

Methodology

Survey coverage

The National Crime Victimization Survey (NCVS) is an annual data collection conducted by the U.S. Census Bureau for the Bureau of Justice Statistics (BJS). The NCVS is a self-report survey in which interviewed persons are asked about the number and characteristics of victimizations experienced during the prior 6 months. The NCVS collects information on nonfatal personal crimes (rape or sexual assault, robbery, aggravated assault, simple assault, and personal larceny) and household property crimes (burglary, motor vehicle theft, and other theft) both reported and not reported to police. In addition to providing annual level and change estimates on criminal victimization, the NCVS is the primary source of information on the nature of criminal victimization incidents. Survey respondents provide information about themselves (such as age, sex, race and ethnicity, marital status, education level, and income) and if they experienced a victimization. For crime victims, data are collected about each victimization incident, including information about the offender (such as age, race and ethnicity, sex, and victim-offender relationship), characteristics of the crime (including time and place of occurrence, use of weapons, nature of injury, and economic consequences), whether the crime was reported to police, reasons why the crime was or was not reported, and experiences with the criminal justice system.

The NCVS is administered to persons age 12 or older from a nationally representative sample of households in the United States. In 2011, about 143,120 persons age 12 or older from 79,800 households across the country were interviewed during the year. Once selected, households remain in the sample for 3 years, and eligible persons in these households are interviewed every 6 months for a total of seven interviews. New households rotate into the sample on an ongoing basis to replace outgoing households that have been in sample for the 3-year period. The sample includes persons living in group quarters (such as dormitories, rooming houses, and religious group dwellings) and excludes persons living in military barracks and institutional settings (such as correctional or hospital facilities) and the homeless. (For more detail, see the *Survey Methodology for Criminal Victimization in the United States, 2008*, NCJ 231173, BJS website, May 2011.)

Nonresponse and weighting adjustments

The 79,800 households that participated in the NCVS in 2011 represents a 90% household response rate. The person level response rate—the percentage of persons age 12 or older in participating households who completed an NCVS interview—was 88% in 2011.

Estimates in this report use data primarily from the 2002 to 2011 NCVS data files weighted to produce annual estimates for persons age 12 or older living in U.S. households. Because the NCVS relies on a sample rather than a census of the entire U.S. population, weights are designed to inflate sample point

estimates to known population totals and to compensate for survey nonresponse and other aspects of the sample design.

The NCVS data files include both household and person weights. The household weight is commonly used to calculate estimates of property crimes, such as motor vehicle theft or burglary, which are identified with the household. Person weights provide an estimate of the population represented by each person in the sample. Person weights are most frequently used to compute estimates of crime victimizations of persons in the total population. Both household and person weights, after proper adjustment, are also used to form the denominator in calculations of crime rates.

The victimization weights used in this analysis account for the number of persons present during an incident and for repeat victims of series incidents. The weight counts series incidents as the actual number of incidents reported by the victim, up to a maximum of ten incidents. Series victimizations are victimizations that are similar in type but occur with such frequency that a victim is unable to recall each individual event or to describe each event in detail. Survey procedures allow NCVS interviewers to identify and classify these similar victimizations as series victimizations and collect detailed information on only the most recent incident in the series. In 2011, about 2% of all victimizations were series incidents. Weighting series incidents as the number of incidents up to a maximum of ten produces more reliable estimates of crime levels, while the cap at 10 minimizes the effect of extreme outliers on the rates. Additional information on the series enumeration is detailed in *Methods for Counting High Frequency Repeat Victimization in the National Crime Victimization Survey*, NCJ 237308, BJS website, April 2012.

For this report, prior to applying the weights to the data, all victimizations that occurred outside of the U.S. were excluded. In 2011, less than 1% of the unweighted victimizations occurred outside of the U.S. and was excluded from the analyses.

Series victimization

As part of ongoing research efforts associated with the redesign of the NCVS, BJS investigated ways to include high-frequency repeat victimizations, or series victimizations, in estimates of criminal victimization. Including series victimizations would obtain a more accurate estimate of victimization. The research findings are detailed in the report *Methods for Counting High-Frequency Repeat Victimization in the National Crime Victimization Survey*, NCJ 237308, BJS website, April 2012.

