design including stratified sampling and weighting for unequal sample selection probabilities and nonresponse. Statistical significance of all 2-sided, unpaired  $p$  values was set at 0.01 given the large number of statistical tests. Estimates based on 20 or fewer respondents and/or those with relative standard errors greater than 30% were considered statistically unreliable and not presented.

## Results

### Demographics

IPV victims and non-victims differed across all demographic characteristics ( $p < 0.001$ ) and were consistent between females and males (Tables 1 and 2). There were fewer females and males over age 55 who reported any lifetime IPV than who reported no IPV. More non-Hispanic Black persons reported any lifetime IPV and more non-Hispanic Other persons (a category including persons who identified as Asian/Pacific Islander, American Indian/Alaska Native, and Multiracial) reported no IPV. Fewer persons who reported any lifetime

IPV were college graduates than non-victims. Similarly, more persons who reported any lifetime IPV earned less than \$25,000 a year than non-victims, and more non-victims reported earning over \$75,000 a year than IPV victims.

### Any IPV Association with Health Conditions

To meet the first objective, the association between having experienced any IPV and each of 10 health conditions was examined, adjusting for demographic variables and stalking or SV by a non-intimate partner. Women who experienced one or more forms of IPV were significantly more likely ( $p < 0.01$ ) to report each of the 10 health conditions measured in this study (Table 3). Men who reported one or more forms of IPV victimization were significantly more likely to report seven of the 10 health conditions measured in this study, excluding irritable bowel syndrome, diabetes, and high blood pressure (Table 4).

### Findings when looking at individual forms of IPV

**Women.**—To meet the second objective, associations between specific forms of IPV and health conditions were examined (Table 3). After adjusting for demographic variables, stalking and SV by non-intimate partners, and the other forms of IPV, female victims of psychological aggression had a higher prevalence of chronic pain and fair or poor mental health than non-victims of psychological aggression. Female stalking victims had a higher prevalence of difficulty sleeping, disability, and fair or poor mental health than non-stalking victims. Females who were slapped, pushed, or shoved had a higher prevalence of chronic pain and females of severe PV had a higher prevalence of difficulty sleeping than non-victims respectively. Females who experienced non-penetrative SV had a higher prevalence of chronic pain, difficulty sleeping, disability, and fair or poor physical health than non-victims of non-penetrative SV while victims of penetrative SV had a higher prevalence of asthma, irritable bowel syndrome, frequent headaches, disability, and fair or poor mental health than non-victims of penetrative SV.

**Men.**—After adjusting for demographic variables, stalking and SV by non-intimate partners, and the other forms of IPV, male victims of psychological aggression had a higher prevalence of difficulty sleeping, disability, and fair or poor mental health than non-victims of psychological aggression (Table 3). Male stalking victims had a higher prevalence of irritable bowel syndrome, chronic pain, difficulty sleeping, disability, and fair or poor mental health than non-victims of stalking. Men who were slapped, pushed, or shoved did not have a higher prevalence of health conditions than non-victims and male victims of severe PV had a higher prevalence of frequent headaches, chronic pain, difficulty sleeping, and disability than non-victims. Male victims of non-penetrative SV had a higher prevalence of difficulty sleeping and disability than non-victims, and finally, men who experienced penetrative SV had a higher prevalence of frequent headaches, chronic pain, difficulty sleeping, and disability than men who did not experience penetrative SV.

**Poly-victimization.**—Given many forms of IPV co-occur, to meet the third objective, the cumulative impact of experiencing multiple (0–4) forms of IPV was tested for linear trends (Table 5). For each of the health conditions studied in females and males there was a significant linear trend indicating that as the number of forms of IPV experienced increased,

so did the prevalence of each health condition with the exception of diabetes and high blood pressure in men.

## Discussion

### Summary of findings

Consistent with previous studies, IPV victims differed from non-victims across demographic characteristics. Of note, non-Hispanic Black Americans reported more lifetime IPV, which may be a reflection of the structural inequalities and structural racism experienced by Black Americans (Cho, 2012). Similarly, we found that more lower income Americans are burdened by IPV (Byrne et al., 1999).

