
Prevalence and Risk Factors of Intimate Partner Violence in Eighteen U.S. States/Territories, 2005

Matthew J. Breiding, PhD, Michele C. Black, PhD, George W. Ryan, PhD

Background: Intimate partner violence (IPV) has been shown to have serious health consequences for both women and men, including poor general health, depressive symptoms, substance use, and elevated rates of chronic disease. Aside from crime surveys, there have been no large-scale IPV prevalence studies since the 1996 National Violence Against Women Survey. The lack of regular, ongoing surveillance, using uniform definitions and survey methods across states has hindered efforts to track IPV. In addition, the lack of state-specific data has hampered efforts at designing and evaluating localized IPV prevention programs.

Methods: In 2005, over 70,000 respondents were administered the first-ever IPV module within the Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is a Centers for Disease Control and Prevention-sponsored annual random-digit-dialed telephone survey, providing surveillance of health behaviors and health risks among the non-institutionalized adult population of the United States and several U.S. territories.

Results: Approximately 1 in 4 women and 1 in 7 men reported some form of lifetime IPV victimization. Women evidenced significantly higher lifetime and 12-month IPV prevalence, and were more likely to report IPV-related injury than men. IPV prevalence also varied by state of residence, race/ethnicity, age, income, and education.

Conclusions: State-level data can assist state health officials and policy planners to better understand how many people have experienced IPV in their state. Such information provides a foundation on which to build prevention efforts directed toward this pervasive public health problem. (Am J Prev Med 2008;34(2):112-118) © 2008 American Journal of Preventive Medicine

Introduction

Intimate partner violence (IPV) is a significant public health problem with an estimated annual cost of \$5.8 billion in the United States alone (including medical and mental health costs and lost productivity).¹ The Centers for Disease Control and Prevention (CDC) defines IPV as threatened, attempted, or completed physical or sexual violence, and emotional abuse in the context of physical or sexual violence. IPV can be inflicted by a spouse, ex-spouse, current or former boyfriend or girlfriend, dating partner, or date.² IPV victimization occurs among women and men, in both heterosexual and same-sex couples. IPV victimization has been associated with short- and long-term negative health behaviors/outcomes, rang-

ing from depression and heavy alcohol use to increased risk of chronic disease.³⁻⁵ For women alone, IPV in the U.S. results in approximately 2 million injuries and 1300 deaths annually.¹ More recent data from thirteen states participating in the National Violent Death Reporting System found that 77.2% of intimate partner homicide victims in 2003 were women (D. Karch, personal communication, October 2005).

Although it is widely acknowledged that IPV is a significant public health concern, the magnitude of the IPV problem is less well understood. The most recent comprehensive IPV prevalence study was the 1996 National Violence Against Women Survey (NVAWS).⁶ More recent data exist, but these do not examine violence among the full range of intimate partners.^{7,8} In addition to health surveys, IPV data also have been collected in crime victimization surveys, but these studies are believed to underestimate IPV prevalence.⁹⁻¹¹ One analysis of the National Crime Victimization Survey found comparable levels of intimate partner physical assault as the NVAWS, but lower rates of intimate partner rape.¹¹ The lack of regular, ongoing surveillance, using uniform definitions and survey methods across states has hindered efforts to track IPV. Without such ongoing IPV surveillance, it is difficult for state

From the Epidemic Intelligence Service, Office of Workforce and Career Development (Breiding); Division of Violence Prevention, National Center for Injury Prevention and Control (Breiding, Black); Office of Statistics and Programming (Ryan), National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, Atlanta, Georgia

Address correspondence and reprint requests to: Matthew J. Breiding, PhD, Division of Violence Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 4770 Buford Highway NE, Mailstop K-60, Atlanta GA 30341. E-mail: mbreiding@cdc.gov.

and federal public health officials to monitor trends in nonfatal IPV in order to guide and evaluate prevention efforts. The aim of the current study was to provide more recent estimates of IPV prevalence and to examine demographic risk factors for IPV.

