# Prevalence of intimate partner violence among urban, suburban, and rural females

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# Introduction

- Intimate partner violence (IPV)
  - *"violence inflicted by current or former spouse, boyfriend, girlfriend, or dating partner"*
- IPV is a major public health problem
  - *Estimated cost of IPV: $8.3 billion annually*
  - *1 in 3 female homicide victims killed by an intimate partner*
  - *22% of all nonfatal violent victimizations of U.S. females, 1993-2004*
  - *Average prevalence of 6.4 nonfatal IPV victimizations per 1,000 females*

# Introduction

- Limited research on urban-rural differences in IPV prevalence
  - *Homicide by intimate partner more prevalent in rural areas*
  - *Much less is known about urban-rural differences in the prevalence of nonfatal IPV*
    - Small samples
    - Criminal justice or clinical samples
    - Regional data

# Objectives

- Examine nonfatal IPV in urban, suburban, and rural adult females
  - *Two analyses: Lifetime and in past 12 months*
    - Describe prevalence by geographic location
    - Identify associations between urban-rural status and victimization
      - *Control for demographic and socioeconomic characteristics*

# Data Source

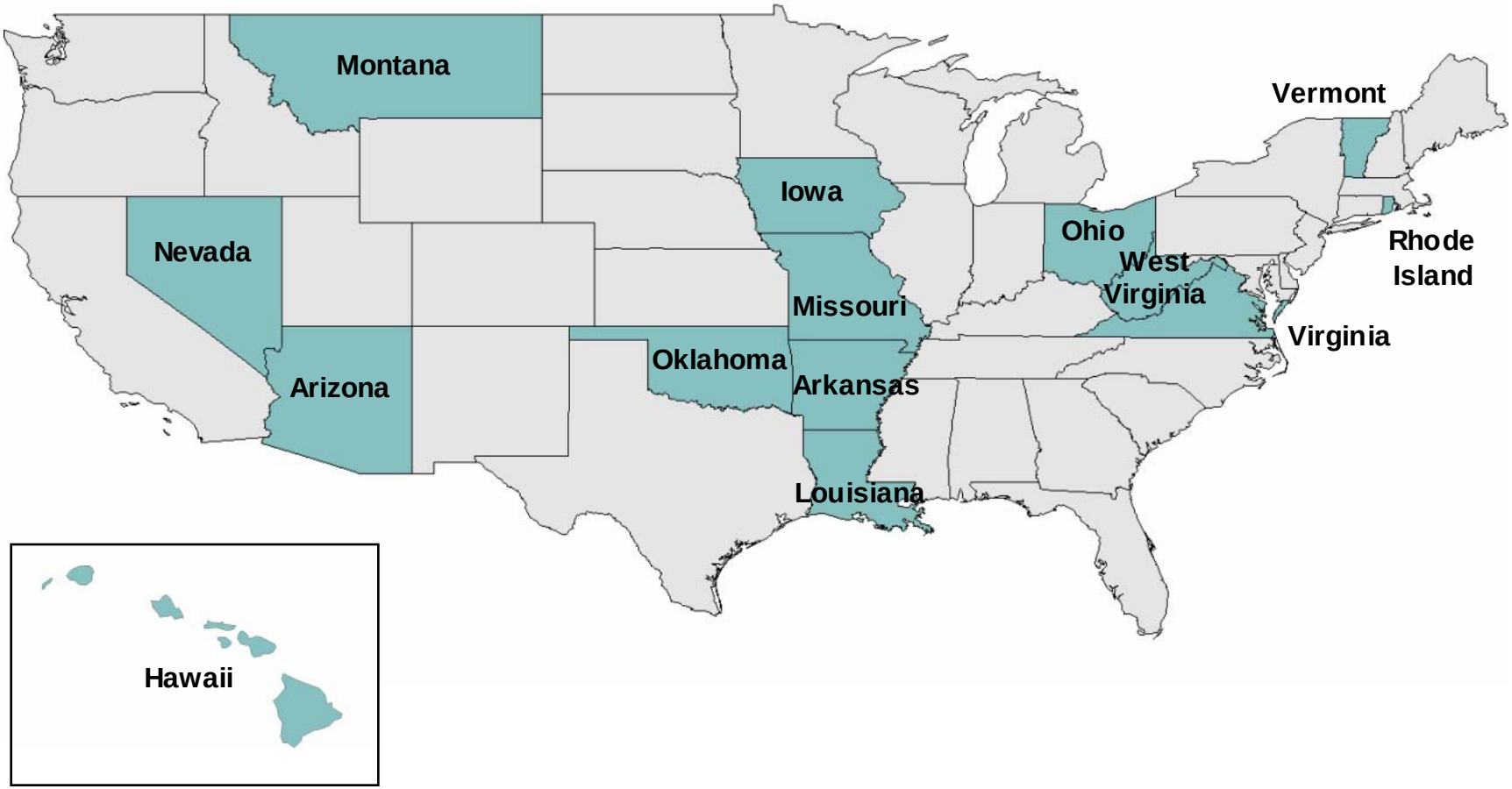
- Behavioral Risk Factor Surveillance System (BRFSS)
  - *State-based cross-sectional survey*
    - Core module
    - Optional modules
    - State-added questions
  - *Respondents age 18 and above*
  - *Nationally representative sample*

