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Prevalence of Rural Intimate Partner Violence in 16 US States, 2005

Matthew J. Breiding, PhD;¹ Jessica S. Ziembroski, PhD;² and Michele C. Black, PhD¹

ABSTRACT: *Context:* Intimate partner violence (IPV) is a public health problem that affects people across the entire social spectrum. However, no previous population-based public health studies have examined the prevalence of IPV in rural areas of the United States. Research on IPV in rural areas is especially important given that there are relatively fewer resources available in rural areas for the prevention of IPV. **Methods:** In 2005, over 25,000 rural residents in 16 states completed the first-ever IPV module within the Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is a Centers for Disease Control and Prevention-sponsored annual random-digit-dialed telephone survey. The BRFSS provides surveillance of health behaviors and health risks among the non-institutionalized adult population of the United States and several US territories. **Findings:** Overall, 26.7% of rural women and 15.5% of rural men reported some form of lifetime IPV victimization, similar to the prevalence found among men and women in non-rural areas. Within several states, those living in rural areas evidenced significantly higher lifetime IPV prevalence than those in non-rural areas. **Conclusion:** IPV is a significant public health problem in rural areas, affecting a similar portion of the population as in non-rural areas. More research is needed to examine how the experience of IPV is different for rural and non-rural residents.

residents in the United States, we know of no large-scale population-based public health studies measuring the prevalence of IPV in the rural United States.⁷ However, one study examining a single rural community examined severe physical IPV and found that 2.9% of women, and 4.7% of men, had experienced severe physical violence in the past year.⁸ Another study of a single rural community found that 13.6% of men had perpetrated an act of physical violence toward their partner in the past year, as reported by either the man or his partner.⁹ Data from the National Crime Victimization Survey revealed that 3.9 per 1,000 rural women, and 0.8 per 1,000 rural men, reported experiencing rape, sexual assault, robbery, or physical assault by an intimate in the past year.¹⁰ However, crime surveys may underestimate the scope of IPV because certain acts of violence by an intimate may not be considered a crime by survey respondents.¹¹

Valid and reliable population-based IPV prevalence estimates among people living in rural areas are needed in order to estimate the magnitude of the problem in rural areas. In addition, better information regarding rural IPV is needed in order to address some of the unique challenges faced by those in rural settings. Specifically, individuals in rural areas often have fewer resources available to address IPV. There are fewer domestic violence shelters, physical and mental health

Intimate partner violence (IPV) is a public health problem that affects people across the entire social spectrum. The Centers for Disease Control and Prevention has defined IPV as threatened, attempted, or completed physical or sexual violence, as well as the infliction of emotional abuse in the context of physical or sexual violence.¹ IPV includes violence by a spouse, ex-spouse, current or former boyfriend or girlfriend, dating partner, or date.¹ The health effects of IPV go beyond the risk of injury, as IPV is associated with both long-term mental and physical health consequences.²⁻⁵

Approximately 17% of the US population lived in rural areas in 2005.⁶ Despite the large number of rural

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professionals, and law enforcement personnel per capita than for those living in non-rural areas.¹²⁻¹⁶ In addition, rural residents are also more likely to be underinsured than are those in many urban and suburban areas.^{17,18} A lack of insurance likely limits the ability of many victims to seek health care for the physical and mental health problems associated with IPV.

Rural communities are often made up of tightly knit social networks where individuals depend heavily on one another yet, paradoxically, value privacy and self-sufficiency to a significant degree.^{19,20} This dynamic may contribute to decreased help-seeking among those who have experienced IPV. In addition, rural populations may display more traditional gender roles than in non-rural places.²¹ Traditional gender role norms may create an environment in which violence in intimate relationships is viewed as more socially acceptable.^{22,23} Each of the aforementioned characteristics of rural communities likely make it more difficult for those who experience IPV to seek the resources they need.

Another reason for concern is that the percentage of individuals in rural areas that experience poverty is higher than in urban or suburban areas. In 2003, 14.2% of the population living in non-metropolitan areas were at or below poverty levels compared to 12.1% in metropolitan areas.²⁴ The link between poverty and IPV has been well established.²⁵⁻²⁸ Poverty greatly contributes to family and relationship stress, and limits victims' ability to leave abusive partners or family members. Geographic and social isolation, poverty, lack of resources, and resultant stress in rural areas may create unique risks for those experiencing IPV in rural families.