Methods

The current study utilized data collected as part of the 2005 Behavioral Risk Factor Surveillance System (BRFSS) survey. The BRFSS is an ongoing, annual, random-digit-dialed (RDD) telephone survey developed by the CDC to provide surveillance of health behaviors and health risks among the non-institutionalized adult population (aged ≥ 18 years) of the U.S. and several U.S. territories. The survey was administered in either English or Spanish, depending on the native language spoken by the study participant.¹² In 2005, an optional IPV module was available for use at the discretion of each state/territory.¹³ The IPV module was administered to the entire survey sample in ten U.S. states (AZ, HI, IA, MO, NV, OH, OK, RI, VT, VA), Puerto Rico, and the U.S. Virgin Islands. Six states (MA, MI, NE, NM, OR, WA) administered the module to a randomly assigned split sample. A total of 70,156 participants completed the IPV module. Among the 18 states/territories, response rates for the BRFSS core ranged from 37.8% in Massachusetts to 72.7% in Puerto Rico, with a median of 51.6%.¹⁴ Data were weighted to provide estimates that are representative of each state's population. The design and characteristics of BRFSS are described in greater detail elsewhere.¹⁵

Overall, among the states evaluated, approximately 18.7% of all respondents who completed the BRFSS core interview discontinued the survey before the start of the IPV module (completion ranged from 62.5% in Puerto Rico to 96.5% in Oregon). Because of the differing sets of modules administered across states, and the multiples sets of modules administered within many states, it is unclear how many respondents discontinued during a previous module or just prior to the IPV module. An evaluation of respondents who dropped out of the interview before the IPV module revealed that these respondents tended to be female, had a lower annual income, had less education, and were older than respondents who completed the entire survey. Further, all racial/ethnic groups, except for multiracial non-Hispanic respondents, were significantly more likely to have discontinued prior to completion compared to white non-Hispanic respondents.

Measures

The IPV module was the final module administered. Before beginning the module, respondents were told that the next questions were regarding physical and sexual violence victimization by an intimate partner. Respondents were explicitly informed that they could skip any question and that the entire module could be skipped if they considered answering such questions unsafe. IPV module questions were designed to be behaviorally-specific and were based on the CDC's uniform definitions of IPV.²

The IPV module included the following four initial questions related to lifetime physical and sexual IPV victimization: (1) Has an intimate partner ever threatened you with physical violence? This includes threatening to hit, slap, push, kick, or

hurt you in any way; (2) Has an intimate partner ever attempted physical violence against you? This includes times when they tried to hit, slap, push, kick, or otherwise hurt you, but they were not able to; (3) Has an intimate partner ever hit, slapped, pushed, kicked, or hurt you in any way; and (4) Have you ever experienced any unwanted sex by a current or former intimate partner? Unwanted sex was defined with the following statement: Unwanted sex includes things like putting anything into your vagina (if female), anus, or mouth, or making you do these things to them after you said or showed that you didn't want to. It includes times when you were unable to consent, for example, you were drunk or asleep, or you thought you would be hurt or punished if you refused. Respondents who reported any experience of physical violence or unwanted sex by an intimate partner were also asked: In the past 12 months, have you experienced any physical violence or had unwanted sex with an intimate partner? Respondents who reported physical or sexual IPV within the past 12 months were asked: In the past 12 months, have you had any physical injuries, such as bruises, cuts, scrapes, black eyes, vaginal or anal tears, or broken bones, as a result of this physical violence or unwanted sex? Prior to the administration of the questions an intimate partner was defined as "any current or former spouse, boyfriend, or girlfriend. Someone you dated also would be considered an intimate partner."

Analysis

Analyses were conducted using SUDAAN, version 9.0. Weighted estimates of lifetime and 12-month IPV victimization prevalence were calculated. Except where indicated, lifetime IPV prevalence estimates were based on respondents' reports of experiencing any combination of the IPV behaviors measured (threatened, attempted, or completed physical violence, and unwanted sex) by a current or former intimate partner. Twelve-month prevalence estimates were based on a single question that included both physical violence and unwanted sex. Data analyses describing lifetime IPV were based on data from all 18 states/territories that administered the module. Because Washington used a different protocol to assess IPV in the 12 months preceding the survey, 12-month prevalence was calculated for 17 states/territories.

Prevalence estimates were calculated by state of residence, race/ethnicity, age, income, and education and stratified by gender. Following National Center for Health Statistics standards, estimates with a relative standard error (RSE) greater than 0.30 were deemed unstable and not reported.¹⁶ Estimates with a RSE between 0.23 and 0.30 were deemed potentially unstable. Bivariate logistic regression models compared lifetime and 12-month prevalence estimates by gender. Multivariate logistic regression models were created to examine differences in lifetime IPV by race/ethnicity, age, income, and education. Variables in logistic regression models were entered simultaneously. Control variables were selected based on their association with IPV in previous studies.^{6,11}

Results

Table 1 includes overall lifetime and 12-month IPV prevalence estimates stratified by gender among all participating states and territories combined. Overall,