All negative health conditions measured in this study were associated with IPV victimization for women and most for men, however, similar to a 2010 special report on IPV using NISVS data, we found that irritable bowel syndrome, diabetes, and high blood pressure were not associated with IPV for men (Breiding et al., 2014). An important difference between the 2010 report and this study is that psychological aggression and more forms of SV (vs. just rape) were included in the definition of “any IPV.” Additional health conditions were significantly associated with any IPV in this study compared to the 2010 report (diabetes and high blood pressure were new findings for women; asthma and poor mental health were new findings for men). These new findings suggest a comprehensive definition of IPV, including its many forms, should be used when studying associated health conditions.

Slightly different patterns emerged by sex when looking at the association of the individual types of IPV with negative health conditions. For female IPV victims, non-penetrative and penetrative SV were associated with the largest number of health conditions, 4 and 5 conditions, respectively, followed by stalking (3). For male IPV victims, stalking was associated with the most health conditions (5), followed by severe PV (4), penetrative SV (4), and psychological aggression (3). By contrast, slapping, pushing, and shoving by an intimate partner was associated with 1 health condition for female victims and no health conditions for male victims. These findings shed light on important differences in the potential health impact of IPV victimization for women and men and might inform prevention and response efforts. In addition, consistent with previous work this study provides support for a graded relationship suggesting victims of numerous forms of IPV have more severe health impacts (Cho & Kwon, 2018; Finkelhor et al., 2011; Riedl et al., 2019; Turner et al., 2010).

It remains challenging to adequately and accurately represent the relative harm of IPV in quantitative terms. IPV can range from having experienced one less severe form of IPV on one occasion to chronic, severe violence over many years. An individual’s experience can vary by the number of unique violent acts experienced, how many times each act was experienced, for how long, and the number of intimate partners who perpetrated these acts, among other factors. Further, there are likely many factors that can increase or decrease the harm from IPV, ranging from disability and economic insecurity to the amount of social support received by someone who has experienced IPV. This paper sought to explain some of this variation in harm by examining individual forms of IPV, while controlling for others,

and by examining the potential health impact of experiencing a greater number of forms of IPV. However, there is much more work to be done to better describe the unique harms of individual forms of IPV as well as the cumulative impact of multiple forms.

### Limitations

This study is subject to several limitations. First, given the sensitive nature of the survey questions, estimates of IPV included in this study are likely underestimates of the true size of the problem. Second, the sample consists of noninstitutionalized adults and does not represent potentially high-risk groups such as incarcerated or homeless adults. Third, despite strategies implemented to encourage survey participation, the overall NISVS response rates for the data years used in this study were less than desirable; however, the cooperation rates were high. Fourth, given the cross-sectional nature of these data, causal inferences cannot be made between IPV victimization and the health conditions. Fifth, given the co-occurrence of many forms of IPV, it is very difficult to disentangle the unique impact of other forms of IPV despite controlling for them (Coker et al., 2002; Mason et al., 2013). Sixth, while this study did control for SV and stalking by non-intimate partners at any age, NISVS does not measure other forms of violence, such as childhood violence or neglect by a caregiver, which are associated with experiencing IPV in adulthood and could also contribute to negative health conditions (Li et al., 2019). Finally, the analysis did not take into account the age of onset, frequency, duration, or severity of victimization, which could each have an impact on the association with health conditions. With respect to diversity, some limitations of this paper are the sample did not include institutionalized adults as mentioned above; it was only conducted in English and Spanish, and while the results may be generalizable to the adult US population, they may not be generalizable to specific groups that may be at most risk for intimate partner violence. However, a relative strength with respect to diversity is the inclusion of men and their experiences with intimate partner violence as well as the inclusion of multiple forms of IPV.

### Public Health Implications

Understanding the health conditions associated with IPV is particularly important in efforts to prevent this problem. Given IPV is associated with negative health conditions for adult women and men, primary prevention efforts to stop IPV before it happens may have the potential to prevent both acute and long-term negative health and health care costs to victims and society. Resources exist that describe the best available evidence to prevent IPV (Niolon et al., 2017), including many approaches that focus on youth to stop violence before it starts. In addition, integrative health care that includes screening and assessment for IPV and connection with services is important to reduce negative health impacts for victims.