The NCVS's primary purpose is to accurately estimate the number and type of criminal victimizations that occur each year in the United States. To enumerate and classify victimizations, the NCVS employs an interview procedure that asks respondents to recall specific types of criminal events that occurred over the previous 6 months. Repeatedly victimized persons have experiences that present considerable challenges for the accurate counting and description of criminal events. These experiences involve multiple crimes that are often

indistinguishable to victims, making it difficult for them to separate the details of each event. Such experiences may include intimate partner violence or bullying by schoolmates.

To handle these repeated victimizations, the NCVS employs a series victimization protocol. Currently, the NCVS records a series victimization when the respondent reported experiencing six or more similar crimes during the 6-month reference period and was unable to recall or describe each event in detail. If all of these conditions are met, the NCVS interviewer records the victim's report of the number of times this type of victimization occurred and collects detailed information for only the most recent victimization.

Although information about series victimizations is collected in the NCVS, BJS typically excluded series victimizations from annual estimates of crime in prior *Criminal Victimization* bulletins. Given findings from the research, BJS now includes series victimizations using the victim's estimates of the number of times the victimizations occurred over the past 6 months, capping the number of victimizations within each series at a maximum of 10. This strategy for counting series victimizations balances the desire to estimate national rates and account for the experiences of persons with repeat victimizations while noting that some estimation errors exist in the number of times these victimizations occurred. This bulletin is the first to include series victimizations throughout the entire report, and all victimization estimates in this report reflect this new counting strategy.

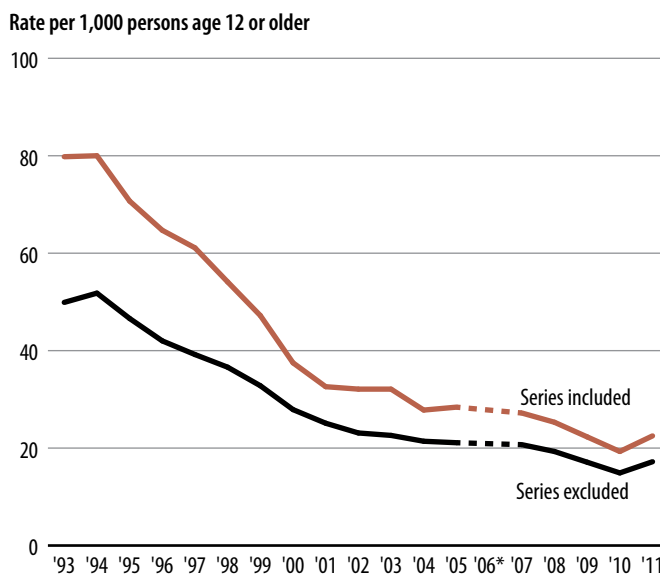
Including series victimizations in national rates results in rather large increases in the level of violent victimization; however, trends in violence are generally similar regardless of whether series victimizations are included. Both show a similar pattern over the 19-year period from 1993 to 2011 (figure 2). When violent victimization rates excluded series incidents, the decline from 1993 to 2011 was 66%; when series incidents were included in the rates, the decline was 72%. Similarly, both rates declined by about 30% from 2002 to 2011. The violent victimization rate increased by 15% between 2010 and 2011 with series victimizations excluded and increased by 17% with series victimizations included.

The two violent crime victimization rates converged because a decrease in the number of series incidents occurred in the U.S. In 1993, series incidents (when counted as one victimization) accounted for almost 7% of all violent crime victimizations, and by 2011 series incidents accounted for about 3% of all violent victimizations. When using the new counting rule, series accounted for almost 37% of all violent victimization in 1993 and 24% in 2011.