Table 1. Unweighted counts and weighted prevalence estimates of intimate partner violence, by gender

Violence experienced	Women			Men		
	<i>n</i>	%	95% CI	<i>n</i>	%	95% CI
Lifetime						
Any	11,552	26.4	25.7–27.2	4175	15.9	15.1–16.7
Threatened physical	8,682	19.2	18.6–19.9	2369	8.7	8.1–9.3
Attempted physical	6,498	14.5	13.9–15.1	2809	10.3	9.7–11.0
Completed physical	8,976	20.2	19.5–20.9	2839	10.7	10.1–11.4
Unwanted sex	4,508	10.2	9.7–10.7	378	1.5	1.2–1.8
Completed physical and/or unwanted sex	10,243	23.6	22.9–24.3	3035	11.5	10.8–12.2
12-month						
Completed physical and/or unwanted sex	588	1.4	1.2–1.7	166	0.7	0.5–0.9
Injury	284	0.8	0.6–1.0	54	0.2 ^a	0.1–0.4

^aPotentially unstable estimate, $0.23 < \text{relative standard error} < 0.30$.

26.4% of women and 15.9% of men reported experiencing some combination of physical violence (threatened, attempted, or completed) and/or unwanted sex in their lifetime (crude odds ratio [cOR]=1.90; 95% CI=1.77–2.04). For each individual form of IPV (e.g., completed physical violence) lifetime and 12-month prevalence was significantly higher among women compared to men, as evidenced by non-overlapping 95% CIs. Prevalence of lifetime completed physical violence and/or unwanted sex (not including threats and attempts of physical violence) was 23.6% for women and 11.5% for men (cOR=2.38; 95% CI=2.20–2.57).

Women were also significantly more likely than men to experience completed physical violence and/or unwanted sex in the 12 months preceding the survey (cOR=1.97, 95% CI=1.44–2.70) and women were significantly more likely to be injured as a result of IPV in the 12 months preceding the survey (cOR=3.36; 95% CI=2.00–5.64).

State-Specific IPV Prevalence Estimates

State-specific lifetime IPV prevalence estimates are shown in [Figure 1](#). For women, state-specific lifetime IPV prevalence ranged from 19.5% (Puerto Rico) to 35.0% (Nevada). For men, lifetime IPV prevalence ranged from 11.0% (Nebraska) to 23.1% (Nevada). For women, 12-month prevalence estimates ranged from 1.1% (Michigan and Nebraska) to 2.5% (Hawaii). For men, 12-month prevalence estimates were unstable for all states except Hawaii (1.5%).

Lifetime IPV Prevalence by Race/Ethnicity, Age, Income, and Education

[Table 2](#) includes lifetime IPV prevalence estimates for women and men, by race/ethnicity, age, income, and education. For women, lifetime IPV prevalence ranged from 9.7% among Asian women to 43.1% among multiracial non-Hispanic women, while for men lifetime IPV prevalence ranged from 8.1% among Asian men to 26.0% among multiracial non-Hispanic men.

For women, lifetime IPV prevalence ranged from 12.9% among those aged over 65 years to 31.2% among those aged 45–54 years. For men, lifetime IPV prevalence ranged from 5.6% among those over 65 to 21.4% among those aged 25–34 years. For women, lifetime IPV prevalence ranged from 24.2% among those earning more than \$50,000 annually to 35.5% among those earning less than \$15,000; lifetime IPV prevalence ranged from 22.9% among those who graduated from college to 31.7% among those who attended some college but did not graduate. Lifetime prevalence among men ranged from 13.9% among those earning more than \$50,000 annually to 20.7% among those earning less than \$15,000; lifetime IPV prevalence ranged from 13.6% among men who graduated from college to 18.5% among men who attended some college but did not graduate.

[Table 3](#) presents multivariate logistic regression models examining differences in lifetime IPV by demographic variables. For both women and men, there were significant differences in IPV prevalence among racial/ethnic groups after controlling for other demographic characteristics. Compared to white non-Hispanic women, multiracial women were significantly more likely to have experienced lifetime IPV (aOR=1.74; 95% CI=1.35–2.25), while Asian women (aOR=0.28; 95% CI=0.18–0.43) and Hispanic women (aOR=0.48; 95% CI=0.41–0.56) were significantly less likely to report ever having experienced IPV. For men, multiracial (aOR=1.82; 95% CI=1.37–2.42) and black non-Hispanic men (aOR=1.39; 95% CI=1.07–1.81) were significantly more likely to have experienced lifetime IPV than white non-Hispanic men, whereas Asian men (aOR=0.52; 95% CI=0.30–0.89), Hispanic men (aOR=0.76; 95% CI=0.59–0.96), and Native Hawaii/Pacific Islander men (aOR=0.34; 95% CI=0.12–0.96) were significantly less likely to report lifetime IPV. Women who completed college or those who completed high school were significantly less likely to report lifetime IPV than women who completed some college (aORs=0.71 [0.63–0.79] and 0.66 [0.60–0.73], respectively). Simi-