Behavioral Risk Factor Surveillance System http://www.cdc.gov/brfss/questionnaires/english.htm

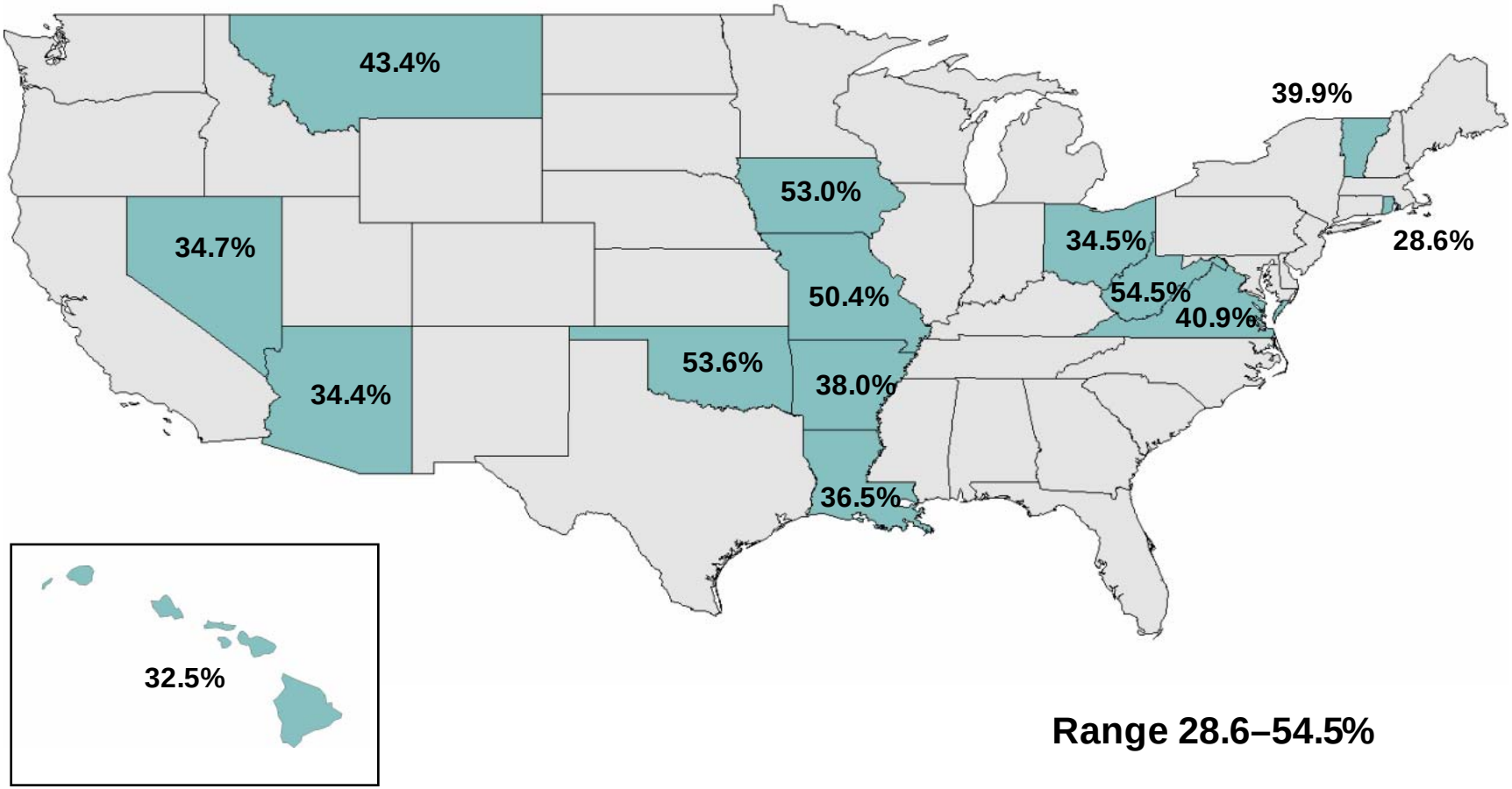
# Data Source

- 2005-06 Optional IPV Module
  - *48,892 female respondents*
- Lifetime
  - *Has an intimate partner ever hit, slapped, pushed, kicked, or hurt you in any way?*
  - *Have you ever experienced any unwanted sex by a current or former intimate partner?*
- Past 12 months
  - *In the past 12 months, have you experienced any physical violence or had unwanted sex with an intimate partner?*