Standard error computations

When national estimates are derived from a sample, as is the case with the NCVS, caution must be taken when comparing one estimate to another or when comparing estimates over time. Although one estimate may be larger than another, estimates based on a sample have some degree of sampling error. The sampling error of an estimate depends on several

FIGURE 2
Violent victimization with series included and excluded, 1993–2011



*The 2006 rate is not shown due to methodological changes in the 2006 NCVS. See *Criminal Victimization, 2007*, NCJ 224390, BJS website, December 2008, for more information.

Source: Bureau of Justice Statistics, National Crime Victimization Survey, 1993–2011.

factors, including the amount of variation in the responses, the size of the sample, and the size of the subgroup for which the estimate is computed. When the sampling error around the estimates is taken into consideration, the estimates that appear different may, in fact, not be statistically different.

One measure of the sampling error associated with an estimate is the standard error. The standard error can vary from one estimate to the next. In general, for a given metric, an estimate with a small standard error provides a more reliable approximation of the true value than an estimate with a large standard error. Estimates with relatively large standard errors are associated with less precision and reliability and should be interpreted with caution.

In order to generate standard errors around numbers and estimates from the NCVS, the Census Bureau produced generalized variance function (GVF) parameters for BJS. The GVFs take into account aspects of the NCVS complex sample design and represent the curve fitted to a selection of individual standard errors based on the Jackknife Repeated Replication technique. The GVF parameters were used to generate standard errors for each point estimate (such as counts, percentages, and rates) in the report. For average annual estimates, standard errors were based on the ratio of the sums of victimizations and respondents across years.

In this report, BJS conducted tests to determine whether differences in estimated numbers and percentages were statistically significant once sampling error was taken into account. Using statistical programs developed specifically

for the NCVS, all comparisons in the text were tested for significance. The primary test procedure used was Student's t-statistic, which tests the difference between two sample estimates. To ensure that the observed differences between estimates were larger than might be expected due to sampling variation, BJS set the significance level at 95%.

Data users can use the estimates and the standard errors of the estimates provided in this report to generate a confidence interval around the estimate as a measure of the margin of error. The following example illustrates how standard errors can be used to generate confidence intervals:

According to the NCVS, in 2011, the victimization rate for violent crime was 22.5 per 1,000 persons (see table 2). Using the GVFs, BJS determined that the estimate has a standard error of 0.9 (see appendix table 2). A confidence interval around the estimate was generated by multiplying the standard errors by ± 1.96 (the t-score of a normal, two-tailed distribution that excludes 2.5% at either end of the distribution). Therefore, the confidence interval around the 22.5 estimate from 2011 is $22.5 \pm 0.9 \times 1.96$ or (20.8 to 24.3). In other words, if different samples using the same procedures were taken from the U.S. population in 2011, 95% of the time the rate of violent crime victimizations would fall between 20.8 and 24.3 per 1,000.

In this report, a coefficient of variation (CV), representing the ratio of the standard error to the estimate, was also calculated for all estimates. CVs provide a measure of reliability and a means to compare the precision of estimates across measures with differing levels or metrics. In cases where the CV was greater than 50%, or the unweighted sample had 10 or fewer cases, the estimate was noted with a "!" symbol (interpret data with caution. Estimate based on 10 or fewer sample cases, or the coefficient of variation exceeds 50%).

Methodological changes to the NCVS in 2006

Methodological changes implemented in 2006 may have affected the crime estimates for that year to such an extent that they are not comparable to estimates from other years. Evaluation of 2007 and later data from the NCVS conducted by BJS and the Census Bureau found a high degree of confidence that estimates for 2007, 2008, 2009, and 2010 are consistent with and comparable to estimates for 2005 and previous years. The reports, *Criminal Victimization, 2006*, NCJ 219413, December 2007; *Criminal Victimization, 2007*, NCJ 224390, December 2008; *Criminal Victimization, 2008*, NCJ 227777, September 2009; *Criminal Victimization, 2009*, NCJ 231327, October 2010; and *Criminal Victimization, 2010*, NCJ 235508, September 2011, are available on the BJS website.