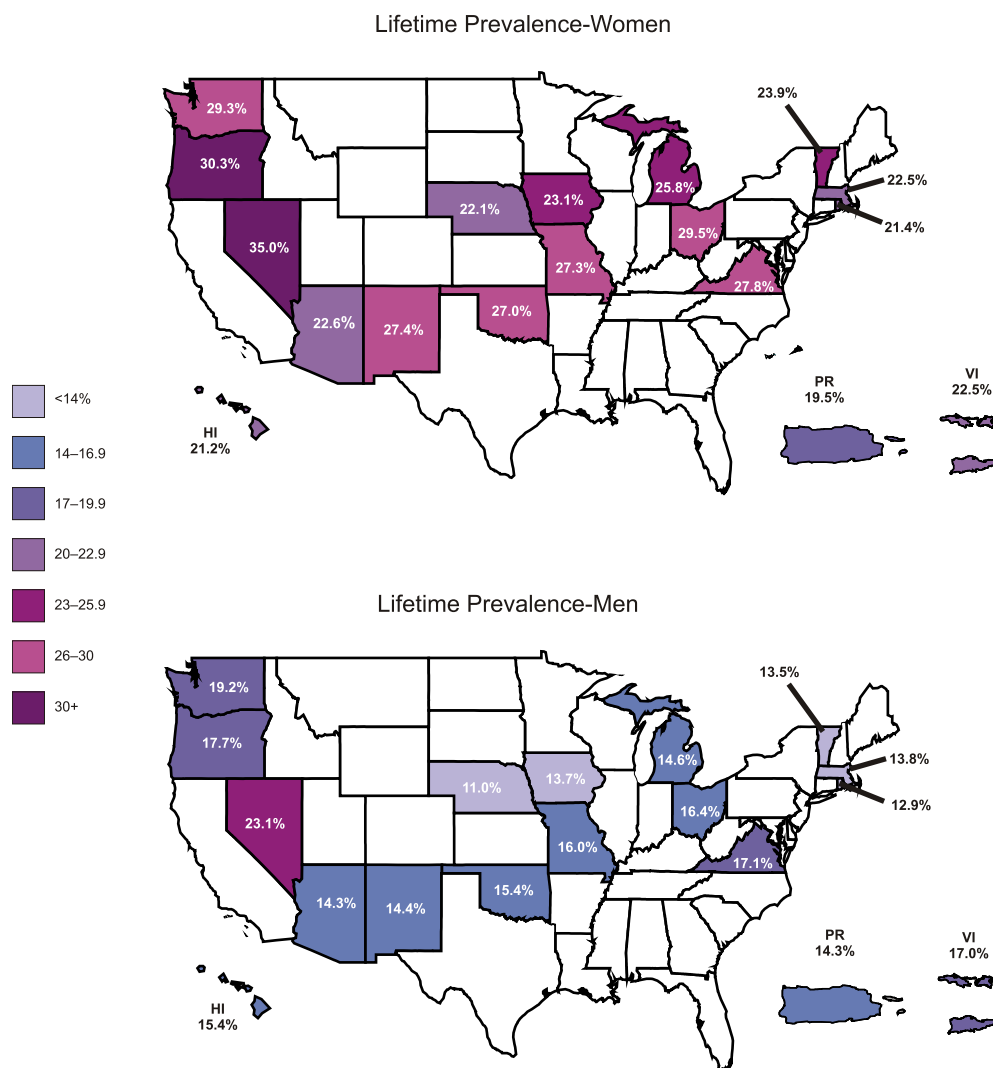


Figure 1. Weighted prevalence estimates of intimate partner violence (IPV), by state/territory.

lar patterns were observed among men. Men who completed college and those who completed high school evidenced significantly lower lifetime prevalence than men who completed some college (aORs=0.82 [0.69–0.98] and 0.80 [0.68–0.94], respectively).