# BRFSS Optional IPV Module 2005-06
# 14 Participating States

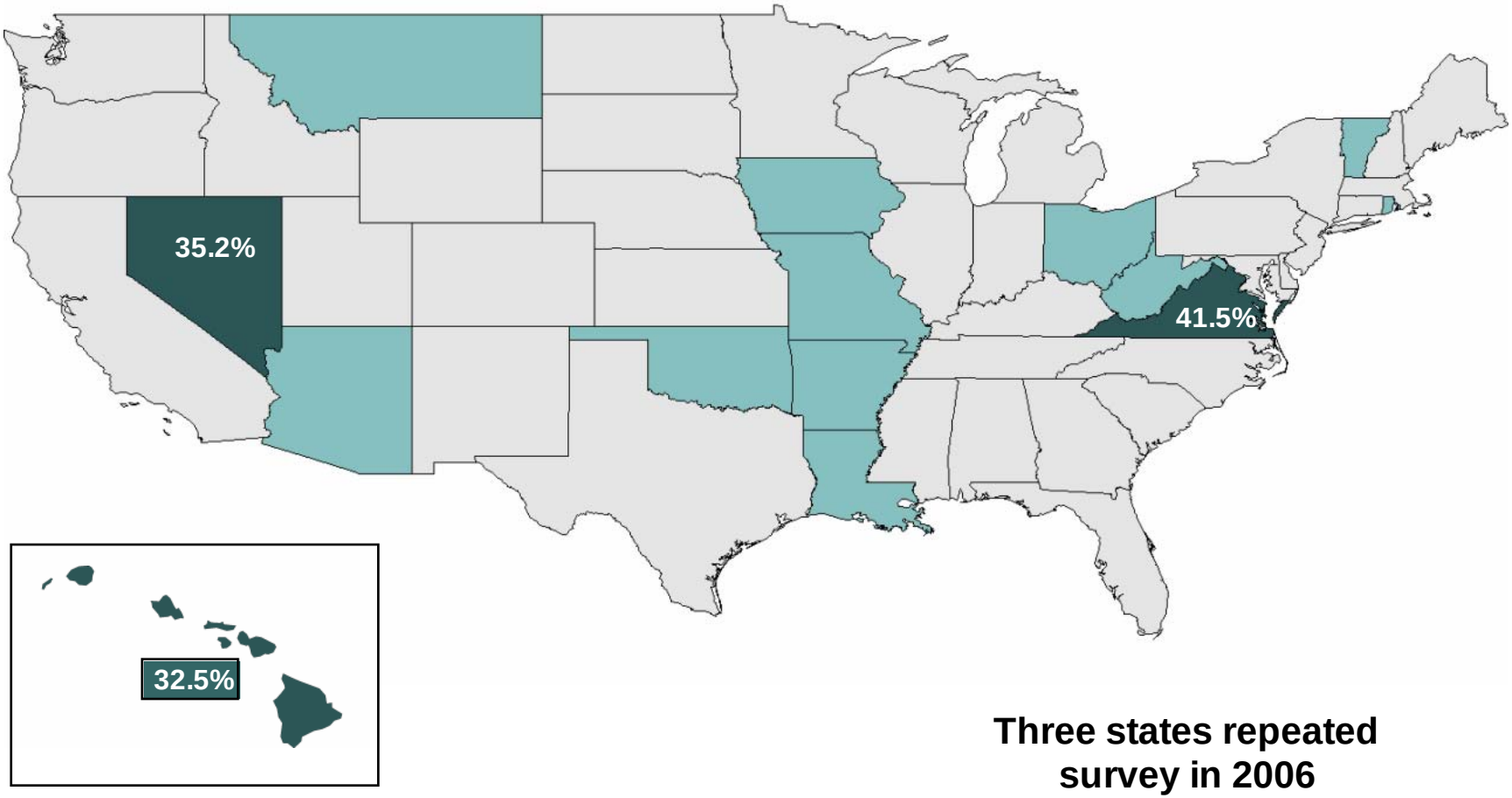


# 2005 BRFSS Core Module Response Rates




**Range 28.6–54.5%**

# 2006 BRFSS Core Module Response Rates




**Three states repeated survey in 2006**

# Methods

- Chi-squared test of independence
- Differences in prevalence of nonfatal IPV by metropolitan status
  - *Center city of metropolitan statistical area (MSA)*
  - *Outside MSA center city, inside county of center city*
  - *Inside suburban county of MSA*
  - *In MSA with no center city*
  - *Not MSA*

Behavioral Risk Factor Surveillance System ftp.cdc.gov/pub/data/brfss/codebook_06.rtf

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# Methods

- Multivariate logistic regression
  - *Stratified by time of victimization*
    - Lifetime and in past 12 months
  - *Measure: Adjusted Odds Ratio ($OR_{Adj}$)*
    - Compare probability of event in group of interest to reference group
      - *OR < 1 (group of interest less likely)*
      - *OR = 1 (groups equally likely)*
      - *OR > 1 (group of interest more likely)*

# Methods

- Event: Nonfatal IPV
  - *Adjusted Odds Ratio ($OR_{Adj}$)*
    - Each individual variable, while controlling for all others
      - *Age*
      - *Children in household*
      - *Education*
      - *Income*
      - *Marital status*
      - *Metropolitan status*
      - *Race*
      - *State of residence*

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      - *Race*
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      - *State of residence*

# Results

| Self-reported Prevalence of IPV | | | |
|---|---|---|---|
| | *Total Respondents* | *Lifetime Victimization* | *Past 12 Months Victimization* |
| **Total** | **48,892** | **11,603 (23.7%)** | **719 (6.2%)** |

# Results

| Nonfatal IPV Prevalence Among Females | | |
|---|---|---|
| *Metropolitan Status* | *Lifetime* | *Past 12 Months* |
| Center city | 25.1% | 8.0% |
| Outside center city | 21.0% | 6.5% |
| Inside suburban county | 23.0% | 8.6% |
| Not MSA | 22.8% | 8.0% |
| Omnibus Chi-squared | 14.7 ($p$=0.002) | 2.2 ($p$=0.531) |