Average annual rate of change

The average annual rate of change (r) was calculated as—where

$$r = \left(\frac{\ln\left(\frac{P_t}{P_{t-n}}\right)}{n} \right) \times 100$$

P_t = number or rate in the current year

P_{t-n} = number or rate in the nth prior year

n = number of years

Historical changes to the NCVS violent victimization rate

Since 1993, the rate of violent and serious violent victimization has declined by over 70%

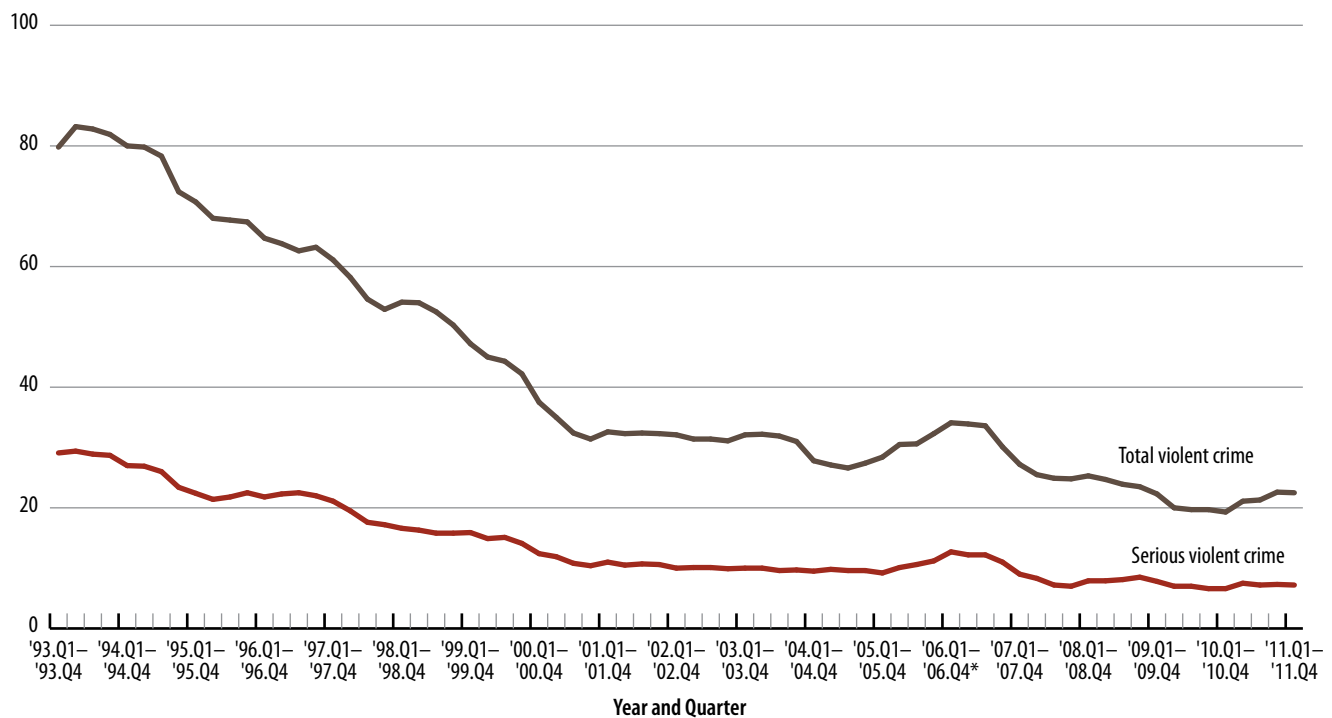
Violent victimization rates by quarter and year show that victimization tends to fluctuate within and across years (figure 3). Each point on the figure represents the average victimization rate from the previous 4 quarters. From quarters 1 to 4 in 1993 to quarters 1 to 4 in 2011, the rate of violent victimization declined from 79.8 to 22.5 per 1,000 persons. During this same time period, the rate of serious violent victimization declined from 29.1 to 7.2 per 1,000. Since 1993, the rate of violent and serious violent victimization has declined by over 70%.

