"Subpopulations at High Risk for Rape and Sexual Assault: What Does the NCVS Tell Us?"

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INTRODUCTION

In response to a request by the Committee on National Statistics' Panel on Measuring Rape and Sexual Assault in Bureau of Justice Statistics Surveys, this report identifies subgroup differences in risk for rape and sexual assault among females ages 12 and above using data from the National Crime Victimization Survey (NCVS). The analyses also examine how methodological variations that occur during the administration of the NCVS are associated with the reporting of rape or sexual assault during the interview.

Findings that address these issues are organized into four sections. In the first section, the range of incidents that are included under the category "rape and sexual assault" as found in NCVS annual victimization reports are described for the period 1993 to 2009. In addition, the sensitivity of the rape and sexual assault rates to the ways in which "series" incidents are counted is examined. Thus, the first section of the report focuses on what incidents the NCVS rates of rape and sexual assault are capturing, and the importance of counting rules for the rate estimates.

To examine subgroup differences in risk, the second section of the report displays long-term trends (1973 to 2009) in rape and sexual assault rates for selected subgroups, and the trends are compared to those for other forms of serious violence experienced by females. Long-term trends are made possible by including National Crime Survey (NCS) data in the analysis and by up-weighting the NCS rates to take into account the methodological changes that occurred during the redesign of the survey in 1992 and 1993.[2] Subgroup trends are examined across the

[2] Data collection for the NCS began in 1973 and important aspects of its methodology were redesigned in order to improve the reporting of crimes that are difficult to measure, such as rape and sexual assault, violence committed by non-strangers, and incidents that victims may not consider to be a "crime" (Kindermann, Lynch, and Cantor, 1997). The new questions and cueing strategies were phased-in during the period January 1, 1992 through June 30, 1993. Because both NCS and NCVS instruments were administered during the phase-in period, adjustment weights for the NCS can be estimated using the ratio of the NCVS/NCS rates obtained during

longer NCS-NCVS period so that it is possible to assess whether the observed subgroup differences are enduring or have changed over time. The subgroups selected for comparison are based on characteristics that are available in the data and suggested in prior research to be related to risk for rape and sexual assault. These subgroup characteristics include race and ethnicity, age groups, urban, suburban, or rural place of residence, household poverty status, and marital status (for women ages 18 and above).

In the third section of the report, pooled 1994-2009 NCVS interview data are used to model the relationships between methodological factors of the survey and the reporting of rape and sexual assaults. These analyses take advantage of methodological variation within the survey to assess whether the reporting of rape and sexual assault is significantly associated with the mode of administration at the time of the interview (telephone versus in-person), the presence of others during the interview, whether the interview was bounded, and the length of time the respondent has been in the sample. The effects of these methodological characteristics also are assessed for their effects on the reporting of other forms of serious violence so that the degree to which these factors appear to be unique to rape and sexual assault victimization reporting in the NCVS (as opposed to more general issues of reporting) can be ascertained.

The fourth section of the report also uses the pooled 1994-2009 NCVS interview data, but these multivariate analyses assess how key subgroup characteristics are associated with the reporting of rape and sexual assault independently of one another and controlling for the methodological characteristics of the interview. Subgroup characteristics include those examined in section two, but some additional factors also are considered. These are characteristics that are unavailable in earlier NCS data (such as college student status and living

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this period. The NCVS instrument produced rates of rape that were 2.57 times higher than those of the NCS, and this value is used here to up-weight the NCS rates.

quarters, membership in the armed forces, and family structure for females under age 18), as well as those characteristics for which the annual sample size is too small to permit reliable estimates of rates for purposes of detecting subgroup differences in level or trend (such as is the case for American Indians and Asians). Best-fitting models are presented for rape and sexual assault victimization, as well as for other forms of serious violence so that it can be determined whether the significance and magnitude of observed subgroup differences in rape and sexual assault is unique or generalizable to other forms of violence.

INCIDENTS COMPOSING RAPE AND SEXUAL ASSAULT IN THE NCVS

When the NCS was redesigned (and became known as the NCVS) in 1993, the types of incidents that would be included in the survey's broader measure of sexual violence changed. Prior to the redesign, "rape" incidents in the NCS were described as those involving: "*carnal knowledge through the use of force or threat of force, including attempts. Attempted rape and rape may `consist of verbal threats of rape. Rape includes victimization of both males and females"* (Rand, Lynch, and Cantor, 1997:8). Beginning with the NCVS redesign, "sexual assault" incidents falling outside this restricted definition were added to the category currently referred to as "rape and sexual assault". Sexual assault incidents are defined as: *"A wide range of victimizations, separate from rape or attempted rape. These crimes include attacks or attempted attacks generally involving unwanted sexual contact between victim and offender. Sexual assaults may or may not involve force and include such things as grabbing or fondling. Sexual assault also includes verbal threats"* (Rand, Lynch, and Cantor, 1997:8). Beyond the ability to include sexual assaults in the estimates, the key differences between the NCS and NCVS consisted of changes in the questions and cueing used to elicit reports of sexual violence

incidents (see Kindermann, Lynch, and Cantor, 1997, for cues and questions used in the NCS and NCVS).

The most recent definition of incidents falling under the category "rape and sexual assault" provides more specificity about what is meant by the term rape: "*Forced sexual intercourse including both psychological coercion as well as physical force. Forced sexual intercourse means vaginal, anal or oral penetration by the offender(s). This category also includes incidents where the penetration is from a foreign object such as a bottle. Includes attempted rapes, male as well as female victims, and both heterosexual and homosexual rape. Attempted rape includes verbal threats of rape."* The definition of sexual assault incidents continues to be defined as noted above (see: http://bjs.ojp.usdoj.gov/index.cfm?ty=tdtp&tid=9 for definitions used in the NCVS).

It should be emphasized that the structure of the cueing and questions for obtaining information about rapes and sexual assaults do not require the respondent to define the event as such. Rather, when a subject responds positively to one of the cues or questions about the various forms of assault, additional details about the victimization are gathered in an "incident" form, and following completion of the interview, those details are used to classify the event into one of the eight subcategories of events that fall under the heading of "rape and sexual assault" in the NCVS. A listing of these subcategories of rape and sexual assault is provided in Table 1.

Table 1 about here

The numbers shown in Table 1 represent the weighted number of victimizations reported by females who were interviewed from 1993 through 2009, and indicate the sensitivity of those estimates to how "series" victimization reports are handled. The use of a series victimization protocol occurs when a respondent reports having experienced six or more similar crimes during

the six-month reference period and they are unable to recall or describe each incident in detail. In such instances, the interviewer records the victim's report of the number of times this type of incident occurred and collects details only for the most recent victimization (see Lauritsen et al. 2012, for a discussion of the series victimization counting issue). This protocol is used primarily to reduce respondent burden (victims who are able and willing to report details on each incident continue to do so). There are various ways of handling series victimizations for the purpose of estimating victimization rates, and the impact of the two options is shown in Table 1. The first set of estimates treat series incidents equal to zero, which has been the standard treatment in many of the annual NCVS reports. The second set of estimates treats series incidents as the number of times the respondent said the incident occurred, up to a maximum of ten incidents per series victimization reported during a six-month recall period. Estimates of violent victimization based on the latter treatment of series incidents were reported for the first time in the annual NCVS report covering 2010 (Truman, 2011).

When series incidents are excluded from the rates, the estimated number of rape and sexual assault incidents that females experienced during 1993-2009 is 4,402,337. When series incidents are included in the rates and counted as described above, the estimated number is 6,788,958. Thus, the exclusion of series incidents results in estimates of rape and sexual assault that are about 35% lower than the estimates based on the new BJS counting rule using a maximum of 10 per series incident.

Although the treatment of series victimizations has a notable effect on estimates of the number of rapes and sexual assaults, it does not have much effect on the degree to which the various types of incidents composing the rape and sexual assault measure contribute to the overall total. Under both counting rules, the primary types of incidents captured by the NCVS

instrument and defined as rape and sexual assault are "completed rape," "attempted rape," and "sexual assault without (other) injury." When series incidents are excluded from the estimates, these three categories compose about 72% of all the incidents classified as rape and sexual assault, and when series incidents are included, the three categories compose about 67% of the incidents. Attempts and threats constitute a relatively small proportion (about 30% to 31%) of all of the rape and sexual assault victimizations captured by the NCVS. Thus, the NCVS rape and sexual assault rates are not dominated by victimizations that are "less serious" (such as unwanted sexual contact without force) which is often the case when broader categories of violent victimization are used.[3]

To assess whether the proportions shown in Table 1 vary much over time, annual estimates of the components of rape and sexual assault (including series victimizations) are shown in Figure 1. This figure suggests that the relative contribution of each component of the measure has not changed much between 1993 and 2009. Generally speaking, rape, attempted rape, and sexual assault without other injury remain the primary subtypes of sexual violence recorded in the NCVS in each of the years, and no category appears to be increasingly dominating the measure over time.

Figure 1 about here

Given that one of the goals of the NCVS is to provide an indicator of criminal victimization separate from indicators generated by police activity, and to serve as an independent calibration for the Uniform Crime Reports (UCR), it may be useful to compare NCVS and UCR estimates of rape to determine if they are generally similar in level and trend (for a discussion of the goals of the NCVS, see Groves and Cork, 2008). To make the

[3] For example, the NCVS "total violent victimization" rate is dominated by simple assault.

comparisons more valid, it is necessary to restrict the NCVS estimates to completed and attempted "rapes" because, as of this writing, the UCR does not include other forms of sexual assault in their estimates. It is also necessary to limit NCVS rapes to those incidents that the victim said were reported to the police. However, even with such restrictions, there are reasons to expect the estimates to differ some. The UCR estimates should be somewhat higher because they include crimes committed against persons under age 12 as well as those in which the victim may be homeless, or living in an institutional setting. Also, the UCR data includes a difficult-to quantify amount of error associated with agency non-participation, while the NCVS data include error associated with sampling and sample coverage, as well as non-response (see Lynch and Addington, 2007, for discussions of UCR-NCVS comparisons).

Figure 2 about here

Figure 2 shows the NCVS annual estimates of rape and attempted rapes reported to the police (with 95% confidence intervals around those estimates) and the UCR estimates of the same for the period of 1993-2009. This figure shows that these two sets of estimates tend to be roughly comparable to each other because in about half of the years, the UCR and NCVS estimates are not significantly different from each other. However, in other years, the estimates differ, and in most of these instances (5 out of 7 years) this is because the UCR estimates are higher than those provided by the NCVS. Unfortunately, it is not possible to use these data to determine precisely what accounts for the observed differences in these annual estimates.

Although these annual estimates differ some, both the UCR and the NCVS national estimates suggest similar trends in the number of rapes and attempted rapes reported to the police – more specifically, both data sources suggest that the number of incidents exhibited little change and no clear trend from 1995 to 2009. (Note that while the number of incidents is fairly stable,

the rates derived from both data sources would show declines during this period due to increases in the population.) Thus, there is some evidence that these specific components of the NCVS rape and sexual assault measure (i.e. rapes and attempted rapes reported to the police) are externally valid in comparison to the UCR.

LONG-TERM TRENDS IN RAPE AND SEXUAL ASSAULT BY SUBGROUPS

To assess the degree to which there are subgroup differences in risk for rape and sexual assault, and whether the observed subgroup differences are enduring or have changed over time, annual rape rates (for the NCS period) and rape and sexual assault rates (for the NCVS period) are estimated for a variety of female subgroups. The selection of subgroup characteristics is limited to those demographic characteristics for which data have been gathered since 1973, and for those groups whose sample sizes permitted 'reasonable' rate estimations. Comparisons are made by *race and ethnicity* for non-Latina blacks, non-Latina whites, and Latinas; by *age* for females ages 12 to 17, 18 to 34, 35 to 49, and 50 and older; by *type of area* for urban, suburban, and rural females; by *marital status* for women (18 and above) who are married, never married, and divorced/separated; and by *poverty status* for females living in households at/below the federal poverty line versus above the poverty line. These findings are compared to those obtained for other forms of serious violence to see whether subgroup differences in risk for rape and sexual assault are unique or similar to those for other forms of violence.[4]

Figure 3 shows the aggregate long-term trends in rape and sexual assault and other forms of serious violence against females for the period 1973-2009 using data from the NCS and

[4] For further methodological detail on how each of the rates were estimated, see Lauritsen and Heimer (2009): https://www.ncjrs.gov/pdffiles1/nij/grants/229133.pdf.