### Conclusions

IPV is a serious public health problem that results in significant costs to victims and society (Peterson et al., 2018). While both women and men are victims, this study suggests sex differences exist in the association between IPV victimization and negative health conditions. This study allowed for an examination of the association of numerous forms of IPV victimization with several health conditions and these findings can inform prevention



and response efforts. Primary prevention efforts among youth are critical to stop IPV victimization and perpetration before it starts and promote health and well-being throughout the lifespan. Breiding et al., 2015; García-Moreno et al., 2013

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**Table 1.** Demographic Characteristics of Respondents by Type of Lifetime Intimate Partner Violence Reported—U.S. Women, NISVS 2010–2012.

Demographic Characteristic	No Intimate Partner Violence <sup>d</sup>			Any Intimate Partner Violence <sup>ab</sup>			
	Sample n	Wtd %	(95% CI)	Sample n	Wtd %	(95% CI)	Estimated No. of Victims
<b>Age Group<sup>d</sup></b>							
18–24 years	858	11.6	(10.6–12.8)	1080	13.3	(12.3–14.4)	8,209,000
25–34 years	1449	16.0	(14.9–17.2)	1943	18.9	(17.8–20.0)	11,626,000
35–44 years	1329	14.3	(13.2–15.4)	1945	19.3	(18.1–20.4)	11,849,000
45–54 years	1911	16.6	(15.5–17.7)	2496	19.8	(18.7–20.9)	12,183,000
55 years	5406	41.5	(40.1–42.9)	4024	28.7	(27.5–29.9)	17,671,000
<b>Race/ethnicity<sup>d</sup></b>							
Hispanic	799	13.9	(12.7–15.1)	873	12.6	(11.6–13.7)	7,817,000
Non-Hispanic Black	866	10.5	(9.6–11.4)	1221	13.8	(12.8–14.8)	8,544,000
Non-Hispanic White	8720	66.5	(64.9–68.0)	8632	67.4	(66–68.7)	41,695,000
Non-Hispanic other <sup>c</sup>	640	9.0	(8.0–10.1)	795	6.0	(5.3–6.8)	3,707,000
<b>Education<sup>d</sup></b>							
Did not graduate high school	747	9.7	(8.8–10.8)	841	9.7	(8.8–10.6)	5,979,000
High-school graduate	2715	23.7	(22.5–25.0)	2639	23.6	(22.4–24.9)	14,619,000
Some college	3170	28.3	(27.0–29.7)	3957	32.7	(31.4–34)	20,253,000
College graduate	4398	38.1	(36.7–39.5)	4103	34.0	(32.7–35.3)	21,038,000
<b>Income<sup>d</sup></b>							
< \$25,000	2696	29.1	(27.7–30.6)	3760	37.8	(36.4–39.2)	23,407,000
\$25,000 to < \$50,000	2357	20.0	(18.9–21.2)	2691	21.6	(20.5–22.8)	13,399,000
\$50,000 to < \$75,000	1685	12.9	(12.0–13.9)	1660	12.3	(11.5–13.2)	7,619,000
\$75,000	3016	25.0	(23.8–26.2)	2743	21.6	(20.6–22.7)	13,384,000
Missing	1291	13.0	(12.0–14.0)	691	6.6	(5.9–7.4)	4,093,000

CI: confidence interval.

<sup>a</sup>Denominator is non-intimate partner violence victims and intimate partner violence victims, respectively.

The sum of percentages across demographic traits within victimization types may not sum to 100% due to rounding and missing values.

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<sup>b</sup>Includes any psychological aggression/reproductive coercion, pushed/slapped/shoved, severe physical violence, stalking, non-penetrative sexual violence, or penetrative sexual violence by an intimate partner in lifetime.

<sup>c</sup>Includes Asian/Pacific Islander, American Indian/Alaska Native and Multiracial.

<sup>d</sup>p-value < 0.01, chi-square test for the association between intimate partner violence (no/yes) and the corresponding demographic characteristic.

**Table 2.** Demographic Characteristics of Respondents by Type of Lifetime Intimate Partner Violence Reported—U.S. Men, NISVS 2010–2012.