The 2010 to 2011 change in the annual violent victimization rate of 3.3 per 1,000 is smaller than the average change over the past 19 years

From 2010 to 2011, the percentage change in the violent victimization rate from 19.3 to 22.5 per 1,000 persons represents a 17% increase. Historically, the increase of 17% is relatively large, but the interpretation should consider how percentage change is calculated. The size of the percentage change from one year to the next is determined by the size of the raw rate difference from year 1 to year 2 and the size of the rate in year 1. The size of the percentage change will be larger when the change occurs on a smaller rate. The 2010 to 2011 change in the annual violent victimization rate of 3.3 crimes per 1,000 (19.3 to 22.5) is smaller than the average change over the past 19 years.

FIGURE 3
Total violent and serious violent victimizations, by rolling quarters, 1993–2011

Rate per 1,000 persons age 12 or older



*Due to methodological changes in the 2006 NCVS, use caution when comparing 2006 criminal victimization estimates to other years. See *Criminal Victimization, 2007*, NCJ 224390, BJS website, December 2008, for more information.

Source: Bureau of Justice Statistics, National Crime Victimization Survey, 1993–2011.

Continued on next page

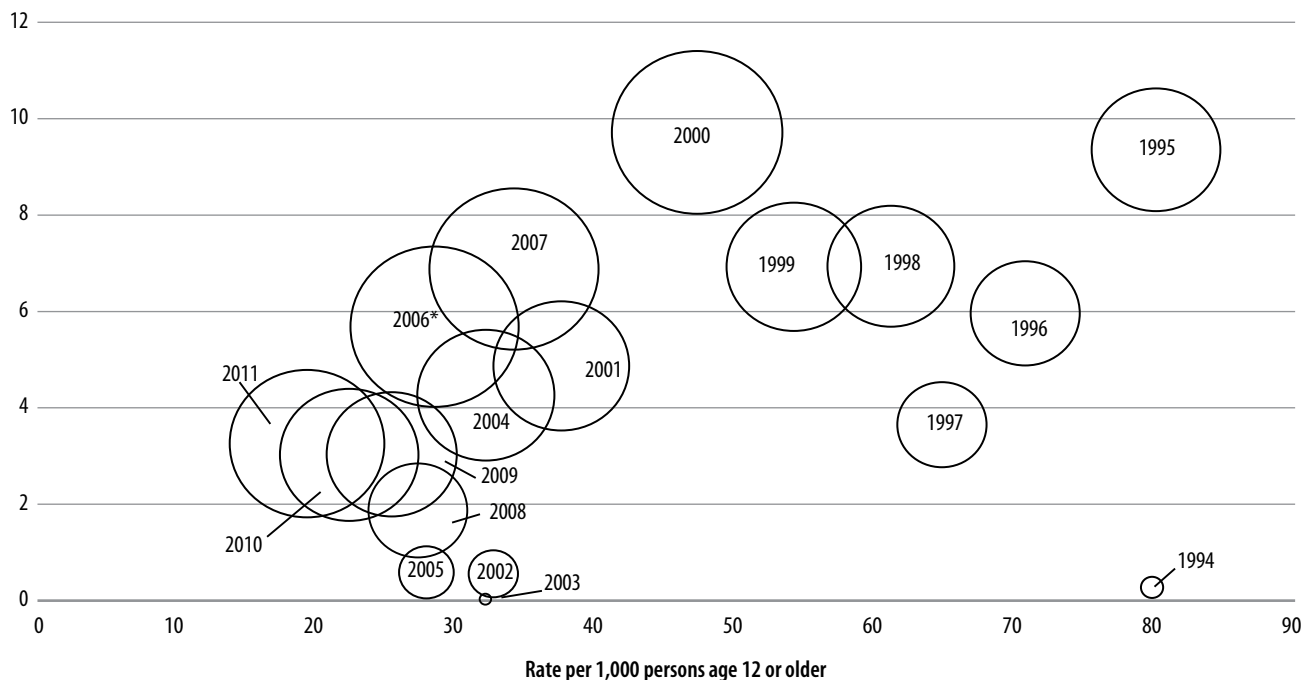
The vertical axis on the left side of the chart shows the absolute raw rate difference from one year to the next (figure 4). It is simply the difference in the violent crime rate from one year to the next. The two largest annual changes in violent crime came in 1995 and 2000 (the upper portion of the chart). The violent victimization rate declined by 9.7 violent victimizations per 1,000 persons from 47.2 per 1,000 in 1999 to 37.5 in 2000. Similarly, from 1994 to 1995, the violent victimization rate declined by 9.4 violent victimizations from a rate of 80.0 to 70.7 per 1,000 persons. The smallest change (the lower portion of the chart) came in 1994, 2002, 2003, and 2005 where the annual change in the rate was less than 1 violent victimization per 1,000 persons.