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# Results

| Multivariate Associations with Victimization | | |
|---|---|---|
| | *Lifetime* | *Past 12 Months* |
| *Metropolitan Status* | $OR_{Adj}$ (95% CI) | $OR_{Adj}$ (95% CI) |
| Center city | 1.00 (reference) | 1.00 (reference) |
| Outside center city | **0.82 (0.71-0.94)** | 0.96 (0.62-1.51) |
| Inside suburban county | 0.95 (0.82-1.09) | 0.92 (0.51-1.66) |
| Not MSA | **0.88 (0.79-0.98)** | 1.59 (0.74-1.59) |

# Results

| Multivariate Associations with Victimization | | |
|---|---|---|
| | *Lifetime* | *Past 12 Months* |
| *Age Group* | $OR_{Adj}$ (95% CI) | $OR_{Adj}$ (95% CI) |
| 18-24 | 1.00 (reference) | 1.00 (reference) |
| 25-34 | 1.20 (0.96-1.48) | **0.26 (0.15-0.44)** |
| 35-44 | 1.12 (0.90-1.39) | **0.17 (0.10-0.31)** |
| 45-64 | 1.15 (0.92-1.42) | **0.11 (0.06-0.21)** |
| 65+ | **0.78 (0.62-0.98)** | **0.05 (0.02-0.11)** |

# Results

| Multivariate Associations with Victimization | | |
|---|---|---|
| | *Lifetime* | *Past 12 Months* |
| *Children in household* | $OR_{Adj}$ (95% CI) | $OR_{Adj}$ (95% CI) |
| None | 1.00 (reference) | 1.00 (reference) |
| One or more | **1.16 (1.04-1.30)** | 1.30 (0.90-1.88) |
| *Education* | | |
| High school or less | 0.96 (0.86-1.06) | **1.39 (1.02-1.90)** |
| College graduate or equal | 1.00 (reference) | 1.00 (reference) |

# Results

| Multivariate Associations with Victimization | | |
|---|---|---|
| | *Lifetime* | *Past 12 Months* |
| *Income* | $OR_{Adj}$ (95% CI) | $OR_{Adj}$ (95% CI) |
| Less than $25,000 | 1.00 (reference) | 1.00 (reference) |
| $25,000-50,000 | **0.78 (0.70-0.88)** | 0.80 (0.54-1.18) |
| More than $50,000 | **0.62 (0.54-0.72)** | **0.31 (0.20-0.48)** |
| *Marital Status* | | |
| Single | 0.98 (0.83-1.17) | 0.73 (0.42-1.26) |
| Married | 1.00 (reference) | 1.00 (reference) |
| Div./Wid./Sep. | **2.71 (2.43-3.03)** | **1.67 (1.10-2.53)** |

# Results

| Multivariate Associations with Victimization | | |
|---|---|---|
| | *Lifetime* | *Past 12 Months* |
| *Race* | $OR_{Adj}$ (95% CI) | $OR_{Adj}$ (95% CI) |
| White | 1.00 (reference) | 1.00 (reference) |
| Black | **0.76 (0.63-0.90)** | 1.14 (0.74-1.77) |
| Hispanic | **0.53 (0.42-0.67)** | 1.65 (0.86-3.16) |
| Other | 1.10 (0.93-1.32) | 1.22 (0.77-1.93) |

# Conclusions

- Nonfatal IPV
  - *Lifetime and past year IPV prevalence similar to that reported in smaller population-based surveys*
  - *No significant urban-rural differences in victimization during past 12 months*
  - *When considered along with prior research demonstrating a higher prevalence of IPV homicide among rural females, this suggests that IPV is not more prevalent, but is more likely to escalate to homicide among women living in rural areas*
- Lifetime prevalence findings consistent with existing literature
  - *Except protective effect for Black and Hispanic females*

# Limitations

- Results are based on cross-sectional data
- Direct comparisons with other studies difficult due to differences in question wording, and associations between location and study populations
- Limited representation for nonwhite females
- Self-reported data
- Despite weighting to adjust for sampling and nonresponse, these data from 14 states may not be representative of total U.S. population
- Lifetime victimization does not include consideration of place of residence at time of incident