NCVS. Because of the addition of sexual assault estimates in the NCVS years, separate trends are presented for rape (which includes completed and attempted rape) and for rape and sexual assault (which includes all of the components previously shown in Table 1). The NCS rape estimates were up-weighted by a factor of 2.57 as indicated by assessments of the redesign effect. Other forms of serious violence include robbery and aggravated assault victimization (which includes any form of nonsexual assault involving the use of a weapon or resulting in serious injury). Aggravated assault rates in the NCS are up-weighted by a factor of 1.23, and robbery rates are unchanged, to reflect the effects of the redesign. The index for rape and sexual assault rates appears on the left side of the figure (labeled "RSA"), while the index for other serious violent crime appears on the right side (label "SVC"). To better depict the trends, all rates in this report are smoothed using 3-year moving averages.

Figure 3 about here

The NCS/NCVS trends suggest that there have been noteworthy decline in these forms of violence against women over the past four decades, particularly since the early 1990s. They also suggest that although risks for other forms of violence (robbery and aggravated assault combined) are higher than those for rape and sexual assault (note the differences in the scales), the overall trends are very similar. The victimization rates exhibit faster declines than the numbers of incidents (not shown) due to increases in population size over time. Although the aggregate decline in female victimization shown here is similar to that observed in homicide data, there has been little research that assesses the factors associated with the decline in non-lethal female victimization, or whether those sources differ according to gender of the victim (see, e.g., Lauritsen and Heimer, 2008).

Figure 4 disaggregates the NCS/NCVS rape and sexual assault trends by race and ethnicity of the victim for the three largest race/ethnic groups in the country. This figure suggests that non-Latina black women experienced higher rates of rape and sexual assault than Latina and non-Latina white women, particularly prior to the early 1990s. NCVS rates of rape and sexual assault victimization tend to be slightly lower among Latinas compared to non-Latina whites. Since the early 1990s, the trends for each of the subgroups have been fairly similar, however it appears that the magnitude of subgroup differences in risk have varied periodically over the past four decades.

Figure 4 about here

Figure 5 disaggregates the rape and sexual assault rates by age group. This figure suggests that younger females have much higher risks for rape and sexual assault than do older females. It also indicates that since the early 1990s, the rates have been highest for females ages 12 to 17. With the exception of women ages 50 and older (where no clear trend is observed), the rates are much lower in the most recent years compared to the early 1990s. Compared to the 1970s, the greatest declines in risk have occurred among women ages 18 to 34.

Figure 5 about here

To examine differences across type of place, Figure 6 disaggregates rates of rape and sexual assault according to urban, suburban, and rural residence.[5] For most of the time series, the risk for sexual violence has been highest among females living in urban areas, and rates have been relatively comparable for those living in suburban and rural settings. Long-term trends have been generally similar for women living in all three types of places, however an increase in rural rates appears to have occurred around 2006, resulting in comparable rates of sexual

[5] Data indicating whether the respondent lived in a rural, suburban, or urban place is missing in the NCS public-use files for the years 1977-1979.

violence for women in rural and urban areas. However, caution is required in assessing the apparent abruptness of this increase in rural areas due to a unique set of issues that arose in the administration of the NCVS in 2006 (see Rand, 2008). These issues were associated with changes in the survey mode (from PAPI to CAPI), but more so to new sample implementation which disproportionately affected rural areas. It should be noted that the average rape and sexual assault rates for urban, suburban, and rural areas for the period 2007 through 2009 (i.e., excluding the 2006 increase) are 1.8, 1.1, and 1.6, respectively, thus also suggesting that in the most recent years, the rates are fairly comparable in urban and rural places.

Figure 6 about here

Figure 7 displays the female rates of rape and sexual assault for women ages 18 and older by marital status. The magnitude of the differences in risk by marital status are quite large, particularly during the earlier part of the series when rape rates for divorced/separated, and never married women were remarkably high, and similar in magnitude to one another. The long-term trends in the rates for all three groups suggest notable declines in risks. In the most recent years, NCVS rates of rape and sexual assault among married women continue to remain lower than the rates for divorced/separated, and never married women.

Figure 7 about here

Figure 8 shows the differences in risk over time for females living in households at or below the federal poverty line compared to those living above the poverty line. Females in households that did not report income information are treated as a separate group because it was impossible to determine poverty status without this information. The NCVS data suggest that females living in poverty households are at higher risk for rape and sexual assault than other

females, and consistently at higher risk throughout the four decade period. As seen in previous figures, all of the subgroups shown here exhibited declines in risk over the four decade period.

Figure 8 about here

Together, Figures 3 through 8 suggest that females' risk for rape and sexual assault is lower in the past 10 years than it was during the 1970s. The NCVS data also suggest that there are notable subgroup differences in risk and that some of these differences appear to be enduring (e.g., marital status) while other subgroup differences have changed or declined some over time (e.g., place of residence). The period in which rape and sexual assault rates appear to have declined most was from the early 1990s to early 2000s, the same period in which other forms of serious violent victimization also declined comparably.[6]

To summarize the magnitude of the subgroup differences observed in the NCVS data (that is, excluding data obtained during the NCS period so as not to compare rates based on differing instrumentation), Figure 9 shows contrasts in relative risk (i.e., the average rate ratios) across the subgroups examined above using the average victimization rates from two 5-year periods: the first 5 years of the NCVS (1993-1997) and the last 5 years of the series (2005-2009). The use of 5-years worth of data for these comparisons stabilizes the subgroup differences that may be associated with random fluctuations in the rape and sexual assault victimization rates. Comparisons in subgroup differences across the earlier and later time periods allow one to see whether those disparities may have change over time.

Figure 9 about here

[6] In analyses not shown here, first-difference correlations between the 1973-2009 trends in female rape and sexual assault victimization and other forms of serious violence were calculated. Year-to-year changes in rape and sexual assault are correlated significantly ($r=.38$, $p<.05$) with year-to-year changes in other forms of serious violence, suggesting that as rates of other forms of violence rise and fall, rates of rape and sexual assault tend to do so as well.

The subgroup rate ratios in Figure 9 suggest that among these factors, the largest bivariate correlate of rape and sexual assault victimization is marital status. Divorced/separated women were more than 9 times more likely to be victimized than married women in 1993-1997, and about 7 times more likely in 2005-2009. Similar differences appear when comparing never married women to married women, although in both comparisons, the rate ratios declined across the two periods. The other two factors that exhibit notable rate ratios during these time periods are age and poverty status where subgroup comparisons show differences in risk that are at least two times greater, and in both instances, the rate ratios are slightly larger in 2005-2009 compared to 1993-1997. The NCVS data suggest that race/ethnicity and place of residence are not as highly associated with risk for rape and sexual assault as are factors such as marital status and age. In general, across all time periods, the groups suffering the highest rates of rape and sexual assault are; divorced/separated, and never married women, younger females, non-Latina black females, and females living in households at/below the poverty line.

Are subgroup differences in rape and sexual assault similar to those found for other forms of serious violent victimization? This may be an important issue if oversampling of high-risk groups is under consideration for an omnibus victimization survey such as the NCVS. To answer this question, comparable rates for other forms of serious violent crime (i.e., robbery and aggravated assault) were estimated for the same subgroups and periods. Figure 10 (presented using the same index scale) shows that the subgroup differences in other forms of serious violence are, in some cases, similar in direction and magnitude, but not for all of the factors considered here.

Figure 10 about here

Most notably, the magnitudes of the differences in risk for other forms of violence across marital status are not as large as was found for rape and sexual assault. Divorced/separated and never married women have risks for other forms of serious violence that are 3 to 4 times greater than those found for married women. Though these rate ratios are large in magnitude, they are not as large as was found for rape and sexual assault. Age differences in risk for other forms of serious violence are also not quite as large as was found for rape and sexual assault victimization. Differences in risk according to poverty status remain similar in magnitude for other forms of serious violence, while differences associated with race/ethnicity and place of residence are greater for other forms of serious violence than they are for rape and sexual assault victimization. In general, the rate ratios in risk for other forms of serious violence changed relatively little between 1993-1997 and 2005-2009: Differences associated with poverty status increased somewhat, while differences between Latinas and non-Latina whites, urban versus rural, and 12-17 versus 35-49 decreased slightly. Thus, marital status and age appear to be particularly important risk factors for rape and sexual assault.

METHODOLOGICAL INFLUENCES ON THE REPORTING OF RAPE AND SEXUAL ASSAULT IN THE NCVS

To analyze how various aspects of the NCVS are associated with the reporting of rape and sexual assault victimization, pooled interview-level data from female subjects in the 1994-2009 NCVS are examined using multivariate models (N=1,462,150). These analyses take advantage of the methodological variation within the survey to assess whether victimizations are more or less likely to be reported when the interview is conducted in-person (versus by telephone), and, if in-person, when others are present during the interview. In addition, the

analyses examine if reporting is associated with whether the interview was bounded, and with the length of time the respondent has been in the sample. Survey-weighted logistic regression techniques are used to take the clustered sample design into account. The effects of these factors on the reporting other forms of serious violence also are assessed so that the degree to which these factors appear to be unique to rape and sexual assault reporting can be determined.

Bounding is a strategy unique to the NCVS in that, generally speaking, data from the first interview with a respondent are not used in the estimation of victimization rates. Rather, the first interview with a respondent is intended to be used for bounding purposes only, to reduce telescoping effects that have been found in past research (e.g., Biderman and Cantor, 1984; Bradburn et al. 1994). Because the NCVS is designed to interview persons 7 times over 3 ½ years using a 6-month recall period, responses from the previous interview can be used to verify with the respondent whether the event reported during the current interview is a new victimization not previously reported. This bounding strategy has been shown to be important for purposes of producing time-specific rates (such as annual rates).

However, there have always been some unbounded interviews in NCVS data because the sampling unit is a household address, not specific persons or families. In cases where established respondents move from a sampled household, the new residents at that address are interviewed as replacements and their first interviews are included in the data and used for rate estimation. Similarly, if the families remain the same, but additional persons become eligible for the survey (such as when someone new, like a new spouse moves in, or when an 11 year-old turns 12), those new interviews are unbounded. In addition, unbounded interviews associated with newly sampled households were introduced into the data in 2006 to compensate for sample

cutbacks (see Rand, 2008). A variable capturing new respondents with unbounded interviews is available in the data and will be used in these analyses to assess the effects of bounding.

Potential time-in-sample effects are also examined because it has been shown in past research that as the number of times a subject has been interviewed increases, the less likely they are to report victimization. This type of "testing-effect" was found in early analyses of the NCS (e.g.,Woltman and Bushery, 1984), as well as in other longitudinal data measuring delinquency and victimization (e.g., Lauritsen, 1998), and it is generally interpreted as a form of respondent fatigue.[7]

The assessment of time-in-sample effects requires that the interviews of each respondent can be identified and linked over time. However, due to changes in the assignment of person identification codes that occurred when new NCVS sample was introduced in 1996 and 2006, it is possible to assess time-in-sample effects only for those subjects interviewed between 1997 and 2005. The number of interviews with females is substantially reduced when the data are limited to these years (N=822,198), and sample size is an important consideration in multivariate analyses of a statistically rare event. Therefore, to maximize the statistical power of the multivariate models, the primary results reported here will be based on the full 1994-2009 sample, and potential time-in-sample effects will be assessed in supplementary analyses that replicate the 1994-2009 models using the 1997-2005 data.

Table 2 presents the descriptive statistics for the methodological variables under consideration, showing the extent to which interviews vary within the survey during the 1994-2009 period (column 1) and during the restricted 1997-2005 period (column 2). About 11% of

[7] Hart et al. (2005), using longitudinal NCVS data, found that exposure to a longer interview (i.e., reporting a victimization) at $time_t$ is not significantly associated with a "non-interview" (e.g., a refusal) at $time_{t+1}$ once demographic factors are controlled.

interviews with female subjects (conducted between 1994 and 2009) were unbounded, and about 29% of these interviews were in-person, rather than by telephone. The proportion of all female interviews known to be conducted in the presence of others was 17%, however this is likely to be an underestimate because it is difficult for the interviewer to determine whether others are present during telephone interviews. For those interviews conducted in person, more than half (57%) occur in the presence of others. Also, there is likely to be wide variation in the meaning of the coding of whether someone else is "present" during the interview, as this can range from someone being in the same room as the respondent during questioning, as well as being in another room of the house, out of listening range. Unfortunately, greater details about this issue are not available in the data so additional specification is not possible. When the sample is restricted to married women only, approximately 13% of all interviews are known to be conducted in the presence of others, while about half (49%) are conducted with a spouse present. The values found for the restricted 1997-2005 period are generally similar in magnitude, with the exception of the bounding percentage. This value is expected to be higher during the 1994-2009 period due to the inclusion of unbounded interviews that began in 2006.