Twelve-Month IPV Prevalence by Race/Ethnicity, Age, Income, and Education

Table 2 includes 12-month IPV prevalence estimates for women and men, by race/ethnicity, age, income, and education. Because few estimates of men's 12-month prevalence were stable, only estimates for women are described relative to demographic characteristics. Additionally, 12-month IPV prevalence estimates for women are not reported due the instability of estimates ($RSE > 0.30$) for four groups: Asian, Native Hawaiian/Pacific Islander, American Indian/Alaskan native, and other non-Hispanic women. Among groups with stable prevalence estimates, 12-month prevalence estimates for

women ranged from 1.2% among white non-Hispanic women to 2.2% among black non-Hispanic women.

Twelve-month IPV prevalence among women also varied relative to age, income, and education. Twelve-month prevalence ranged from 0.4% among those aged 55–64 years to 3.8% among those aged 18–24 years; however, estimates for women aged 65 years and older were unstable and not reported. Twelve-month prevalence estimates ranged from 0.6% among women earning more than \$50,000 to 3.1% among those earning less than \$15,000. Finally, 12-month prevalence ranged from 0.7% among women who graduated from college to 2.5% among those who did not graduate from high school.

Discussion

This study is the largest study of IPV prevalence ever completed in the U.S. and the first large-scale public

Table 2. Unweighted counts and weighted prevalence estimates for lifetime and 12-month intimate partner violence^c victimization, by race/ethnicity, age, income, and education

	Lifetime ^c						12-month ^d					
	Women			Men			Women			Men		
	<i>n</i>	%	95% CI	<i>n</i>	%	95% CI	<i>n</i>	%	95% CI	<i>n</i>	%	95% CI
Race/ethnicity												
Black NH	903	29.2	26.2–32.2	314	23.3	19.2–27.3	61	2.2	1.3–3.2	18	— ^b	
Asian	156	9.7	6.5–12.9	62	8.1 ^a	4.2–12.0	12	— ^b		6	— ^b	
NH/PI	35	— ^b		12	— ^b		5	— ^b		2	— ^b	
AI/AN	319	39.0	32.3–45.8	104	18.6	12.3–25.0	26	— ^b		6	— ^b	
Other NH	80	29.6	20.3–39.0	39	16.1 ^a	7.8–24.4	5	— ^b		2	— ^b	
Multiracial NH	605	43.1	37.7–48.5	234	26.0	20.5–31.4	43	1.5	0.9–2.1	12	— ^b	
Hispanic	988	20.5	18.5–22.5	360	15.5	13.0–18.0	79	1.8	1.1–2.5	19	— ^b	
White NH	8375	26.8	25.9–27.7	3023	15.5	14.6–16.4	351	1.2	1.0–1.5	99	0.5	0.3–0.7
Age (years)												
18–24	585	24.1	21.2–27.1	306	17.6	14.6–20.7	118	3.8	2.5–5.0	29	1.8 ^a	0.8–2.7
25–34	1941	30.2	28.3–32.0	768	21.4	19.1–23.6	148	2.1	1.5–2.6	40	0.8 ^a	0.4–1.2
35–44	2571	30.2	28.5–31.8	984	18.0	16.3–19.8	146	1.5	1.1–2.0	45	0.9 ^a	0.4–1.3
45–54	3054	31.2	29.6–32.7	1089	16.4	14.7–17.9	125	0.8	0.6–1.0	30	— ^b	
55–64	2129	26.5	24.9–28.1	688	12.5	11.0–14.0	39	0.4	0.2–0.6	18	— ^b	
65+	1272	12.9	11.8–14.0	340	5.6	4.7–6.5	12	— ^b		4	— ^b	
Income (\$)												
<15,000	1976	35.5	32.9–38.1	465	20.7	17.4–24.0	149	3.1	2.1–4.1	27	— ^b	
15,000–24,999	2126	29.2	27.3–31.1	657	20.2	17.6–22.8	118	1.9	1.2–2.6	35	1.4 ^a	0.7–2.2
25,000–34,999	1527	30.8	28.6–33.8	519	16.3	14.0–18.6	77	1.4	0.9–2.0	21	— ^b	
35,000–49,999	1786	26.7	24.8–28.6	701	16.1	14.2–18.0	93	2.0	1.2–2.9	24	— ^b	
50K≥	3163	24.2	22.9–25.4	1528	13.9	12.8–15.1	98	0.6	0.4–0.8	49	0.6 ^a	0.3–0.8
Education												
Did not graduate high school	1082	28.1	25.3–31.0	381	15.9	13.3–18.6	73	2.5	1.5–3.5	20	— ^b	
High school graduate	3185	24.5	23.2–25.9	1177	16.3	14.7–17.9	173	1.7	1.2–2.2	54	1.0	0.6–1.4
Some college	3894	31.7	30.2–33.2	1298	18.5	16.8–20.2	210	1.6	1.3–2.0	42	— ^b	
College graduate	3378	22.9	21.8–24.1	131	13.6	12.4–14.8	132	0.7	0.5–0.9	50	0.6 ^a	0.3–1.0

^aPotentially unstable estimate, 0.23<relative standard error<0.30.