The paucity of reliable data on the extent of IPV experienced by rural residents in the United States is noteworthy. There has been little research attention paid to rural IPV, and successful strategies for prevention of rural IPV are still relatively unknown. This study provides estimates of the prevalence of IPV among both women and men in rural areas, and compares the prevalence of IPV in rural areas to those in non-rural areas.

Methods

This study utilized data collected as part of the 2005 Behavioral Risk Factor Surveillance System (BRFSS) survey. The BRFSS is an ongoing, yearly, random-digit-dialed telephone survey developed by the Centers for Disease Control and Prevention to provide surveillance of health behaviors and health risks among the non-institutionalized adult population

of the United States and several US territories. In 2005, an optional IPV module was available for use at the discretion of each state/territory.²⁹ The IPV module was administered to the entire survey sample in 10 US states (AZ, HI, IA, MO, NV, OH, OK, RI, VT, VA), Puerto Rico, and the US Virgin Islands. Six states (MA, MI, NE, NM, OR, WA) administered the module to a randomly assigned split sample. Puerto Rico and the US Virgin Islands were excluded from analysis as rural status was not examined in these territories. In the 16 states examined, a total of 65,737 participants completed the IPV module, of which 25,789 (15,598 women and 10,191 men) were classified as living in a rural area.

Among the 16 states included in the analysis, response rates for the BRFSS core ranged from 37.8% in Massachusetts to 66.7% in Nebraska, with a median of 51.3%.³⁰ Data were weighted to provide estimates that are representative of each state's population. The design and characteristics of BRFSS are described in greater detail elsewhere.³¹ Overall, among the states we evaluated, approximately 18.3% of all respondents who completed the BRFSS core interview dropped out before completing the various optional modules being administered by individual states (overall completion rates ranged from 62.5% in Puerto Rico to 96.5% in Oregon). Because of the differing sets of optional modules administered across states, it is unclear how many of these respondents discontinued during a previous module or just prior to the IPV module.

The IPV module was the final module administered. Before beginning the module, respondents were told that the next questions were regarding physical and sexual violence victimization by an intimate partner. Respondents were explicitly informed that they could skip any question and that the entire module could be skipped if they considered answering such questions unsafe. The IPV module included the following 4 initial questions related to lifetime physical and sexual IPV victimization: (1) "Has an intimate partner ever threatened you with physical violence? This includes threatening to hit, slap, push, kick, or hurt you in any way"; (2) "Has an intimate partner ever attempted physical violence against you? This includes times when they tried to hit, slap, push, kick, or otherwise hurt you, but they were not able to"; (3) "Has an intimate partner ever hit, slapped, pushed, kicked, or hurt you in any way?"; and (4) "Have you ever experienced any unwanted sex by a current or former intimate partner?" "Unwanted sex" was defined with the following statement: "Unwanted sex includes things like putting anything into your vagina [if female], anus, or mouth or making you do these things to them after you said or showed that you didn't want to. It includes times when you were unable to consent,

for example, you were drunk or asleep, or you thought you would be hurt or punished if you refused.”

Respondents who reported any experience of physical violence or nonconsensual sex by an intimate partner were also asked, “In the past 12 months, have you experienced any physical violence or had nonconsensual sex with an intimate partner?” Respondents who reported physical or sexual IPV within the past 12 months were asked: “In the past 12 months, have you had any physical injuries, such as bruises, cuts, scrapes, black eyes, vaginal or anal tears, or broken bones, as a result of this physical violence or unwanted sex?” Prior to the administration of the questions an intimate partner was defined as “any current or former spouse, boyfriend, or girlfriend. Someone you dated would also be considered an intimate partner.”

Rural status was defined using the metropolitan statistical area (MSA) variable within BRFSS. Areas are designated an MSA based on criteria from the US Office of Management and Budget (OMB). The OMB currently defines an MSA as an “urbanized area that has a population of at least 50,000. The Metropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured through commuting.”³² Respondents were classified as rural if their MSA designation within the BRFSS data set was “Not in an MSA,” whereas respondents were classified as non-rural if their MSA designation was any of the following: “In an MSA that has no center city”; “Inside a suburban county of the MSA”; “Outside the center city of an MSA but inside the county containing the center city”; or “In the center city of an MSA.”