Table 2 about here

Table 3 shows how type of interview, bounding, and the presence of others are associated with the reporting of rape and sexual assault victimization (column 1) and with the reporting of other forms of serious violence (column 2) among females interviewed during 1994-2009. The first panel displays the results for a model based on the use of all interviews, while subsequent panels (2 through 4) are restricted to either telephone interviews, personal interviews, or personal interviews with married women only. The results in the first panel indicate that the odds of reporting a rape or sexual assault victimization are 3.57 times greater in unbounded, compared to

bounded, interviews. Once bounding is controlled, the results also show that interviews conducted in person with no others present do not produce significantly higher reports than telephone interviews, although interviews conducted in person with others present do produce significantly lower reports than telephone interviews (odds ratio=.83, p=.05). The effects of bounding on the reporting of other forms of serious victimization are significantly lower than those found for rape and sexual assault reporting (odds ratio=2.09). In addition, it is seen that interviews conducted in-person result in significantly more reports of other forms of serious violence (compared to telephone interviews) regardless of whether others are present. Thus, the presence of others appears to inhibit rape and sexual assault reporting, but generally increase females' reporting of other forms of violent victimization.

Table 3 about here

When the models are restricted to telephone or to in-person interviews, the results are generally similar. Unbounded interviews are significantly more likely to result in victimization reports in both telephone and in-person interviews, and the effects are significantly larger for the reporting of rape and sexual assault than for other forms of serious violence. In personal interviews with married women, the likelihood that that respondent will report a rape or sexual assault or another form of violence is significantly higher when the spouse is not present. This finding is consistent with that found for the full sample of personal interviews (i.e., that the presence of others inhibits rape and sexual assault reporting), but inconsistent with the results for found for reporting other forms of violence. Thus, generally speaking, the presence of others during personal interviews does not appear to affect the reporting of non-sexual violence, but for married women, the presence of a spouse does appear to inhibit reporting.

To assess whether these methodological effects are partly spurious due to the failure to control for time-in-sample effects, the models are reanalyze using data from the 1997-2005 period. The first step is to replicate the model found in the first panel of Table 3 for the restricted time period to determine whether the period of data under consideration affects the results, and following replication, to include a measure of time-in-sample in the model. The results of these analyses are presented in Table 4.

Table 4 about here

The basic findings based on the full 1994-2009 sample are generally replicated in the 1997-2005 subsample (compare panel 1 of Table 4 to panel 1 of Table 3), however the odds ratio showing an inhibiting effect of the presence of others during an in-person interview is no longer statistically significant. The restricted sample size makes it more difficult to detect a statistically significant difference, and this is evidenced in the wider confidence intervals around the odds ratios. Because of these restrictions in sample size, the mode-specific models presented in panels 2-4 of Table 3 will not be further re-examined.

The inclusion of the time-in-sample variable in these models suggests that some of the effect attributed to bounding is associated with this variable's relationship to time-in-sample (the odds ratio=4.28 without the time-in-sample variable, and 3.00 once the measure is included), however given the sample size limitations, this change is not found to be statistically significant. The effect of time-in-sample suggests that, independent of mode of administration and bounding, the greater the number of prior interviews, the less likely a woman is to report a rape or sexual assault. The findings about time-in-sample and bounding behave similarly for the reporting of other forms of serious violence, though as was found previously, the effects of bounding on rape and sexual assault reporting remain significantly greater than for reporting other forms of

violence. (However, the time-in-sample effect remains similar for both forms of violence.) To summarize the effects of bounding, mode of administration, and time-in-sample, Figure 11 displays the predicted rates of female rape and sexual assault reporting by method characteristic.

Figure 11 about here

MULTIVARIATE ANALYSES OF SUBGROUP DIFFERENCES IN RAPE AND SEXUAL ASSAULT VICTIMIZATION

To assess how subgroup characteristics are associated with rape and sexual assault victimization, the survey-weighted multivariate analyses presented below also use the pooled interview-level data from female subjects in the 1994-2009 NCVS. Multivariate analyses of subgroup differences using the pooled interview-level data are important because they can help clarify whether some of the risk disparities observed earlier in the trend analyses are robust, or perhaps spuriously associated with other correlates. For example, the strong observed differences associated with marital status may be, in part, a reflection of age since younger women are less likely to be married than older women. The results of these models also are compared to the results obtained for other forms of serious violence. Finally, the results also control for the methodological characteristics of the interview as discussed above. As in the previous section, to maximize the statistical power of the multivariate models, the primary results will focus on those based on the full 1994-2009 sample, and supplementary analyses that replicate the models using the 1997-2005 data will be considered to assess whether the key subgroup results are altered once time-in-sample effects are controlled.

The subgroup factors to be considered include those assessed earlier, plus additional subgroups for which sample size would not permit reliable annual rate estimates for the trends.

The pooled data permit model-based estimates of smaller subgroups, as well as subgroups whose characteristics were not consistently measured throughout the NCS and NCVS years. A listing of the subgroups to be considered and their proportionate representation in the 1994-2009 data is presented in Table 5. More specifically, the pooled NCVS data allow for consideration of risk for: American Indian and Asian females: widowed, divorced, and separated women separately; females of various education status; young women in the armed forces; and young women residing in student quarters versus elsewhere. Additional analyses of females ages 12 to 17 are also examined separately to assess differences according to family structure.

Table 5 about here

The results of the multivariate logistic regression analysis of rape and sexual assault victimization on the socio-demographic characteristics for the full sample of female interviews are presented in Table 6. (Supplementary models of young women subgroups are presented in subsequent tables.) Odds ratios and 95% confidence intervals are presented in columns 1 and 2 for each of the contrasts against the reference group (as designated in the variable heading). In addition, a third column of results indicates whether the odds ratios for the rape and sexual assault model differs significantly ($p<.05$) from those obtained for the comparable model examining risk for other forms of serious violence (results not displayed).

Table 6 about here

The results shown in Table 6 indicate that the risk for rape and sexual assault are significantly and independently associated with each of the subgroup characteristics examined here. Net of other influences, age and marital status are most strongly associated with victimization. Women who are under the age of 35 report rates of rape and sexual assault that are approximately 9 times greater than those for women over the age of 50. The expanded

categories of marital status show that women who are separated have the greatest risks for sexual violence: Their rates are roughly 10 times greater than those of married women. Divorced and never married women have risks that are statistically equivalent and about 4 to 5 times greater than those of married women. Finally, women who are widowed are more likely to be victimized than married women, controlling for age and other socio-demographic differences. The effects of age and marital status are found to be significantly greater for rape and sexual assault than for other forms of violent victimization, with the exception of widowed status which shows equivalent odd ratios across the two models.

Educational status is found to be significantly associated with rape and sexual assault victimization. Women who are college graduates have risks that are significantly lower than those with less education, though the difference between those with grammar school education and college degrees is not large enough to be statistically significant. Females who are living in households at or below the poverty line report higher rates of rape and sexual assault than those reporting incomes above the poverty line. And females in suburban and rural areas report significantly lower rates than those in urban areas. These three variables (education, poverty status, and place of residence) are found to have lesser effects on rape and sexual assault victimization than on other forms of serious violence.

When examined in a multivariate context, the conclusions about race and ethnic differences that were observed earlier in the trend data must be reconsidered. The trend analyses suggested that non-Latina black females had consistently higher risks than non-Latina white females, but the multivariate analyses suggest that once other factors (such as marital status, age, and poverty status) are controlled, these differences no longer remain, and in fact, change direction. Non-Latina whites are found to have higher risks than non-Latina blacks and Latinas

for rape and sexual assault once these additional factors are taken into account. In this expanded consideration of race and ethnicity, non-Latina Asian females are also found to have lower risks than non-Latina whites. The race and ethnic group with the highest risk for rape and sexual assault (net of other factors) appears to be non-Latina American Indians, whose odds of victimization are about 1.8 times those of non-Latina whites. Race and ethnic differences are somewhat larger for other forms of serious violence than for rape and sexual assault victimization, and for non-Latina black females, in the opposite direction. Non-Latina black females have risks for other forms of serious violence that are higher than those for non-Latina whites, net of these other factors.

The effects of bounding, mode of administration, and the presence of others during in-person interviews are similar in this model to those derived from the models without controls for socio-demographic measures. However, the effect of bounding is reduced some from an odds ratio of about 3.6 to 2.5. This suggests that some portion of the bounding effect is attributable to the fact that the use of bounding is not random across these socio-demographic factors. Additional analyses (not shown) suggest that this is the case: Female interviews are more likely to be unbounded for those under the age of 50 (particularly those 18 to 34 years of age), for those living at or below poverty, and for those who are unmarried. These factors likely reflect greater residential turnover in these women's lives making them more likely to move into an existing sampled address and thus more likely to provide an unbounded interview. It is also the case that although the difference is reduced, the effect of bounding on female rape and sexual assault reporting remains significantly higher than the effect found in analyses of reporting other forms of serious violence (odds ratio = 2.50 [95% CI=2.13 to 2.94] versus 1.72 [95% CI=1.57 to 1.88]).

A supplementary test of the effects shown here including the time-in-sample measure was replicated using the 1997-2005 female interview data. These results are shown in Table 7. Replication of the model in Table 6 (without the inclusion of the time-in-sample measure) shows similar substantive results in the restricted time period: In most instances where the coefficients differ, those differences are not statistically significant. However, in a few instances, the reduced sample size does not allow one to say that the differences are statistically significant. For example, the coefficient for widowed (versus married) is 2.48 ($p<.05$) in the 1994-2009 model, but it is 1.80 in the 1997-2005 model and no longer statistically significant. Similarly, the coefficient for non-Latina American Indians (versus non-Latina whites) is 1.79 ($p<.05$) in the 1994-2009 model, but 1.77 and not significant in the 1997-2005 model. In both models, the largest predictors remain age and marital status.

Table 7 about here

When the time-in-sample variable is introduced into the model, it is statistically significant and shows that the longer a respondent is in the sample, the less likely she is to report a rape or sexual assault victimization. As was shown in previous results, the inclusion of this variable accounts for some of the bounding effect, though the change in the coefficients is not found to be statistically significant. More specifically, the coefficient is reduced from 2.51 to 2.03. The introduction of the time-in-sample measure has little effect on the other coefficients in the model.

Analyses of Specific Age Subgroups

It was noted earlier that additional variables in the NCVS are available to consider how rape and sexual assault reporting is related to membership in the armed forces among young women, as well as living in student quarters versus elsewhere. Unfortunately, the analyses found

that the sample size for women in the armed forces was very small and incapable of supporting multivariate analyses. These bivariate results (not shown) suggest that women between the ages of 18 and 34 who are members of the armed forces have rates of rape and sexual assault victimization that are slightly lower than those for similarly aged women not in the armed forces, but caution is warranted for these results given the very small sample size and the unknown generalizability of the estimates (e.g., women in the armed forces who are serving abroad do not participate in the survey). Thus further analyses of this indicator are not possible.

For women who are 17 to 24 years of age, it is possible to assess whether living in student quarters (e.g., college dormitories and other student housing) is associated with risk for rape and sexual assault. Many surveys of rape and sexual assault victimization are based on college student samples, so further investigation of this issue, as well as the methodological effects on their reporting behavior may be helpful. The size of the sample of young women living in student quarters is small, so multivariate analyses are limited in the number of variables that can be considered. The model presented in Table 8 shows how living in student quarters is associated with young women's risk, controlling for age and the methodological factors of bounding and mode of interview administration.[8]

Table 8 about here

The bivariate results in Table 8 shows that among women ages 17 to 24 (N=165,361), those who live in student quarters are more likely to report rape and sexual assault than those living elsewhere (odds ratio=2.45 [95% CI=1.61 to 3.74]), suggesting that such environments may pose special risks to women in this age group. However, once age is further controlled, the differences associated with student quarter residence are no longer statistically significant. Risk

[8] Sample size is too small to support estimation of time-in-sample effects in the restricted 1997-2005 period.

for rape and sexual assault is found to decline between the ages of 17 and 24, and therefore suggests that the higher risk in student quarters is partly associated with the fact that women in these quarters tend to be younger than those living elsewhere. Perhaps not surprisingly, bounding continues to have an effect on reports of victimization, and in-person interviews with others present result in fewer reports than those with no one present, or those conducted by telephone. Other variables available for analysis (such as race and ethnicity) were found to have no significant influences (primarily because of sample size limitations) and are thus excluded from the model.