^bUnstable estimate, relative standard error >0.30.

^cIncludes threatened, attempted, and completed physical violence as well as unwanted sex.

^dIncludes completed physical violence and unwanted sex.

AI/AN, American Indian, Alaskan Native; NH, Non-Hispanic; NH/PI, Native Hawaiian, Pacific Islander.

health study of IPV in nearly a decade. It is also the first study to provide state-level prevalence estimates for a large number of states using consistent definitions and uniform survey methods. Both the lifetime and 12-month IPV prevalence estimates indicate that IPV remains a major public health issue. Overall, in the 18 states/territories that participated in the survey, approximately one in four women and one in seven men reported some form of physical or sexual IPV victimization during their lifetime.

Despite a number of methodologic differences, the current study's prevalence estimates are similar to those reported in the NVAWS.⁶ In the current study, the 12-month and lifetime prevalence of unwanted sex and/or completed physical violence for women was 1.4% and 23.6%, respectively. In the NVAWS study, the prevalence for women of physical assault and/or completed/attempted rape by an intimate partner was 1.5% and 24.8%, for 12-month and lifetime prevalence, respectively. For men, the 12-month and lifetime prevalence for the same types of IPV was 0.7% and 11.5%,

respectively, as compared to 0.9% and 7.6%, respectively, for men in the NVAWS study. It is not possible to determine whether the difference in lifetime prevalence for men is statistically significant, largely due to differing survey methods. For instance, the NVAWS study was presented as a survey on personal safety while BRFSS is presented as a health survey. Such differences make comparisons between studies difficult and point to the need for continued, regular surveillance of IPV using consistent survey methods. Nevertheless, it is possible that this estimate indicates an increase in lifetime IPV prevalence among men.

The results of this study identify who might benefit most from limited prevention resources. For example, for both women and men, it was found that multiracial non-Hispanic respondents had elevated lifetime IPV prevalence. Also, compared to other men, black non-Hispanic respondents showed elevated lifetime IPV prevalence. It is important to note, however, that while differences found among racial/ethnic groups are helpful in identifying groups that may benefit from

Table 3. Relationship between lifetime intimate partner violence^a victimization and demographic variables, by gender

	Women		Men	
	aOR ^b	95% CI	aOR ^b	95% CI
Race/ethnicity				
Black NH	0.90	0.76–1.06	1.39	1.07–1.81
Asian	0.28	0.18–0.43	0.52	0.30–0.89
NH/PI	0.80	0.33–1.92	0.34	0.12–0.96
AI/AN	1.36	0.97–1.90	1.13	0.69–1.87
Other NH	0.98	0.59–1.61	0.98	0.51–1.89
Multiracial NH	1.74	1.35–2.25	1.82	1.37–2.42
Hispanic	0.48	0.41–0.56	0.76	0.59–0.96
White NH	Ref	Ref	Ref	Ref
Age (years)				
18–24	Ref	Ref	Ref	Ref
25–34	1.55	1.27–1.90	1.45	1.10–1.91
35–44	1.59	1.30–1.94	1.21	0.92–1.59
45–54	1.59	1.30–1.94	1.05	0.80–1.38
55–64	1.21	0.99–1.49	0.75	0.56–0.99
65+	0.41	0.33–0.51	0.28	0.21–0.38
Income (\$)				
<15,000	2.51	2.14–2.95	1.88	1.45–2.42
15,000–24,999	1.74	1.52–1.99	1.75	1.41–2.16
25,000–34,999	1.66	1.45–1.90	1.34	1.08–1.66
35,000–49,999	1.25	1.11–1.42	1.21	1.01–1.44
≥50,000	Ref	Ref	Ref	Ref
Education				
Did not graduate high school	1.29	1.07–1.55	0.99	0.75–1.30
High school graduate	1.07	0.95–1.20	1.03	0.87–1.23
Some college	1.51	1.36–1.68	1.25	1.06–1.48
College graduate	Ref	Ref	Ref	Ref

^aIncludes threatened, attempted, and completed physical violence as well as unwanted sex.