Demographic Trait	No Intimate Partner Violence <sup>d</sup>			Any Intimate Partner Violence <sup>ab</sup>			
	Sample n	Wtd %	(95% CI)	Sample n	Wtd %	(95% CI)	Estimated No. of Victims
<b>Age group<sup>d</sup></b>							
18–24	895	12.6	(11.5–13.8)	1160	15.0	(13.9–16.2)	8,826,000
25–34	1346	15.9	(14.8–17.1)	1787	20.1	(18.9–21.4)	11,844,000
35–44	1186	16.2	(14.9–17.6)	1652	20.4	(19.2–21.8)	12,022,000
45–54	1639	17.0	(15.8–18.3)	1974	20.0	(18.8–21.3)	11,782,000
55	4094	38.3	(36.7–39.8)	2783	24.4	(23.2–25.7)	14,368,000
<b>Race/ethnicity<sup>d</sup></b>							
Hispanic	680	14.0	(12.7–15.5)	836	15.2	(13.9–16.5)	8,947,000
Non-Hispanic Black	606	9.5	(8.5–10.6)	849	12.7	(11.6–13.9)	7,506,000
Non-Hispanic White	7212	67.8	(66.1–69.5)	6941	65.9	(64.4–67.4)	38,918,000
Non-Hispanic other <sup>c</sup>	684	8.5	(7.5–9.6)	731	6.0	(5.4–6.8)	3,568,000
<b>Education<sup>d</sup></b>							
Did not graduate high school	679	10.4	(9.2–11.7)	747	10.3	(9.4–11.4)	6,095,000
High-school graduate	2277	25.0	(23.6–26.5)	2548	27.4	(26.1–28.8)	16,201,000
Some college	2216	23.0	(21.7–24.3)	2852	29.8	(28.4–31.2)	17,584,000
College graduate	4022	41.6	(40.0–43.2)	3231	32.4	(31–33.8)	19,118,000
<b>Income<sup>d</sup></b>							
<25,000	1930	26.3	(24.8–27.9)	2529	31.0	(29.5–32.4)	18,272,000
25,000 to <50,000	1945	20.3	(19.0–21.6)	2096	22.3	(21–23.6)	13,145,000
50,000 to <75,000	1406	12.2	(11.3–13.1)	1446	14.1	(13–15.1)	8,296,000
75,000	3163	31.1	(29.7–32.5)	2794	26.4	(25.1–27.7)	15,580,000
Missing	759	10.2	(9.1–11.3)	516	6.3	(5.6–7.1)	3,741,000

CI: confidence interval.

<sup>a</sup>Denominator for percentages is non-intimate partner violence victims and intimate partner violence victims, respectively. The sum of percentages across demographic traits within victimization types may not sum to 100% due to rounding and missing values.

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<sup>b</sup>Includes any psychological aggression/reproductive coercion, pushed/slapped/shoved, severe physical violence, stalking, non-penetrative sexual violence, or penetrative sexual violence by an intimate partner in lifetime.

<sup>c</sup>Includes Asian/Pacific Islander, American Indian/Alaska Native and Multiracial.

<sup>d</sup>p-value < 0.01, chi-square test for the association between intimate partner violence (no/yes) and the corresponding demographic characteristic.



**Table 3.**

Association between Health Conditions and History of Any Intimate Partner Violence and Different Forms of Intimate Partner Violence – U.S. Women, NISVS 2010–2012.