The final supplementary model examines rape and sexual assault reporting among the youngest female participants in the NCVS – those ages 12 to 17 -- to assess the significance of family structure and methodological factors. The bivariate results in Table 9 indicate that girls who live in single-parent families report significantly higher rates of rape and sexual assault victimization than do girls living in families with two married adults.[9] Mode of administration (i.e., telephone versus in-person, with or without the presence of others) had no significant effect and was therefore excluded from the model. Bounding effects persist in this subsample and are statistically equal in size to those found for the full sample containing women of all ages. Finally, age is significantly and positively related to risk indicating that as teenage girls get older, they report more experiences with rape and sexual assault. The inclusion of the bounding and age variable has limited influence on the effects associated with family structure. As was the

[9] In order to make reliable comparisons, family structure was coded into two groups: youth living with two married parents and youth living in "other" types of households. The vast majority of youth in other types of households were living with a single (unmarried) parent (typically their mother). However it is difficult to use the NCVS data to determine how other adults who may be living in the household are related to the youth. Youth living in "other" types of households may include single parents and their unmarried partners, and youth living with two married parents may be living with a non-parent adult who is married to their mother or father.

case with the analyses of women 17 to 24 years of age, other variables available for analysis were not found to have significant influences and are thus excluded from the best-fitting model presented here.

Table 9 about here

Finally, to summarize the disparities in risk across selected subgroups, predicted rates are generated based on the key results from the primary model reported earlier in Table 6. These predicted rates provide a convenient summary of how females with different constellations of risk factors compare in their overall risk for rape and sexual assault. Table 10 shows the average 6-month prevalence rate for rape and sexual assault victimization for all females ages 12 and above (1.0 per 1,000) compared to the predicted rates for various female subgroups. All estimates, except where indicated, are for bounded interviews.

Table 10 about here

In the first two panels of this table, younger (12 to 34 years) and older (35 and above) females are compared primarily across selected marital and poverty statuses. Among younger females, the 6-month prevalence rate for rape and sexual assault for separated women living in households at or below the poverty line is 9.9 per 1,000, or about 5 times greater than the average rate among all females 12 to 34 and about 10 times greater than the average for all females ages 12 and above. In contrast, the predicted rate of rape and sexual assault for married women ages 35 and above is considerably lower at .2 per 1,000, and if the married woman is also a college graduate and living above the poverty line, her predicted rate is about .1 per 1,000. Thus, the disparities in risk between the highest and lowest risk subgroups are quite large -- those at greatest risk are about 50 to 100 times more likely to experience rape and sexual assault than those at lowest risk (e.g., 9.9 versus .2 or .1).

Among younger females, the relative importance of race, ethnicity, poverty and marital status can be seen in the third panel of the table. Non-Latina American Indians have rates that are about 5 times greater than those of non-Latina Asians, and about twice as high as those for non-Latina whites and blacks. The predicted rates also show how being unmarried and living below poverty also contributes to those risks, and demonstrate the relatively small disparities in risk associated with living in an urban, suburban, or rural environment.

CONCLUSIONS

The purpose of these analyses was to respond to a request from the Committee on National Statistics' Panel on Measuring Rape and Sexual Assault in Bureau of Justice Statistics Surveys to assess subgroup differences in females' risk for rape and sexual assault using data from the NCVS and to examine how methodological factors are associated with the reporting of rape or sexual assault during the interview. The results found that there are large disparities associated with socio-demographic factors in females' risks for rape and sexual assault. In particular, age and marital status were found to have the largest independent influences and appear to have more predictive power than factors such as race and ethnicity or place of residence. It was also shown that some of the risk disparities across subgroups endured over time, while others changed somewhat, and that some factors are more strongly correlated with rape and sexual assault than with other forms of serious violent victimization.

The results also found that some methodological factors have robust effects on rape and sexual assault reporting: bounding and time-in-sample are significantly associated with reporting, with unbounded interviews producing rates that are 2 to 3 times greater than bounded interviews, and second interviews producing rates that are about 2 times higher than fourth, fifth,

or sixth interview. In contrast, the use of telephone or in-person interviews had relatively limited influence. Finally, the results showed that portions of the NCVS measure of "rape and sexual assault" appear to be capturing rape and attempted rape incidents that are also captured in the UCR, and that both series suggested similar trends in this component of criminal sexual violence. If the purpose of the data collection is to produce time-specific victimization rates, additional data are necessary for determining when these rates (e.g., 1st interview unbounded, 2nd interview bounded,…etc.) are most "valid."

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Figure 1.

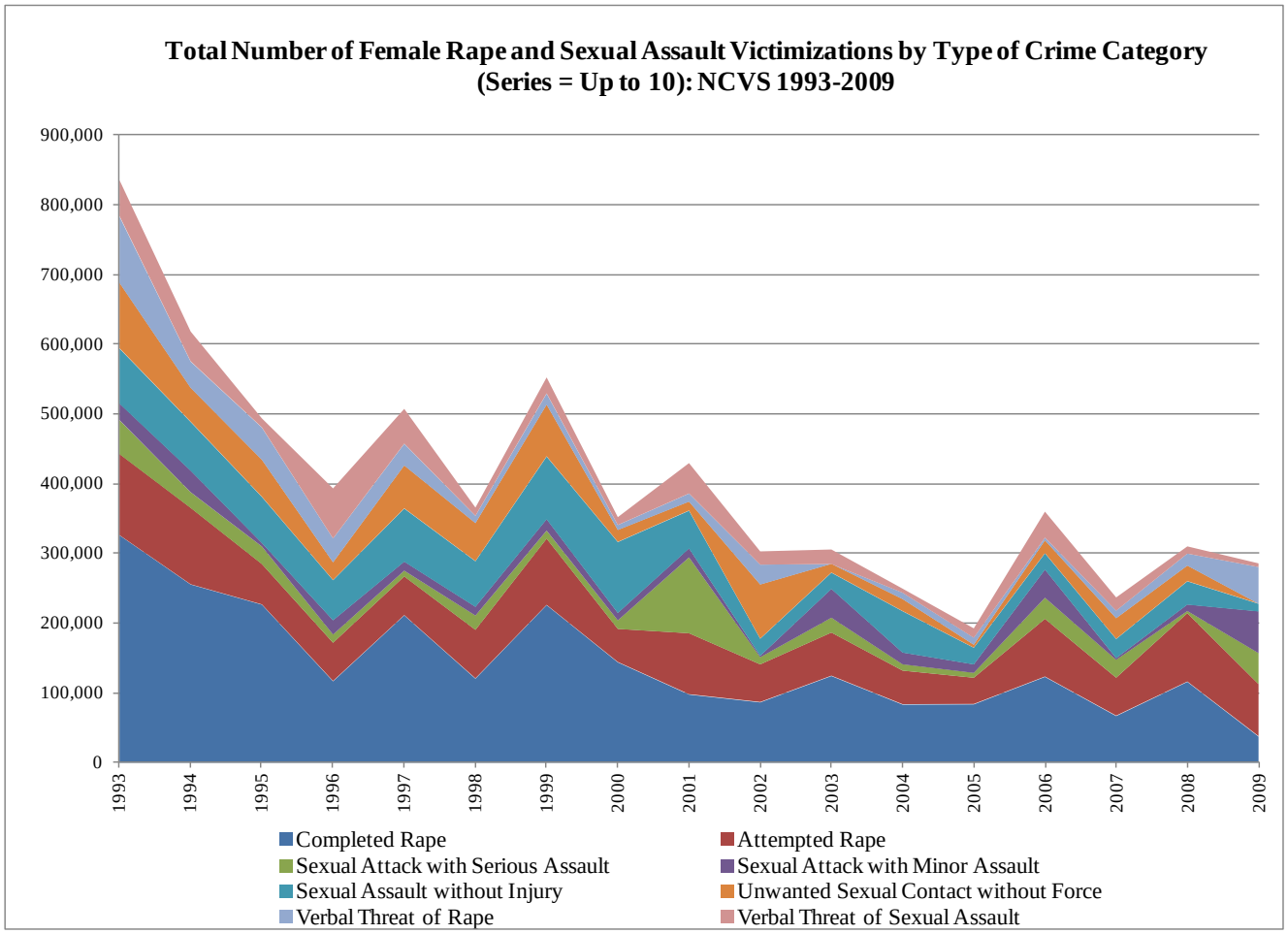
Total Number of Female Rape and Sexual Assault Victimizations by Type of Crime Category
(Series = Up to 10): NCVS 1993-2009
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
Completed Rape
Attempted Rape
Sexual Attack with Serious Assault
Sexual Attack with Minor Assault
Sexual Assault without Injury
Unwanted Sexual Contact without Force
Verbal Threat of Rape
Verbal Threat of Sexual Assault

Figure 2.

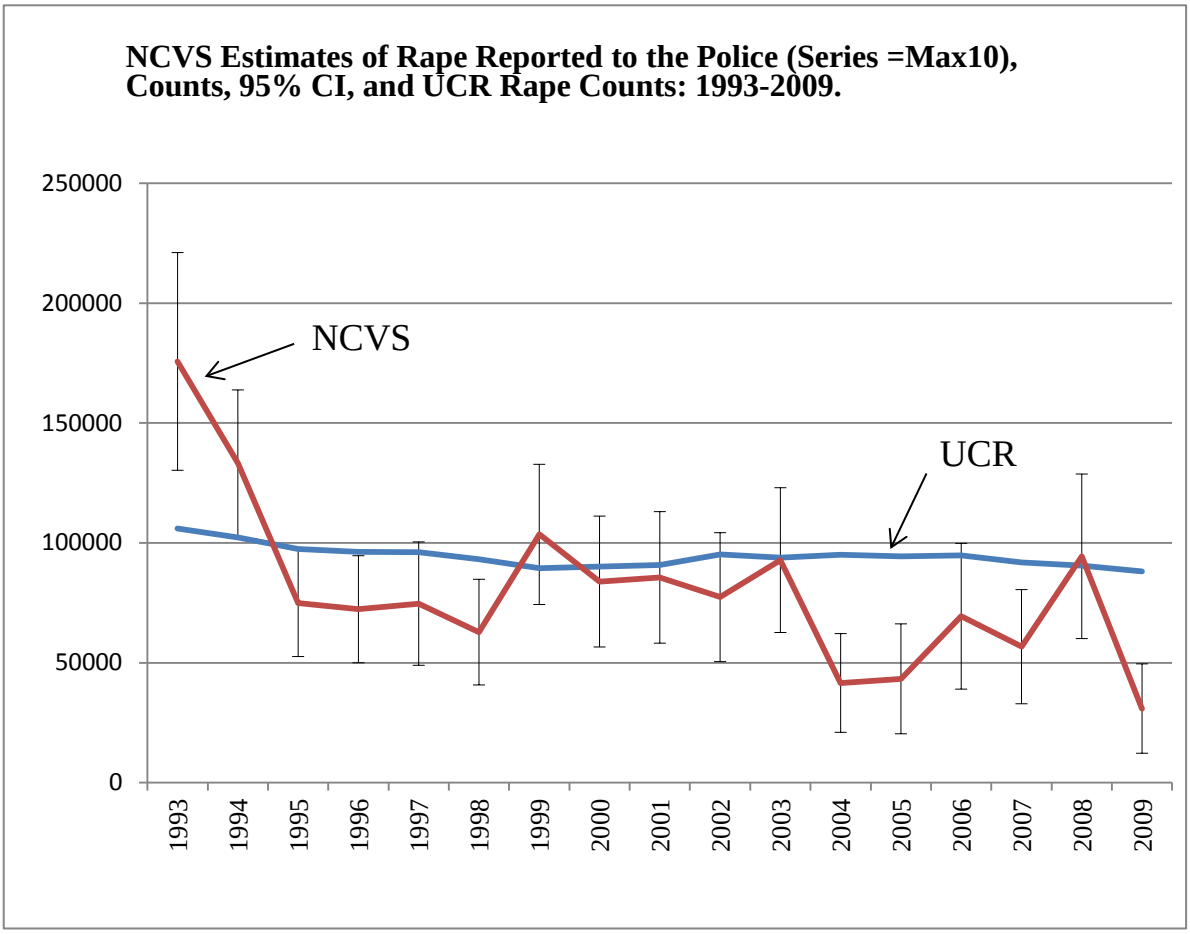
NCVS Estimates of Rape Reported to the Police (Series =Max10), Counts, 95% CI, and UCR Rape Counts: 1993-2009.
250000
200000
150000
100000
50000
0
NCVS
UCR
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009

Figure 3.