^bControlling for race/ethnicity, age, income, and education.

AI/AN, American Indian, Alaskan Native; NH, Non-Hispanic; NH/PI, Native Hawaiian, Pacific Islander.

targeted prevention efforts, racial/ethnic groups represent complex, heterogeneous, and diverse groups that are likely to benefit from differing prevention efforts.

In addition to differences observed among racial/ethnic groups, IPV prevalence estimates varied by income, age, and education for both women and men. These findings are similar to those found in other studies.¹⁷ One unexpected finding was that the association between education and lifetime IPV was not linear. For both men and women, those who completed some college had significantly higher prevalence than those who graduated from high school but never attended college. One previous study reported higher prevalence of lifetime IPV among those with some college compared to those who only graduated from high school.³ Further research is needed to identify why those who attend college, but do not graduate, are more likely to experience IPV than those who graduate from high school but never attend college.

Strengths

While previous studies have reported prevalence estimates from individual states or from several states,^{18–21} this is the first study to provide state-specific prevalence estimates of IPV for a large number of states using uniform definitions and survey methods. By administering the IPV module over multiple years, states will be able to evaluate IPV prevalence in subpopulations within their state, analyze IPV trends, evaluate prevention programs and policies, and compare the scope of their problem with other states. Additionally, the collection of IPV data within BRFSS will allow analyses of the associations between IPV and the other health behaviors and adverse health outcomes assessed in the BRFSS.

The sample size of the current study is over four times as large as any previous public health study of IPV conducted in the U.S. The large sample size and consistent methods allow for comparisons among a larger number of demographic groups than in previous studies.

Limitations

The IPV prevalence estimates presented here likely underestimate the true prevalence of IPV for several reasons. Because of the limited number of questions that could be asked, questions regarding emotional abuse were not asked, and 12-month completed physical IPV and unwanted sex were combined into one question, making it impossible to estimate their prevalence separately. As mentioned previously, respondents who completed the BRFSS core but did not complete the subsequent IPV module tended to be female, an ethnic/racial minority, had a lower annual income, had less education, and were older than respondents who completed the entire survey. Each of these demographic characteristics, except for advanced age, was associated with higher IPV prevalence, suggesting these results may be an underestimate of the true prevalence of IPV. While data from the study are representative of each participating state/territory, and representative cumulatively of the 18 states and territories surveyed, it is not nationally-representative.

In addition, this study is subject to the same difficulties faced by any RDD telephone study, particularly the difficulty in surveying those not living in a stable household residence (prisons, nursing homes, military bases, college dormitories, shelters, homeless, transient populations) or those without a land-line telephone. The increased use of cellphone-only households, particularly among the young, and declining response rates have provided additional challenges to RDD studies.^{22–27} Many of those who are less likely to be included in this type of study (prisoners, those living in shelters, transient people, and the homeless) may be more likely

to report IPV, giving further support to the idea that the prevalence numbers presented in this study underestimate the true prevalence of IPV.

Conclusion

Lessons for future IPV surveillance efforts may be gleaned from the data, particularly in regard to question timeframe and the frequency with which surveillance is conducted. While lifetime estimates are important in understanding the full scope of IPV prevalence, 12-month estimates are more likely to detect the effects of policy and prevention efforts, particularly at the state level. If states are able to conduct IPV surveillance every 1 to 2 years then a shift in focus to questions estimating 12-month prevalence may be warranted. However, a shift in focus to 12-month estimates may require a larger sample size as many states in the current study obtained unstable estimates, particularly for men. Finally, while the single year of data presented in this study makes it difficult to comment on the optimal frequency with which to conduct IPV surveillance, the repeated administration of the IPV module by states in future BRFSS surveys may speak to this question.

This report provides the first state-level IPV prevalence data for a large number of states. States that administered the module are able to measure the prevalence of IPV in their state and compare the scope of their problem to that of other states. By administering the module over multiple years, states will be able to analyze IPV trends and evaluate prevention programs and policies. Such efforts to regularly monitor IPV prevalence, using uniform definitions and survey methods, provide an important foundation on which to build future public health efforts.

The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention.