Health Condition	Any Intimate Partner Violence <sup>a</sup>	Forms of Intimate Partner Violence (IPV)					
		Psychological Aggression	Stalking	Slapped, Pushed or Shoved	Severe Physical Violence	Non-penetrative Sexual Violence	Penetrative Sexual Violence
	APR <sup>b</sup> (95% CI)	APR <sup>b</sup> (95% CI)	APR <sup>b</sup> (95% CI)	APR <sup>b</sup> (95% CI)	APR <sup>b</sup> (95% CI)	APR <sup>b</sup> (95% CI)	APR <sup>b</sup> (95% CI)
Asthma	1.4 (1.3–1.5) <sup>c</sup>	1.2 (1.0–1.5)	1.2 (1.0–1.4)	0.9 (0.8–1.1)	1.1 (1.0–1.3)	1.1 (0.9–1.2)	1.2 (1.1–1.4) <sup>c</sup>
Irritable bowel syndrome	1.6 (1.4–1.8) <sup>c</sup>	1.3 (1.0–1.8)	1.2 (1.0–1.4)	1.0 (0.8–1.2)	1.2 (1.0–1.4)	1.0 (0.9–1.3)	1.5 (1.3–1.8) <sup>c</sup>
Diabetes	1.2 (1.1–1.3) <sup>c</sup>	0.9 (0.7–1.2)	1.1 (0.9–1.3)	1.0 (0.8–1.2)	1.2 (1.0–1.5)	1.2 (1.0–1.5)	1.0 (0.8–1.2)
High blood pressure	1.1 (1.1–1.2) <sup>c</sup>	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.0 (0.9–1.1)	1.0 (0.9–1.1)
Frequent headaches	1.5 (1.4–1.7) <sup>c</sup>	1.3 (1.0–1.6)	1.1 (1.0–1.2)	1.1 (1.0–1.3)	1.2 (1.1–1.3)	1.1 (0.9–1.2)	1.2 (1.1–1.3) <sup>c</sup>
Chronic pain	1.8 (1.7–2.0) <sup>c</sup>	1.3 (1.1–1.6) <sup>c</sup>	1.2 (1.1–1.4)	1.2 (1.1–1.3) <sup>c</sup>	1.2 (1.0–1.3)	1.3 (1.1–1.4) <sup>c</sup>	1.1 (1.0–1.2)
Difficulty sleeping	1.8 (1.7–2.0) <sup>c</sup>	1.2 (1.0–1.4)	1.2 (1.1–1.4) <sup>c</sup>	1.1 (1.0–1.2)	1.2 (1.1–1.3) <sup>c</sup>	1.2 (1.1–1.3) <sup>c</sup>	1.1 (1.0–1.2)
Disability	1.7 (1.6–1.8) <sup>c</sup>	1.2 (1.0–1.4)	1.2 (1.1–1.3) <sup>c</sup>	1.1 (1.0–1.2)	1.1 (1.0–1.3)	1.3 (1.2–1.4) <sup>c</sup>	1.2 (1.1–1.3) <sup>c</sup>
Fair or poor physical health	1.5 (1.3–1.6) <sup>c</sup>	1.1 (0.9–1.4)	1.1 (1.0–1.3)	1.2 (1.1–1.4)	1.2 (1.0–1.3)	1.3 (1.2–1.5) <sup>c</sup>	1.1 (0.9–1.2)
Fair or poor mental health	2.0 (1.7–2.3) <sup>c</sup>	1.7 (1.3–2.2) <sup>c</sup>	1.4 (1.1–1.6) <sup>c</sup>	1.2 (1.0–1.4)	1.2 (1.0–1.5)	1.3 (1.1–1.6)	1.3 (1.1–1.5) <sup>c</sup>

APR – Adjusted Prevalence Ratio; CI – Confidence Interval.

<sup>a</sup>Includes any psychological aggression/reproductive coercion, pushed/slapped/shoved, severe physical violence, stalking, non-penetrative sexual violence, or penetrative sexual violence by an intimate partner in lifetime.

<sup>b</sup>Adjusted for respondent age at interview (continuous), race/ethnicity (four levels), education (four levels), HH income (5-levels), other forms of intimate partner violence (subtypes ONLY), and sexual violence and/or stalking victimization by a non-intimate partner.

<sup>c</sup>*p* 0.01 (Wald test).

**Table 4.**

Association between Health Conditions and History of Any Intimate Partner Violence and Different Forms of Intimate Partner Violence—U.S. Men, NISVS 2010–2012.