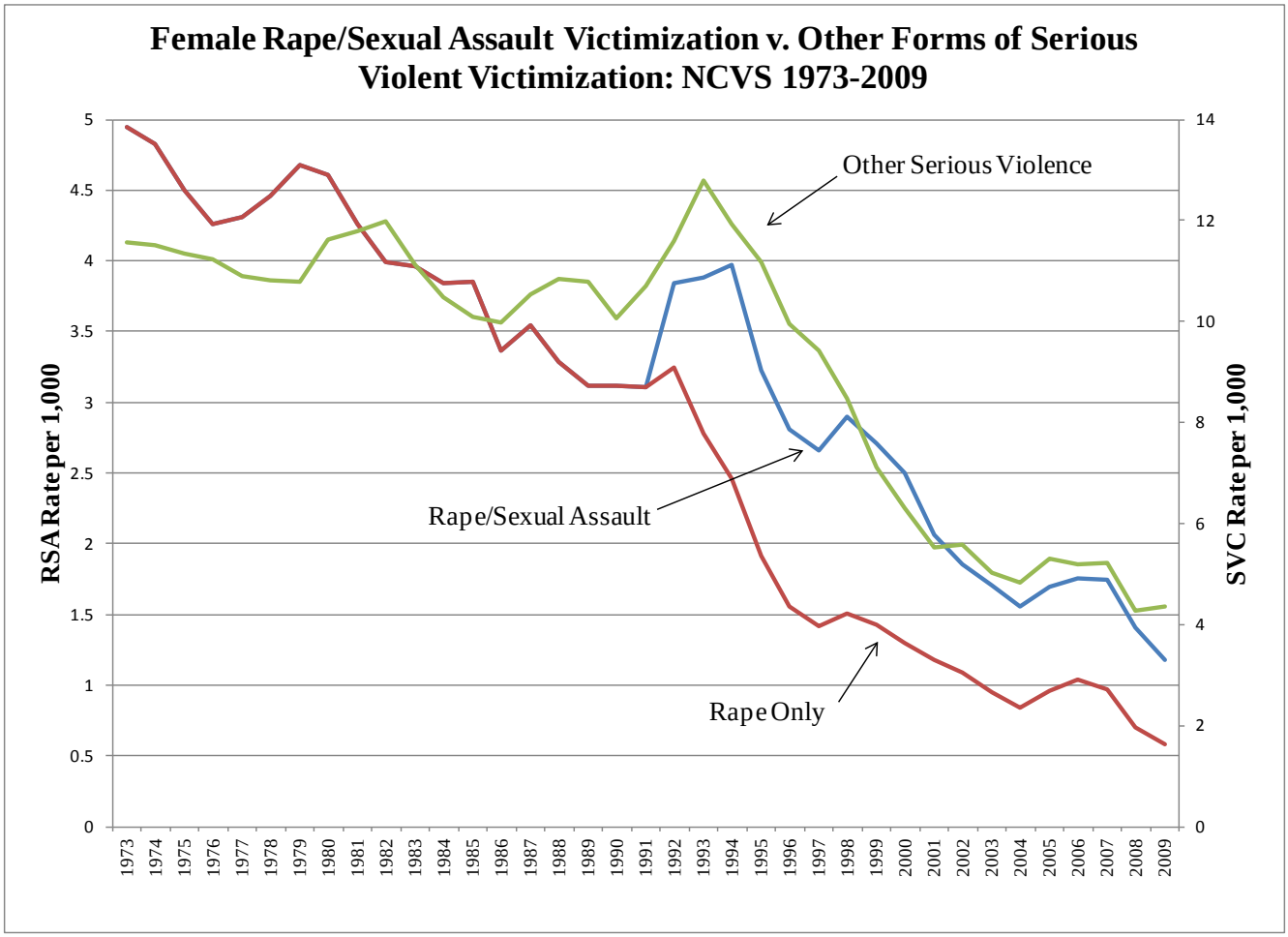
Female Rape/Sexual Assault Victimization v. Other Forms of Serious Violent Victimization: NCVS 1973-2009
RSA Rate per 1,000
SVC Rate per 1,000
Other Serious Violence
Rape/Sexual Assault
Rape Only
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0
2
4
6
8
10
12
14
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009

Figure 4.

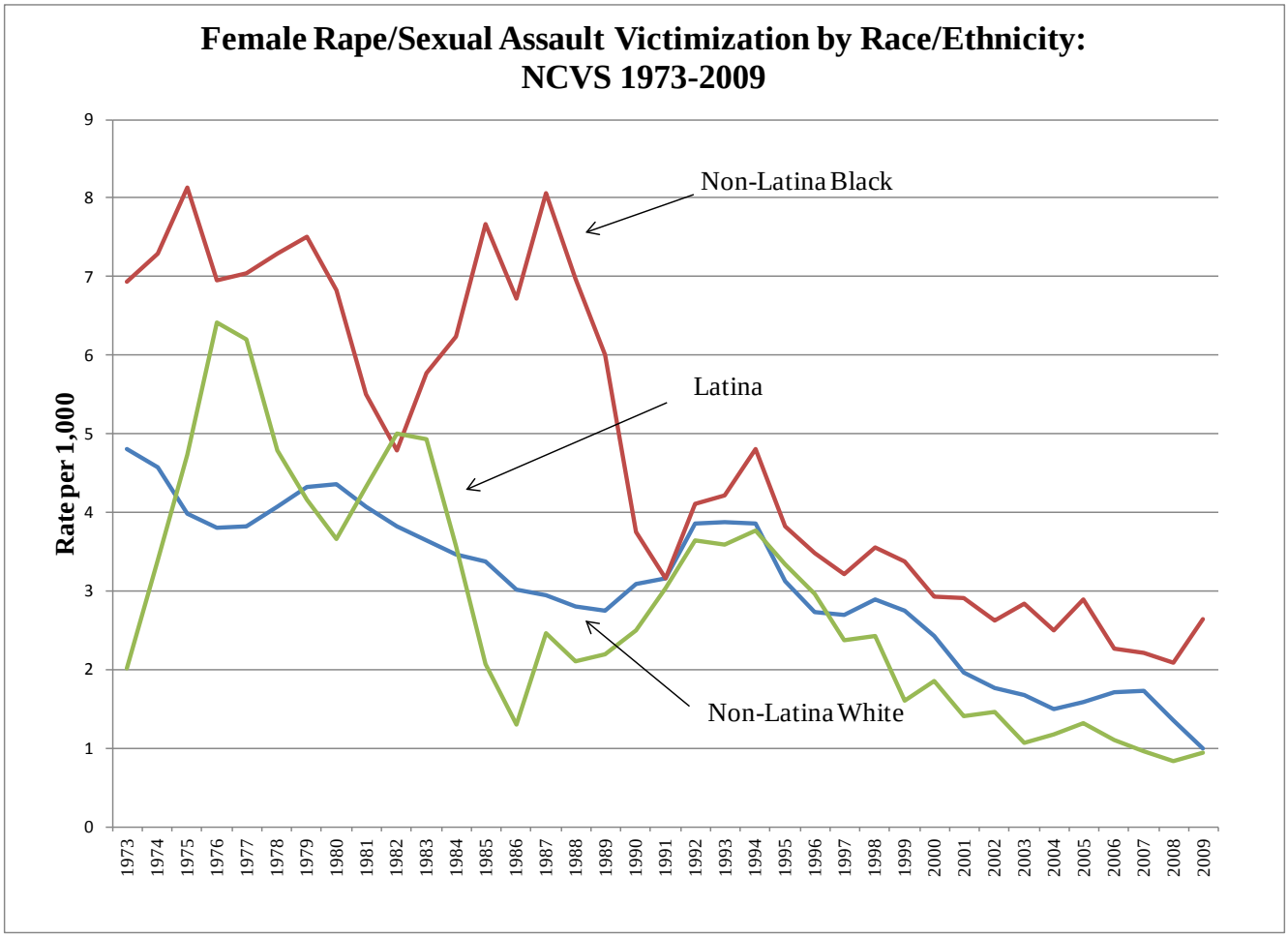
Female Rape/Sexual Assault Victimization by Race/Ethnicity:
NCVS 1973-2009
Rate per 1,000
Non-Latina Black
Latina
Non-Latina White
0
1
2
3
4
5
6
7
8
9
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009

Figure 5.

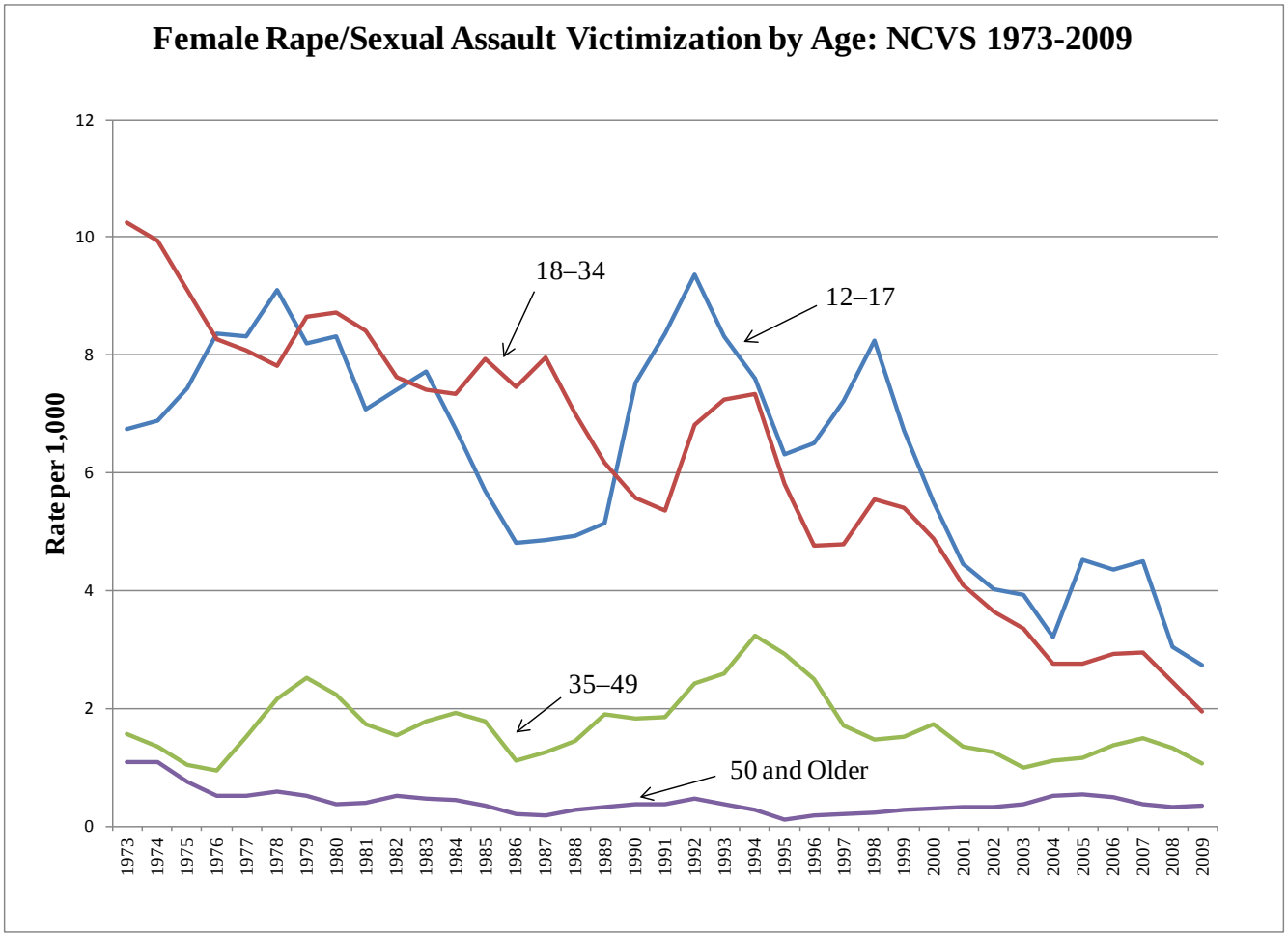
Female Rape/Sexual Assault Victimization by Age: NCVS 1973-2009
Rate per 1,000
12
10
8
6
4
2
0
18–34
12–17
35–49
50 and Older
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009

Figure 6.