# Recommendations

- Future studies of urban-rural nonfatal IPV
  - *Understand rural differences between fatal and nonfatal IPV*
  - *Study observed minority differences*
  - *Identify associations between nonfatal IPV and health outcomes and behaviors*
- Policy
  - *Target interventions in rural areas*
  - *Reduce differential enforcement of existing policies and legal procedures*

# Acknowledgement


- Funding agency
  - *National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (CDC), Atlanta, Georgia*


- References available upon request
  - *pbaughman@hsc.wvu.edu*

| Multivariate Associations with Victimization | | |
|---|---|---|
| | $OR_{Adj}$ (95% CI) | |
| *State* | *Lifetime* | *Past 12 Months* |
| Arizona | **0.69 (0.54-0.88)** | 1.03 (0.41-2.58) |
| Arkansas | **0.82 (0.68-0.98)** | 0.78 (0.39-1.59) |
| Hawaii | **0.56 (0.46-0.69)** | 1.14 (0.8-2.25) |
| Iowa | **0.74 (0.61-0.89)** | **0.35 (0.15-0.85)** |
| Louisiana | **0.59 (0.49-0.71)** | 1.13 (0.58-2.22) |
| Missouri | **0.79 (0.64-0.96)** | 1.00 (0.48-2.06) |
| Montana | **0.69 (0.56-0.83)** | 0.52 (0.24-1.11) |
| Nevada | 1.00 (reference) | 1.00 (reference) |
| Ohio | 0.92 (0.75-1.12) | 0.53 (0.25-1.13) |
| Oklahoma | **0.71 (0.60-0.85)** | **0.44 (0.23-0.86)** |
| Rhode Island | **0.55 (0.44-0.69)** | 1.25 (0.58-2.70) |
| Vermont | **0.69 (0.57-0.83)** | 0.93 (0.45-1.93) |
| Virginia | **0.70 (0.58-0.85)** | 0.85 (0.42-1.72) |
| West Virginia | 0.88 (0.72-1.08) | 0.62 (0.28-1.37) |

| Sample Composition | | | | | | |
|---|---|---|---|---|---|---|
| | Total Sample | | | Victims | | |
| | *Total %* | *Black %* | *Hispanic %* | *Total %* | *Black %* | *Hispanic %* |
| *State* | | | | | | |
| Arizona | 4.1 | 0.6 | **20.7** | 4.1 | 0.5 | **13.8** |
| Arkansas | 6.3 | 8.4 | 3.5 | 6.8 | 9.6 | 2.2 |
| Hawaii | **13.5** | 1.4 | **21.8** | **12.0** | 0.9 | **29.9** |
| Iowa | 5.5 | 0.8 | 2.7 | 4.9 | 1.1 | 2.0 |
| Louisiana | 7.1 | **23.4** | 4.4 | 5.7 | **17.7** | 3.0 |
| Missouri | 5.5 | 6.7 | 2.3 | 5.7 | 7.2 | 2.5 |
| Montana | 5.8 | 0.1 | 2.4 | 5.2 | 0.0 | 4.0 |
| Nevada | 5.9 | 2.0 | **14.7** | 7.7 | 1.7 | **18.3** |
| Ohio | 6.4 | **19.7** | 2.2 | 7.6 | **29.1** | 1.5 |
| Oklahoma | **13.1** | 7.2 | **9.9** | **14.7** | 6.8 | **11.5** |
| Rhode Island | 3.6 | 1.9 | 5.4 | 2.9 | 1.1 | 3.0 |
| Vermont | 7.2 | 0.1 | 2.7 | 6.7 | 0.1 | 1.5 |
| Virginia | **11.4** | **26.2** | 5.7 | **10.6** | **22.5** | 6.0 |
| West Virginia | 3.8 | 1.1 | 0.9 | 4.4 | 1.1 | 0.2 |