Analyses. Analyses were conducted using SUDAAN, version 9.0 (Research Triangle Institute, Research Triangle Park, NC). Weighted estimates of lifetime and 12-month IPV victimization prevalence were calculated. Lifetime IPV prevalence estimates were based on respondents’ reports of experiencing any combination of the lifetime IPV behaviors measured (threatened, attempted, or completed physical violence, and nonconsensual sex) by a current or former intimate partner. Twelve-month prevalence estimates were based upon a single question that assessed both completed physical violence and nonconsensual sex in the past year. Data analyses describing lifetime IPV were based upon data from all 16 states that administered the module. Because Washington used a different protocol to assess IPV in the 12 months preceding the survey, 12-month prevalence was calculated for 15 states.

Twelve-month and lifetime prevalence estimates were stratified by sex and rural status. Lifetime prevalence estimates were further stratified by the state of residence. State-level 12-month prevalence estimates by rural status are not reported because most estimates were deemed unstable (ie, relative standard error > 0.30) for most states. Bivariate logistic regression models compared lifetime IPV prevalence estimates by rural status, stratified by state of residence and sex.

Results

Table 1 shows overall lifetime and 12-month IPV prevalence estimates stratified by sex and rural status for each of the participating states combined. Overall, 26.7% of women and 15.5% of men in rural areas reported experiencing IPV in their lifetime. This compares to 26.8% of women and 16.1% of men in non-rural areas. Prevalence estimates were not significantly different in rural areas in comparison to non-rural areas for men (crude odds ratio [cOR] = 0.96, 95% confidence interval [CI] 0.83-1.10) and for women (cOR = 0.99, 95% CI 0.91-1.08). Approximately 1.4% of women and 0.6% of men in rural areas reported experiencing IPV in the past 12 months, as compared to 1.4% of women and 0.8% of men in non-rural areas. Again, prevalence estimates in rural areas were not significantly different from those observed in non-rural areas for both men (cOR = 0.85, 95% CI 0.45-1.61) and women (cOR = 0.97, 95% CI 0.70-1.36). Finally, 0.7% of rural women reported injury due to IPV in the past 12 months, compared to 0.9% of non-rural women, a nonsignificant difference (cOR = 0.78, 95% CI 0.49-1.24). Twelve-month prevalence of IPV injuries are not reported for men as the estimates were deemed unstable due to a relative standard error (RSE) for this estimate greater than 0.30. Differences in the prevalence of rural and non-rural IPV were also compared with the state of residence included as a control variable. However, similar to the above results, there was no significant effect of rural status on IPV prevalence.

Table 2 displays lifetime IPV prevalence estimates stratified by the state of residence, sex, and rural status. Twelve-month IPV prevalence estimates were generally unstable when broken down by the state of residence, sex, and rural status, and consequently are not reported in the following analyses. For women we observed that lifetime IPV prevalence in rural areas ranged from 20.9% in Nebraska to 40.0% in Nevada. For men, lifetime IPV prevalence in rural areas ranged from 11.8% in Iowa to 23.5% in Arizona. In comparing the prevalence of IPV in rural areas to non-rural areas within each state we identified a number of significant differences. For men, those in rural Arizona evidenced

Table 1. Prevalence of Lifetime and 12-Month Intimate Partner Violence, by Rural Status and Sex—16 US States, 2005

	Female						Male					
	Rural			Non-Rural			Rural			Non-Rural		
	n	WTD%	95% CI	n	WTD%	95% CI	n	WTD%	95% CI	n	WTD%	95% CI
Lifetime												
Any*	4,228	26.7	25.3-28.0	6,658	26.8	25.8-27.7	1,459	15.5	13.9-17.0	2,481	16.1	15.1-17.1
Threatened physical	3,256	20.3	19.1-21.6	4,952	19.2	18.5-20.0	861	9.3	7.9-10.6	1,380	8.6	7.9-9.4
Attempted physical	2,452	15.9	14.7-17.1	3,662	14.4	13.6-15.1	1,010	10.7	9.3-12.0	1,670	10.5	9.7-11.3
Completed physical	3,366	21.5	20.2-22.8	5,141	20.2	19.4-21.0	985	9.9	8.8-11.0	1,718	11.1	10.3-11.9
Unwanted sex	1,700	10.3	9.4-11.2	2,595	10.3	9.7-11.0	127	1.3	0.7-1.9	211	1.4	1.1-1.8
Completed physical and/or unwanted sex	3,778	24.2	22.8-25.5	5,923	23.9	23.0-24.8	1,047	10.4	9.2-11.5	1,825	11.8	11.0-12.7
12 months [†]												
Completed physical and/or unwanted sex	227	1.4	1.0-1.8	316	1.4	1.2-1.7	70	0.6 [‡]	0.3-1.0	90	0.8	0.5-1.0
Injury	102	0.7	0.4-0.9	163	0.9	0.6-1.1	30	— [§]	— [§]	23	0.2 [‡]	0.1-0.3

WTD = weighted.