Health Condition	Any Intimate Partner Violence <sup>a</sup>		Sub-types of Intimate Partner Violence					Penetrative Sexual Violence
	APR <sup>b</sup> (95% CI)	APR <sup>b</sup> (95% CI)	Psychological Aggression	Stalking	Slapped, Pushed or Shoved	Severe Physical Violence	Non-penetrative Sexual Violence	
Asthma	1.3 (1.2–1.5) <sup>c</sup>	1.4 (1.0–1.8)	1.1 (0.8–1.5)	1.1 (0.9–1.3)	1.0 (0.9–1.2)	1.2 (1.0–1.6)	1.2 (1.0–1.5)	
Irritable bowel syndrome	1.3 (1.0–1.7)	1.2 (0.7–2.0)	2.7 (1.6–4.5) <sup>c</sup>	1.2 (0.9–1.6)	1.1 (0.8–1.6)	1.2 (0.8–1.9)	1.0 (0.6–1.5)	
Diabetes	1.1 (1.0–1.2)	1.0 (0.8–1.4)	1.0 (0.6–1.6)	1.0 (0.8–1.2)	1.1 (0.9–1.3)	1.2 (0.9–1.6)	0.9 (0.7–1.3)	
High blood pressure	1.1 (1.0–1.2)	1.0 (0.9–1.2)	0.8 (0.6–1.0)	1.1 (1–1.2)	1.0 (0.9–1.1)	1.1 (1.0–1.3)	1.1 (0.9–1.3)	
Frequent headaches	1.8 (1.5–2.0) <sup>c</sup>	1.5 (1.1–2.1)	1.2 (0.8–1.7)	1.0 (0.8–1.1)	1.4 (1.2–1.6) <sup>c</sup>	1.2 (0.9–1.5)	1.4 (1.1–1.7) <sup>c</sup>	
Chronic pain	1.8 (1.6–2.0) <sup>c</sup>	1.3 (1.0–1.6)	1.5 (1.2–1.9) <sup>c</sup>	1.2 (1.1–1.4)	1.3 (1.1–1.5) <sup>c</sup>	1.2 (1.0–1.4)	1.5 (1.3–1.8) <sup>c</sup>	
Difficulty sleeping	1.7 (1.5–1.8) <sup>c</sup>	1.3 (1.1–1.5) <sup>c</sup>	1.4 (1.1–1.7) <sup>c</sup>	1.1 (1.0–1.3)	1.3 (1.1–1.4) <sup>c</sup>	1.2 (1.1–1.5) <sup>c</sup>	1.3 (1.1–1.5) <sup>c</sup>	
Disability	1.5 (1.4–1.7) <sup>c</sup>	1.4 (1.2–1.7) <sup>c</sup>	1.6 (1.3–1.9) <sup>c</sup>	1.1 (1.0–1.2)	1.2 (1.1–1.4) <sup>c</sup>	1.3 (1.1–1.5) <sup>c</sup>	1.3 (1.1–1.5) <sup>c</sup>	
Fair or poor physical health	1.4 (1.2–1.5) <sup>c</sup>	1.3 (1.0–1.6)	1.3 (1.0–1.6)	1.1 (1.0–1.3)	1.1 (0.9–1.2)	1.1 (1.0–1.4)	1.2 (1.0–1.4)	
Fair or poor mental health	1.6 (1.4–1.9) <sup>c</sup>	1.5 (1.1–2.1) <sup>c</sup>	1.8 (1.3–2.5) <sup>c</sup>	1.0 (0.9–1.3)	1.3 (1.0–1.5)	1.2 (0.9–1.6)	1.3 (1.0–1.7)	

APR – Adjusted Prevalence Ratio; CI – Confidence Interval.

<sup>a</sup> Includes any psychological aggression/reproductive coercion, pushed/slapped/shoved, severe physical violence, stalking, non-penetrative sexual violence, or penetrative sexual violence by an intimate partner in lifetime.

<sup>b</sup> Adjusted for respondent age at interview (continuous), race/ethnicity (4 levels), education (four levels), HH income (5-levels), other forms of intimate partner violence (subtypes ONLY), and sexual violence and/or stalking victimization by a non-intimate partner.

<sup>c</sup> *p* 0.01 (Wald test).

Association between Health Conditions and Number of Forms of Intimate Partner Violence Reported—U.S. Women and Men, NISVS 2010–2012.

Table 5.