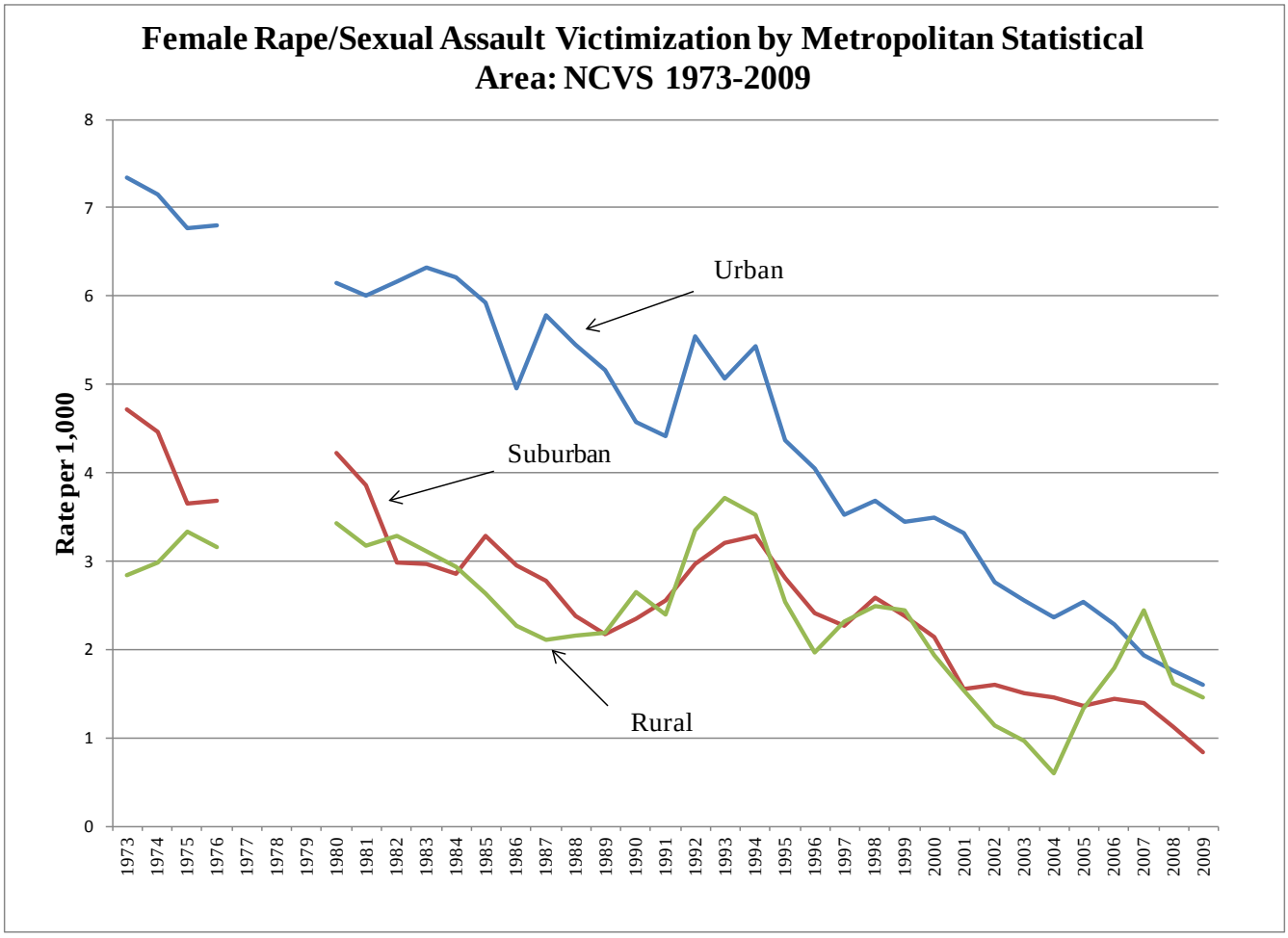
Female Rape/Sexual Assault Victimization by Metropolitan Statistical Area: NCVS 1973-2009
Rate per 1,000
0
1
2
3
4
5
6
7
8
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
Urban
Suburban
Rural

Figure 7.

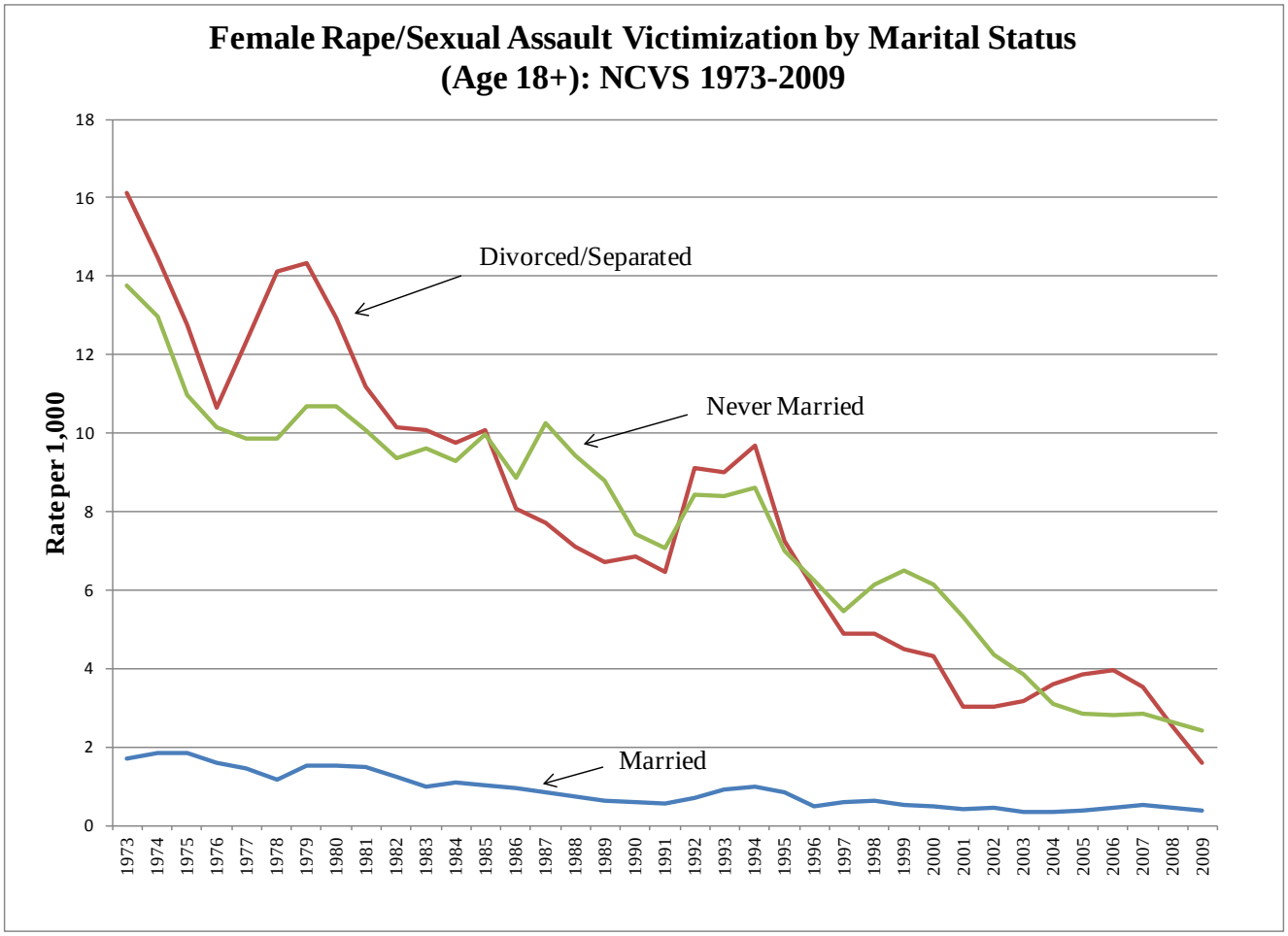
Female Rape/Sexual Assault Victimization by Marital Status
(Age 18+): NCVS 1973-2009
Rate per 1,000
18
16
14
12
10
8
6
4
2
0
Divorced/Separated
Never Married
Married
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009

Figure 8.

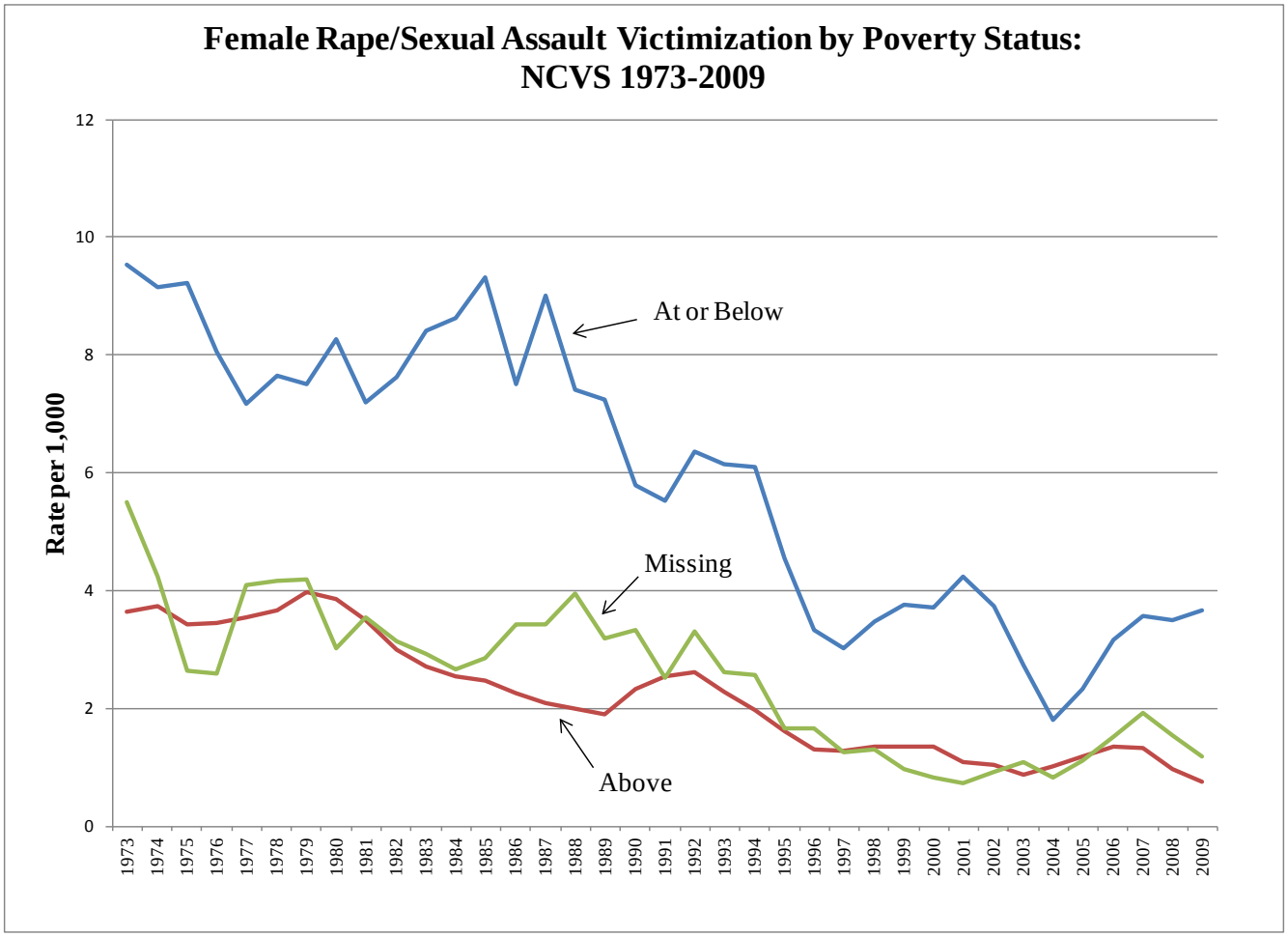
Female Rape/Sexual Assault Victimization by Poverty Status:
NCVS 1973-2009
Rate per 1,000
12
10
8
6
4
2
0
At or Below
Missing
Above
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009

Figure 9.