For example, the rate changed from 79.8 in 1993 to 80.0 in 1994 for an increase of 0.3 violent victimizations per 1,000 persons. By comparison, the current increase from 2010 to 2011 was 3.3 violent victimizations per 1,000 persons. This average raw rate change is smaller than the average rate change of 4.3 crimes per 1,000 across the entire period from 1993 to 2011. The annual range of change from 1993 to 2011, either an increase or decrease, was between 0 and 9.7 violent victimizations per 1,000 persons.

The horizontal axis represents the violent victimization rate for a given year ranging from a low (left side of the chart) of 19.3 per 1,000 persons in 2010 (represented by the 2011 circle) to a high (right side of the chart) of 80.0 per 1,000 in 1994 and 1995. As the chart shows, when there is a large rate change on a small base (upper left portion of the chart), the percentage change as noted by the size of the circle tends to be relatively large. With the same large rate change on a larger base (upper right side of the chart), the percent change or circle size is not as large. For example, from 1996 to 1997 (represented by the 1997 circle), violent crime declined by 3.7 violent victimizations (from 64.7 to 61.1 per 1,000 persons), a comparable change to the 2010 to 2011 increase of 3.3 violent victimizations (from 19.3 to 22.5 per 1,000 persons). However, the percentage change (denoted by the size of the circle) was 6% from 1996 to 1997 compared to the 17% from 2010 to 2011. This difference was due to the historically smaller rate of 19.3 per 1,000 in 2010 compared to the relatively large rate of 64.7 per 1,000 in 1996.

FIGURE 4
Change in violent victimization rates, 1993–2011

Absolute raw rate point change per 1,000 persons age 12 or older



Note: Circle size indicates size of the absolute percent change.

*Due to methodological changes in the 2006 NCVS, use caution when comparing 2006 criminal victimization estimates to other years. See *Criminal Victimization, 2007*, NCJ 224390, BJS website, December 2008, for more information.

Source: Bureau of Justice Statistics, National Crime Victimization Survey, 1993–2011.

APPENDIX TABLE 1**Standard errors for table 1: Number of violent victimizations, by type of violent crime, 2002, 2010, and 2011**

Type of violent crime	Number of victimizations		
	2002	2010	2011
Violent crime	247,489	214,261	232,076
Rape/sexual assault	38,253	36,057	34,800
Robbery	53,764	56,078	55,908
Assault	226,598	190,435	211,601
Aggravated assault	84,915	71,865	81,430
Simple assault	195,965	164,138	182,739
Domestic violence	85,402	86,238	101,189
Intimate partner violence	69,504	68,480	76,209
Violent crime involving injury	106,799	93,546	105,560
Serious violent crime	119,078	109,276	114,609
Serious domestic violence	45,187	44,780	46,272
Serious intimate partner violence	35,732	36,554	37,989
Serious violent crime involving weapons	96,625	83,309	93,633
Serious violent crime involving injury	61,712	62,690	67,097

APPENDIX TABLE 2**Standard errors for table 2: Rate of violent victimization, by type of violent crime, 2002, 2010, and 2011**