Health Condition	Number of Different Forms of IPV Experienced <sup>a</sup>					Test for Linear Trend	p Value <sup>c</sup>
	1 Form of IPV	2 Forms of IPV	3 Forms of IPV	4 Forms IPV			
	AOR <sup>b</sup> (95% CI)	AOR <sup>b</sup> (95% CI)	AOR <sup>b</sup> (95% CI)	AOR <sup>b</sup> (95% CI)			
<i>Women</i>							
Asthma	1.3 (1.1–1.5)	1.4 (1.2–1.6)	1.8 (1.5–2.1)	1.9 (1.5–2.3)		0.0001	
Irritable bowel syndrome	1.2 (1.0–1.5)	1.5 (1.3–1.8)	2.2 (1.8–2.7)	2.5 (2.0–3.2)		0.0001	
Diabetes	1.1 (0.9–1.3)	1.3 (1.1–1.5)	1.3 (1.0–1.6)	1.6 (1.3–2.1)		0.0002	
High blood pressure	1.1 (1.0–1.3)	1.2 (1.1–1.4)	1.1 (0.9–1.4)	1.6 (1.3–2.0)		0.0004	
Frequent headaches	1.3 (1.1–1.5)	1.8 (1.5–2.1)	1.9 (1.6–2.3)	2.8 (2.3–3.4)		0.0001	
Chronic pain	1.5 (1.3–1.7)	2.2 (1.9–2.5)	2.5 (2.1–2.9)	4.3 (3.5–5.2)		0.0001	
Difficulty sleeping	1.6 (1.4–1.9)	2.2 (2.0–2.5)	2.7 (2.3–3.2)	4.5 (3.7–5.4)		0.0001	
Disability	1.5 (1.3–1.7)	2.1 (1.8–2.4)	2.8 (2.4–3.3)	4.5 (3.7–5.4)		0.0001	
Fair or poor physical health	1.2 (1.0–1.4)	1.7 (1.5–2.0)	2.3 (2.0–2.8)	3.3 (2.7–4.1)		0.0001	
Fair or poor mental health	1.4 (1.1–1.7)	2.2 (1.8–2.6)	3.2 (2.6–4.0)	5.3 (4.2–6.7)		0.0001	
<i>Men</i>							
Asthma	1.2 (1.0–1.4)	1.4 (1.1–1.6)	1.4 (1.1–1.9)	3.0 (1.8–5.0)		0.0003	
Irritable bowel syndrome	1.1 (0.8–1.6)	1.2 (0.9–1.7)	1.5 (0.9–2.4)	3.8 (1.7–8.5)		0.0068	
Diabetes	1.0 (0.9–1.3)	1.1 (0.9–1.3)	1.0 (0.7–1.5)	1.5 (0.7–3.1)		0.5181	
High blood pressure	1.1 (0.9–1.2)	1.3 (1.1–1.5)	1.2 (1.0–1.6)	1.2 (0.7–2.1)		0.3321	
Frequent headaches	1.5 (1.2–1.8)	1.7 (1.4–2.1)	2.6 (1.9–3.4)	3.1 (1.9–5.2)		0.0001	
Chronic pain	1.5 (1.3–1.8)	2.3 (1.9–2.6)	3.9 (3.1–5.0)	6.2 (4.1–9.5)		0.0001	
Difficulty sleeping	1.5 (1.3–1.7)	2.2 (1.9–2.5)	3.2 (2.6–4.0)	5.8 (3.8–8.9)		0.0001	
Disability	1.4 (1.3–1.7)	1.9 (1.7–2.2)	3.5 (2.8–4.4)	5.4 (3.5–8.5)		0.0001	
Fair or poor physical health	1.3 (1.1–1.5)	1.7 (1.5–2.0)	1.7 (1.3–2.2)	3.2 (2.0–5.0)		0.0001	
Fair or poor mental health	1.3 (1.1–1.6)	1.8 (1.5–2.2)	2.3 (1.7–3.1)	4.6 (2.7–7.9)		0.0001	

AOR – Adjusted Odds Ratio; CI – Confidence Interval.

<sup>a</sup>Range is 0 (referent group to 4. Types of victimization include psychological aggression/reproductive coercion, stalking, physical violence, and/or sexual violence.

<sup>b</sup> Adjusted for Respondent Age (continuous), race/ethnicity (4 levels), education level (4 levels), household income (5 levels), and sexual violence and/or Stalking victimization by a non-intimate partner (2 levels).

<sup>c</sup> Wald-F Test for a linear trend.

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