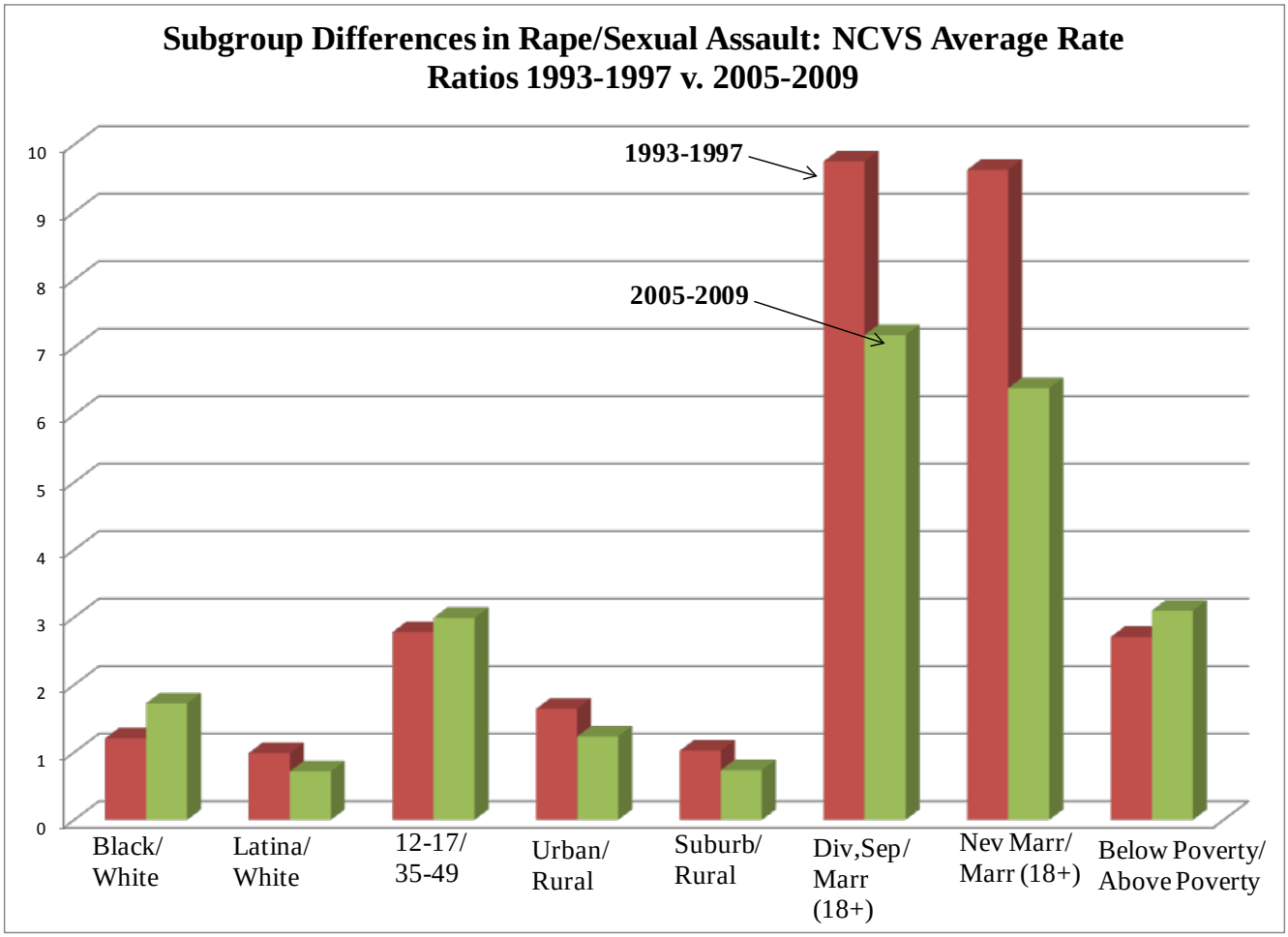
Subgroup Differences in Rape/Sexual Assault: NCVS Average Rate Ratios 1993-1997 v. 2005-2009
1993-1997
2005-2009
10
9
8
7
6
5
4
3
2
1
0
Black/ White
Latina/ White
12-17/ 35-49
Urban/ Rural
Suburb/ Rural
Div,Sep/ Marr (18+)
Nev Marr/ Marr (18+)
Below Poverty/ Above Poverty

Figure 10.

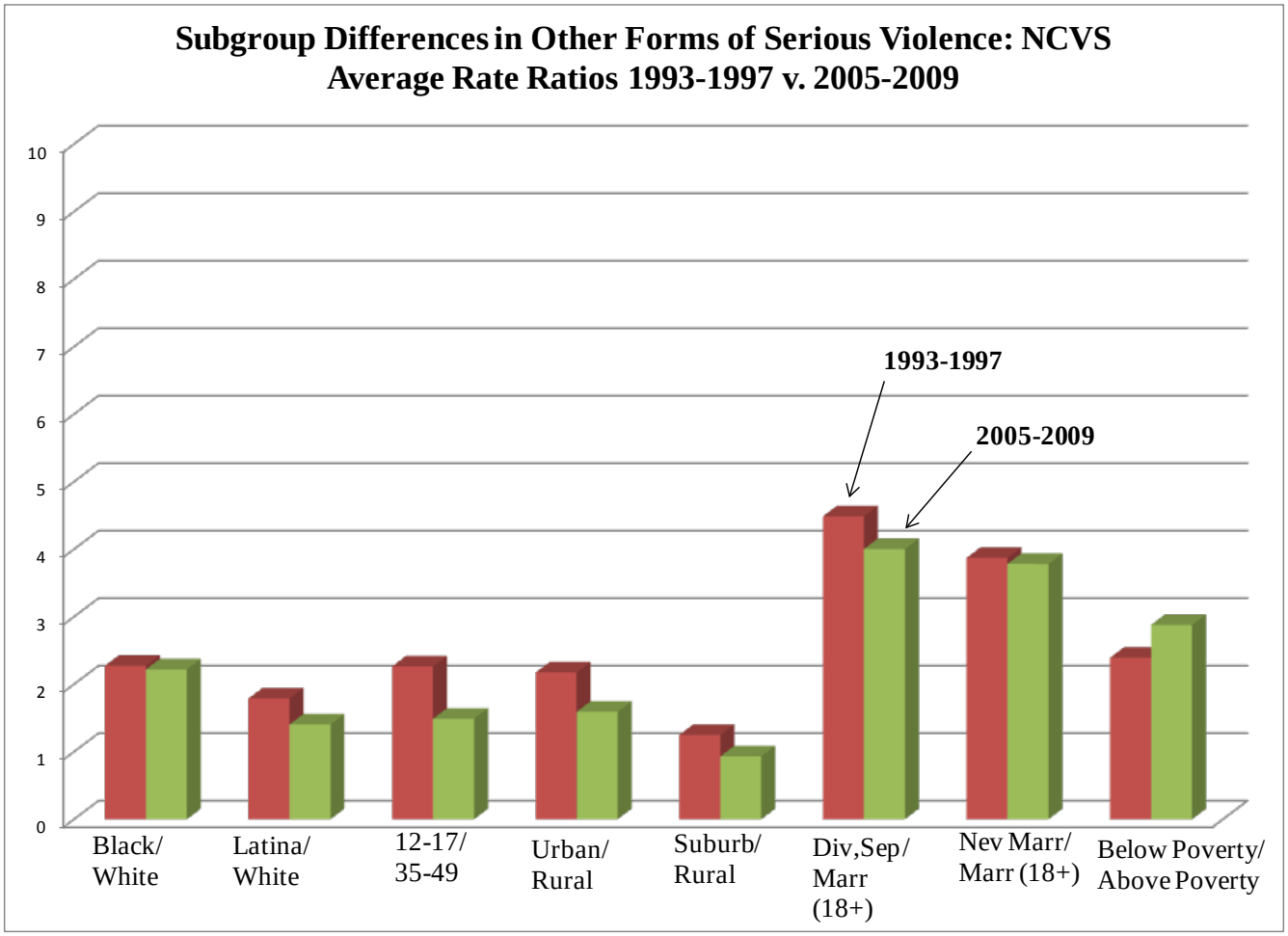
Subgroup Differences in Other Forms of Serious Violence: NCVS
Average Rate Ratios 1993-1997 v. 2005-2009
10
9
8
7
6
5
4
3
2
1
0
1993-1997
2005-2009
Black/ White
Latina/ White
12-17/ 35-49
Urban/ Rural
Suburb/ Rural
Div,Sep/ Marr (18+)
Nev Marr/ Marr (18+)
Below Poverty/ Above Poverty

Figure 11.

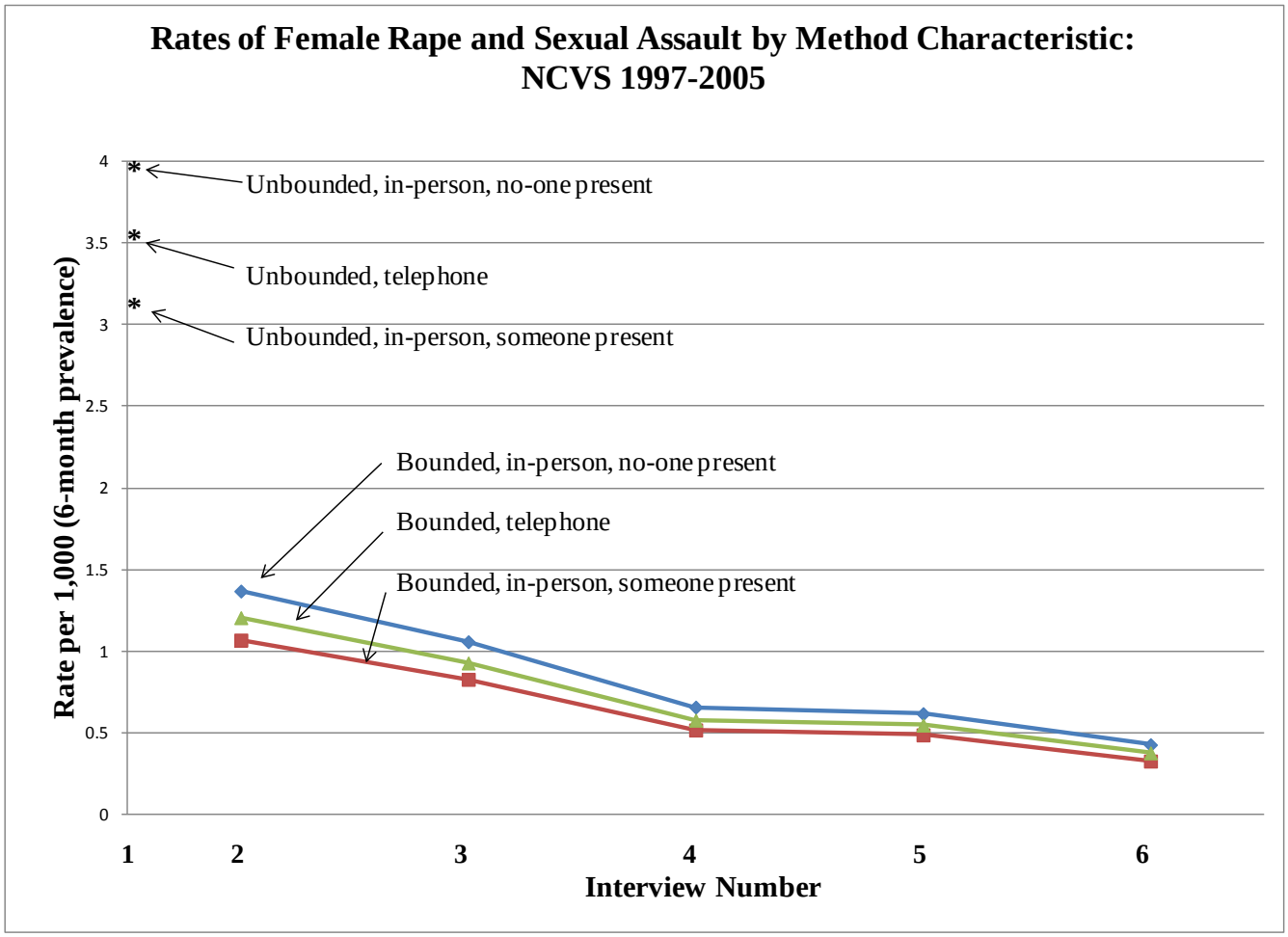
Rates of Female Rape and Sexual Assault by Method Characteristic: NCVS 1997-2005
Rate per 1,000 (6-month prevalence)
4
3.5
3
2.5
2
1.5
1
0.5
0
*
*
*
Unbounded, in-person, no-one present
Unbounded, telephone
Unbounded, in-person, someone present
Bounded, in-person, no-one present
Bounded, telephone
Bounded, in-person, someone present
1
2
3
4
5
6
Interview Number