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References

1. National Center for Injury Prevention and Control. Costs of intimate partner violence against women in the United States. Atlanta GA: Centers for Disease Control and Prevention (CDC), 2003.
2. Saltzman LE, Fanslow JL, McMahon PM, Shelley GA. Intimate partner violence surveillance: uniform definitions and recommended data elements, Version 1.0. Atlanta GA: National Center for Injury Prevention and Control, CDC, 1999.
3. Coker AL, Davis KE, Arias I, et al. Physical and mental health effects of intimate partner violence for men and women. *Am J Prev Med* 2002;23: 260–8.
4. Coker AL, Smith PH, Bethea L, King MR, McKeown RE. Physical health consequences of physical and psychological intimate partner violence. *Arch Fam Med* 2000;9:451–7.
5. Bonomi AE, Thompson RS, Anderson M, et al. Intimate partner violence and women's physical, mental, and social functioning. *Am J Prev Med* 2006;30:458–66.
6. Tjaden P, Thoennes N. Extent, nature, and consequences of violence against women: findings from the national violence against women survey. Washington DC: National Institute of Justice, CDC, November 2000.
7. Schafer J, Caetano R, Clark CL. Rates of intimate partner violence in the United States. *Am J Public Health* 1998;88:1702–4.
8. Plichta SB, Falik M. Prevalence of violence and its implications for women's health. *Womens Health Issues* 2001;11:244–58.
9. Bachman R, Saltzman LE. Violence against women: estimates from the redesigned National Crime Victimization Survey, Special Report. NCJ 154348, United States Department of Justice, Bureau of Justice Statistics, August 1995.
10. United States Department of Justice, Bureau of Justice Statistics. Intimate partner violence in the United States. Available online at: <http://www.ojp.usdoj.gov/bjs/pub/pdf/ipvus.pdf>.
11. Bachman R. A comparison of annual incidence rates and contextual characteristics of intimate-partner violence against women from the National Crime Victimization Survey (NCVS) and the National Violence Against Women Survey (NVAWS). *Violence Against Women* 2000;6: 839–67.
12. CDC. Behavioral Risk Factor Surveillance System (BRFSS) Users's guide. Available online at: <ftp://ftp.cdc.gov/pub/Data/Brfss/userguide.pdf>.
13. CDC. Behavioral Risk Factor Surveillance System (BRFSS), Modules by category. Available online at: <http://apps.nccd.cdc.gov/BRFSSModules/ModByCat.asp?Yr=2005>.
14. CDC. Behavioral Risk Factor Surveillance System (BRFSS), 2005 summary data quality report. Available online at: http://www.cdc.gov/brfss/technical_infodata/quality.htm.
15. CDC. Behavioral Risk Factor Surveillance System (BRFSS). Available online at: www.cdc.gov/brfss.
16. Hoyert DL, Heron MP, Murphy SL, Kung H. Deaths: final data for 2003. *National vital statistics reports*; vol 54 no 13. Hyattsville MD: National Center for Health Statistics, 2006.
17. Thompson RS, Bonomi AE, Anderson M, et al. Intimate partner violence: Prevalence, types, and chronicity in adult women. *Am J Prev Med* 2006; 30:447–57.
18. CDC. Lifetime and annual incidence of intimate partner violence and resulting injuries—Georgia, 1995. *MMWR Morb Mortal Wkly Rep* 1998; 47:849–53.
19. CDC. Intimate partner violence among men and women—South Carolina, 1998. *MMWR Morb Mortal Wkly Rep* 2000;49:691–4.
20. CDC. Prevalence of intimate partner violence and injuries—Washington, 1998. *MMWR Morb Mortal Wkly Rep* 2000;49:589–92.
21. CDC. Physical violence during the 12 months preceding childbirth—Alaska, Maine, Oklahoma, and West Virginia, 1990–1991. *MMWR Morb Mortal Wkly Rep* 1994;43:132–6.
22. Simon TR, Mercy JA, Barker L. Can we talk? Importance of random-digit-dial surveys for injury prevention research. *Am J Prev Med* 2006;31:406–10.
23. Singer E, Bossarte RM. Incentives for survey participation: when are they “coercive”? *Am J Prev Med* 2006;31:411–8.
24. O'Brien EM, Black MC, Carley-Baxter LR, Simon TR. Sensitive topics, survey nonresponse, and considerations for interviewer training. *Am J Prev Med* 2006;31:419–26.
25. Johnson TP, Holbrook AL, Cho YI, Bossarte RM. Nonresponse error in injury-risk surveys. *Am J Prev Med* 2006;31:427–36.
26. Galesic M, Tourangeau R, Couper MP. Complementing random-digit-dial telephone surveys with other approaches to collecting sensitive data. *Am J Prev Med* 2006;31:437–43.
27. Link MW, Kresnow M-J. The future of random-digit-dial surveys for injury prevention and violence research. *Am J Prev Med* 2006;31:444–50.