Type of violent crime	Victimization rates per 1,000 persons age 12 or older		
	2002	2010	2011
Violent crime	1.1	0.8	0.9
Rape/sexual assault	0.2	0.1	0.1
Robbery	0.2	0.2	0.2
Assault	1.0	0.7	0.8
Aggravated assault	0.4	0.3	0.3
Simple assault	0.8	0.6	0.7
Domestic violence	0.4	0.3	0.4
Intimate partner violence	0.3	0.3	0.3
Violent crime involving injury	0.5	0.4	0.4
Serious violent crime	0.5	0.4	0.4
Serious domestic violence	0.2	0.2	0.2
Serious intimate partner violence	0.2	0.1	0.1
Serious violent crime involving weapons	0.4	0.3	0.4
Serious violent crime involving injury	0.3	0.2	0.3

APPENDIX TABLE 3**Standard errors for table 3: Number of property victimizations, by type of property crime, 2002, 2010, and 2011**

Type of property crime	Number of victimizations		
	2002	2010	2011
Total	361,425	304,448	388,678
Household burglary	128,177	122,469	149,935
Motor vehicle theft	62,552	46,928	49,670
Theft	312,862	260,452	329,200

APPENDIX TABLE 4**Standard errors for table 4: Rate of property victimization, by type of property crime, 2002, 2010, and 2011**

Type of property crime	Victimization rates per 1,000 households		
	2002	2010	2011
Total	3.3	2.5	3.2
Household burglary	1.2	1.0	1.2
Motor vehicle theft	0.6	0.4	0.4
Theft	2.8	2.1	2.7

APPENDIX TABLE 5**Standard errors for table 5: Rate of violent victimization, by demographic characteristics of victim, 2002, 2010, and 2011**

Demographic characteristic of victim	Violent crime			Serious violent crime		
	2002	2010	2011	2002	2010	2011
Total	1.1	0.8	0.9	0.5	0.4	0.4
Sex						
Male	1.4	1.1	1.3	0.7	0.6	0.7
Female	1.3	1.1	1.1	0.7	0.6	0.6
Race/Hispanic origin						
White	1.2	1.0	1.1	0.5	0.5	0.5
Black	2.5	2.2	2.3	1.7	1.3	1.4
Hispanic	2.3	1.6	2.0	1.4	0.9	1.0
American Indian/Alaska Native	14.4	14.7	12.3	6.8	11.4	6.4
Asian/Native Hawaiian/other Pacific Islander	2.2	1.9	2.1	1.1	0.8	0.9
Two or more races	~	9.2	10.2	~	5.2	6.3
Age						
12-17	3.6	2.5	3.1	1.7	1.5	1.4
18-24	3.7	2.6	3.4	2.0	1.7	1.8
25-34	2.4	2.1	2.1	1.2	0.9	1.1
35-49	1.5	1.4	1.6	0.7	0.7	0.8
50-64	1.3	1.1	1.2	0.6	0.6	0.6
65 or older	0.7	0.6	0.8	0.4	0.3	0.4
Marital status						
Never married	2.3	1.7	1.9	1.1	0.9	1.0
Married	0.9	0.6	0.8	0.5	0.3	0.4
Widowed	1.4	1.4	1.1	1.1	0.9	0.4
Divorced	3.2	2.9	3.1	1.5	1.5	1.4
Separated	8.0	7.4	8.6	5.3	3.9	5.0

~Not applicable.

APPENDIX TABLE 6**Standard errors for table 6: Rate of violent victimization, by household location, 2002, 2010, and 2011**

Household location	Violent crime			Serious violence crime		
	2002	2010	2011	2002	2010	2011
Total	1.1	0.8	0.9	0.5	0.4	0.4
Region						
Northeast	1.9	1.5	1.7	0.8	0.9	0.9
Midwest	2.1	1.6	1.8	1.0	0.8	0.9
South	1.4	1.1	1.2	0.8	0.6	0.7
West	2.0	1.6	1.8	0.9	0.8	0.9
Location of residence						
Urban	2.0	1.5	1.6	1.1	0.8	0.9
Suburban	1.3	1.0	1.1	0.6	0.5	0.5
Rural	1.9	1.6	1.8	0.9	0.7	1.0