Table 1. Components of Rape and Sexual Assault Victimization in the NCVS: Females, 1993-2009

	Series=0 Incidents	%	Series=Max10 Incidents	%
Completed rape	1,616,640	(36.7)	2,440,214	(35.9)
Attempted rape	881,926	(20.0)	1,205,288	(17.8)
Sexual assault with serious assault	224,730	(5.1)	424,296	(6.2)
Sexual assault with minor assault	168,254	(3.8)	333,210	(4.9)
Sexual assault without injury	676,766	(15.4)	888,448	(13.1)
Unwanted sexual contact without force	357,072	(8.1)	624,753	(9.2)
Verbal threat of rape	260,975	(5.9)	424,145	(6.2)
Verbal threat of sexual assault	215,974	(4.9)	448,604	(6.6)
Total	4,402,337	(100)	6,788,958	(100)

Table 2. Methodological Characteristics of Interviews with Females, NCVS.

	1994-2009	1997-2005
Unbounded		
% of interviews yes	11%	8%
In-person		
% of interviews yes	29%	26%
Others present		
% of interviews	17%	15%
% of personal interviews	57%	57%
Spouse present*		
% of interviews	13%	10%
% of personal interviews	49%	48%
N of interviews	1,462,150	822,198

*Married women only

Table 3. Multivariate Analyses of Methodological Characteristics of Interview on Victimization Rates: Females Only, NCVS 1994-2009.

	Rape and Sexual Assault		Other Serious Violence	
1. All Interviews				
	Odds Ratios	[95% CI]	Odds Ratios	[95% CI]
Unbounded	**3.57**	[3.04, 4.19]	**2.09**	[1.91, 2.29]
In-person/none pres	*1.11*	[.94, 1.31]	**1.51**	[1.36, 1.68]
In-person/pres	**0.83**	[.69, 1.00]	**1.42**	[1.28, 1.58]
2. Telephone Interviews				
Unbounded	**5.08**	[4.12, 6.27]	**2.82**	[2.39, 3.32]
CATI	**1.79**	[1.53, 2.10]	**1.68**	[1.53, 1.85]
3. Personal Interviews				
Unbounded	**3.15**	[2.55, 3.89]	**1.98**	[1.79, 2.20]
No others present	**1.34**	[1.10, 1.61]	*1.06*	[.95, 1.18]
4. Personal Interviews, Married Only				
Unbounded	**4.06**	[2.34, 7.05]	**1.75**	[1.41, 2.17]
Spouse not present	**2.28**	[1.33, 3.92]	**1.95**	[1.52, 2.51]

Note: Italicized odds ratios are not statistically significant at $p<.05$.

Table 4. Multivariate Analyses of Methodological Characteristics of Interview on Victimization Rates: Females Only, NCVS 1997-2005.

	Rape and Sexual Assault		Other Serious Violence	
1. Replication of Panel 1, Table 3				
	Odds Ratio	[95% CI]	Odds Ratio	[95% CI]
	4.28	[3.49, 5.24]	**2.60**	[2.26, 2.99]
	1.19	[.95, 1.50]	**1.56**	[1.35, 1.81]
	0.94	[.73, 1.22]	**1.54**	[1.32, 1.80]
2. Including Time in Sample				
	Odds Ratio	[95% CI]	Odds Ratio	[95% CI]
Unbounded	**3.00**	[2.43, 3.72]	**1.94**	[1.68, 2.23]
In-person/none pres	*1.14*	[.90, 1.43]	**1.49**	[1.29, 1.72]
In-person/pres	*0.89*	[.69, 1.15]	**1.46**	[1.25, 1.71]
Time in sample	**0.76**	[.70, .82]	**0.80**	[.77, .83]

Note: Italicized odds ratios are not statistically significant at $p<.05$.

Table 5. Sample Subgroup Characteristics (%): Females Only, NCVS 1994-2009.

Age	
12-17	9.9
18-34	27.9
35-49	27.0
50+	35.2
Race/Ethnicity	
American Indian	.7
Asian	3.9
Black	12.5
Hispanic	11.2
White	71.3
Marital Status	
Widowed	9.4
Divorced	9.8
Separated	2.4
Never married	28.7
Married	49.0
Education Status	
Grammar school	10.4
Some high school	11.9
High school grad	13.6
Some college	21.7
College grad or more	36.0
Place of Residence	
Urban	30.2
Suburban	50.8
Rural	19.0
Poverty Status	
Above	65.2
At/Below	13.8
Missing	21.0
Living Quarters (17-24)	
House/apt	92.2
Student qtrs	2.7
Other	5.2
Armed Forces (18-34)	
Yes	.5
No	99.5
Family Structure (12-17)	
Married parents	69.7
Single parent/other	30.3

Table 6. Multivariate Analyses of Subgroup Risk for Rape/Sexual Assault with Methodological Factors: Females Only, NCVS 1994-2009

	Odds Ratio	[95% CI]	
Age (v. 50+)			
35 to 49	**4.60**	[3.31, 6.38]	*
18 to 34	**8.71**	[6.21, 12.22]	*
12 to 17	**9.23**	[6.31, 13.40]	*
Marital Status (v. married)			
Widowed	**2.48**	[1.43, 4.29]	
Divorced	**5.56**	[4.44, 6.96]	*
Separated	**10.51**	[7.89, 14.00]	*
Never married	**3.90**	[3.12, 4.87]	*
Education (v. college grad)			
Grammar school	*1.21*	[.91, 1.60]	
Some high school	**1.76**	[1.40, 2.21]	**
High school grad	**1.70**	[1.42, 2.04]	**
Some College	**1.67**	[1.39, 2.00]	
Poverty (v. missing)			
Above poverty	*1.02*	[.86, 1.21]	
At/below poverty	**1.68**	[1.39, 2.03]	
Race/ethnicity (v. NLWhite)			
NLBlack	**0.69**	[.57, .83]	**
Latina	**0.46**	[.37, .58]	**
NLAmerican Indian	**1.79**	[1.11, 2.87]	
NLAsian	**0.45**	[.29, .68]	
Place of residence (v. urban)			
Suburban	**0.79**	[.69, .92]	
Rural	**0.71**	[.57, .88]	
Bounded Interview			
No	**2.50**	[2.13, 2.94]	*
Type of interview (v. telephone)			
In-person/none pres	*1.10*	[.93, 1.30]	
In-person/pres	**0.75**	[.62, .90]	**

Note: Italicized odds ratios are not statistically significant at $p<.05$.
* Indicates that odds ratio for rape/sexual assault is significantly greater than odds ratio for other forms of serious violence. ** Indicates that odds ratio is significantly greater for serious violence than rape/sexual assault.

Table 7. Multivariate Analyses of Subgroup Risk for Rape/Sexual Assault with Methodological Factors: Females Only, NCVS 1997-2005 Replication.

	Odds Ratio	[95% CI]	Odds Ratio	[95% CI]
Age (v. 50+)				
35 to 49	**3.37**	[2.18, 5.22]	**3.26**	[2.11, 5.06]
18 to 34	**7.13**	[4.67, 10.89]	**6.60**	[4.32, 10.11]
12 to 17	**6.29**	[3.99, 9.92]	**6.01**	[3.81, 9.48]
Marital Status (v. married)				
Widowed	*1.80*	[.82, 3.96]	*1.78*	[.81, 3.93]
Divorced	**5.99**	[4.35, 8.24]	**5.85**	[4.25, 8.04]
Separated	**10.33**	[6.82, 15.66]	**10.08**	[6.66, 15.26]
Never married	**4.88**	[3.64, 6.53]	**4.81**	[3.59, 6.43]
Education (v. college grad)				
Grammar school	*1.34*	[.92, 1.93]	*1.24*	[.86, 1.79]
Some high school	**2.04**	[1.48, 2.82]	**2.03**	[1.48, 2.80]
High school grad	**1.57**	[1.22, 2.03]	**1.54**	[1.19, 1.99]
Some College	**1.43**	[1.11, 1.85]	**1.39**	[1.07, 1.79]
Poverty (v. missing)				
Above poverty	**1.35**	[1.05, 1.74]	**1.37**	[1.07, 1.76]
At/below poverty	**1.96**	[1.49, 2.59]	**1.96**	[1.49, 2.58]
Race/ethnicity (v. NLWhite)				
NLBlack	**0.67**	[.52, .88]	**0.67**	[.52, .89]
Latina	**0.42**	[.30, .58]	**0.42**	[.31, .59]
NLAmerican Indian	*1.77*	[.90, 3.50]	*1.75*	[.89, 3.45]
NLAsian	**0.45**	[.27, .74]	**0.45**	[.27, .74]
Place of residence (v. urban)				
Suburban	**0.78**	[.64, .94]	**0.78**	[.65, .94]
Rural	**0.54**	[.38, .76]	**0.54**	[.38, .77]
Bounded interview				
No	**2.51**	[2.03, 3.10]	**2.03**	[1.63, 2.54]
Type of interview (v. telephone)				
In-person/none pres	*1.16*	[.91, 1.46]	*1.12*	[.89, 1.42]
In-person/pres	**0.83**	[.63, 1.08]	*0.80*	[.61, 1.05]
Time in sample	-	-	**0.83**	[.77, .90]

Note: Italicized odds ratios are not statistically significant at p<.05.

Table 8. Analyses of Risk for Rape/Sexual Assault for Women of College Age (17-24): NCVS 1994-2009

	Odds Ratio	[95% CI]	
Student quarters	*1.38*	[.87, 2.20]	**2.45** [1.61, 3.74]*
Bounded Interview			
No	**2.69**	[2.08, 3.46]	
Type of interview (v. telephone)			
In-person/none pres	*1.02*	[.79, 1.34]	
In-person/pres	**0.55**	[.40, .74]	
Age	**0.90**	[.86, .94]	

*Bivariate model including student quarters only.

Note: Italicized odds ratios are not statistically significant at $p<.05$.

N=165,361

Table 9. Analyses of Risk for Rape/Sexual Assault for Females Ages 12-17: NCVS 1994-2009.

	Odds Ratio	[95% CI]	
Single parent/other family	**2.11**	[1.65, 2.71]	**2.25** [1.75, 2.87]*
Bounded Interview			
No	**2.22**	[1.56, 3.17]	
Age	**1.17**	[1.09, 1.27]	

*Bivariate model including family structure only.
N=135,577

Table 10. Predicted Probabilities for Selected Subgroups' Risks for Rape/Sexual Assault: Females Only, NCVS 1994-2009.

	Rate per 1,000	
All Females (12+)	1.0	*
1. Younger Females (12-34)	2.0	
Unmarried	2.8	
Unmarried and below poverty	4.3	
Separated	7.5	
Separated and below poverty	9.9	
2. Older Females (35+)	0.4	
Married	0.2	
Married and above poverty	0.2	
Married, above poverty, college grad	0.1	
Separated and below poverty	1.9	
3. Younger Females (12-34)	2.0	
Asian	1.0	
American Indian	5.0	
Unmarried, below poverty	9.0	
White	2.3	
Unmarried, below poverty	5.7	
Black	2.2	
Unmarried, below poverty	3.6	
Latina	1.2	
Unmarried, below poverty	2.4	
Urban, separated, below poverty	10.3	
Suburban, separated, below poverty	9.7	
Rural, separated, below poverty	9.4	

Note: Six-month prevalence rates based on the model shown in Table 6. *Rate=2.8 if unbounded.