APPENDIX TABLE 7**Standard errors for table 8: Percent of victimizations reported to the police, by type of crime, 2002, 2010, and 2011**

Type of crime	Percent reported		
	2002	2010	2011
Violent crime	1.4%	1.8%	1.8%
Rape/sexual assault	5.0	6.1	5.9
Robbery	3.7	4.3	4.4
Assault	1.5	1.9	1.9
Aggravated assault	2.7	3.6	3.4
Simple assault	1.6	2.1	2.0
Domestic violence	2.8	3.1	3.1
Intimate partner violence	3.2	3.7	3.8
Violent crime involving injury	2.4	3.0	3.0
Serious violent crime	2.2%	2.7%	2.7%
Serious domestic violence	3.8	5.0	5.5
Serious intimate partner violence	4.8	6.1	6.4
Serious violent crime involving weapons	2.4	3.3	3.2
Serious violent crime involving injury	3.2	4.0	4.1
Property crime	0.9%	0.9%	0.9%
Burglary	1.7	1.8	1.8
Motor vehicle theft	2.1	2.9	2.9
Theft	0.9	1.0	1.0

APPENDIX TABLE 9**Standard errors for figure 2: Violent victimization with series included and excluded, 1993–2011**

	Series excluded	Series included
1993	1.5	2.0
1994	1.2	1.6
1995	1.1	1.5
1996	1.1	1.4
1997	1.1	1.4
1998	1.3	1.6
1999	1.1	1.4
2000	1.0	1.3
2001	1.0	1.1
2002	0.9	1.1
2003	0.8	1.0
2004	0.8	0.9
2005	0.9	1.1
2006	0.9	1.0
2007	0.8	1.0
2008	0.8	0.9
2009	0.8	0.9
2010	0.7	0.8
2011	0.8	0.9

APPENDIX TABLE 8**Standard errors for table 9: Rate of victimizations reported and not reported to the police, by type of crime, 2002, 2010, and 2011**

Type of crime	Reported to police			Not reported to police		
	2002	2010	2011	2002	2010	2011
Violent crime	0.7	0.6	0.6	0.7	0.5	0.6
Rape/sexual assault	0.1	0.1	0.1	0.1	0.1	0.1
Robbery	0.2	0.2	0.2	0.1	0.1	0.1
Assault	0.6	0.5	0.6	0.6	0.5	0.6
Aggravated assault	0.3	0.2	0.3	0.2	0.2	0.2
Simple assault	0.5	0.4	0.5	0.6	0.4	0.5
Domestic violence	0.3	0.3	0.3	0.2	0.2	0.2
Intimate partner violence	0.2	0.2	0.2	0.2	0.1	0.2
Violent crime involving injury	0.3	0.3	0.3	0.3	0.2	0.2
Serious violent crime	0.4	0.3	0.4	0.3	0.3	0.3
Serious domestic violence	0.2	0.1	0.1	0.1	0.1	0.1
Serious intimate partner violence	0.1	0.1	0.1	0.1	0.1	0.1
Serious violent crime involving weapons	0.3	0.2	0.3	0.2	0.2	0.2
Serious violent crime involving injury	0.2	0.2	0.2	0.1	0.1	0.1
Property crime	1.9	1.5	1.7	2.5	1.9	2.3
Burglary	0.9	0.8	0.8	0.7	0.6	0.8
Motor vehicle theft	0.5	0.4	0.4	0.2	0.2	0.2
Theft	1.5	1.1	1.3	2.3	1.8	2.1



The Bureau of Justice Statistics is the statistical agency of the U.S. Department of Justice. James P. Lynch is the director.

This report was written by Jennifer L. Truman, Ph.D., and Michael Planty, Ph.D. Lynn Langton verified the report.

Jill Thomas edited the report, and Barbara Quinn and Morgan Young produced the report under the supervision of Doris J. James.

October 2012, NCJ 239437



Office of Justice Programs
Innovation • Partnerships • Safer Neighborhoods
www.ojp.usdoj.gov