*Includes threatened, attempted, and completed physical violence as well as unwanted sex.

[†]Based on a total of 15 states (all except Washington).

[‡]Potentially unstable estimate (0.23 < RSE < 0.30).

[§]Unstable estimate (RSE > 0.30).

Table 2. Prevalence of Lifetime Intimate Partner Violence,* by State, Rural Status, and Sex—16 US States, 2005

State	Female						Male					
	Rural			Non-Rural			Rural			Non-Rural		
	n	WTD%	95% CI	n	WTD%	95% CI	n	WTD%	95% CI	n	WTD%	95% CI
Arizona	184	24.0	(19.7-28.2)	356	22.4	(19.0-25.8)	84	23.5	(17.4-29.6)	108	13.1	(9.6-16.7)
Hawaii	524	26.3	(23.8-28.9)	323	19.2	(16.9-21.6)	203	17.7	(14.8-20.7)	154	14.5	(11.8-17.1)
Iowa	284	22.8	(20.1-25.5)	375	23.4	(20.9-25.9)	88	11.8	(9.2-14.5)	134	15.2	(12.3-18.1)
Massachusetts	— [†]	— [†]	— [†]	414	22.7	(19.8-25.6)	— [†]	— [†]	— [†]	158	13.9	(11.1-16.6)
Michigan	180	26.2	(22.0-30.4)	554	25.6	(23.4-27.9)	57	14.1	(10.0-18.1)	187	14.8	(12.4-17.2)
Missouri	298	25.8	(22.5-29.0)	487	27.8	(24.7-31.0)	94	13.2	(10.1-16.4)	166	17.0	(13.3-20.7)
Nebraska	298	20.9	(18.0-23.7)	173	23.1	(19.3-26.9)	101	12.7	(9.7-15.7)	45	9.7	(6.2-13.2)
Nevada	147	40.0	(34.1-45.8)	317	34.4	(29.8-39.1)	71	21.5	(16.4-26.6)	209	23.3	(19.3-27.2)
New Mexico	160	24.2	(20.3-28.2)	231	29.0	(25.0-32.9)	53	16.0	(11.0-20.9)	62	13.6	(9.6-17.6)
Ohio	69	25.8	(19.9-31.6)	943	30.4	(27.5-33.3)	29	17.6	(10.1-25.1)	347	16.0	(13.2-18.9)
Oklahoma	1,128	27.4	(25.2-29.6)	738	26.7	(24.2-29.1)	341	16.1	(13.6-18.6)	236	15.1	(12.2-17.9)
Oregon	108	37.7	(31.3-44.0)	244	27.9	(24.5-31.4)	31	19.8	(12.6-26.9)	102	17.1	(13.5-20.6)
Rhode Island	— [‡]	— [‡]	— [‡]	386	21.4	(19.0-23.7)	— [‡]	— [‡]	— [‡]	135	12.9	(10.2-15.5)
Vermont	640	24.7	(22.7-26.7)	246	22.1	(19.1-25.1)	236	13.6	(11.6-15.6)	97	13.2	(10.4-16.1)
Virginia	162	26.1	(21.7-30.6)	589	28.2	(25.5-30.8)	55	14.4	(10.0-18.9)	227	17.7	(14.7-20.8)
Washington	46	37.6	(27.0-48.1)	282	28.5	(25.0-32.0)	16	16.9	(6.8-27.0)	114	19.4	(15.4-23.3)

WTD = weighted.

*Includes threatened, attempted, and completed physical violence as well as non-consensual sex.

[†]Only 15 respondents in Massachusetts were classified as "not in an MSA," and none reported IPV.

[‡]No respondents in Rhode Island were classified as "not in an MSA."

significantly higher lifetime IPV prevalence than men in Arizona who did not live in a rural community (cOR = 2.02, 95% CI 1.28-3.21). For women, those in rural Hawaii demonstrated significantly higher lifetime IPV prevalence than women in Hawaii who did not live in a rural community (cOR = 1.50, 95% CI 1.23-1.83). Finally, women in rural Oregon evidenced significantly higher lifetime IPV prevalence than women in Oregon who did not live in a rural community (cOR = 1.56, 95% CI 1.13-2.15).

Discussion

This study is the first public health study to provide population-based IPV prevalence estimates for those living in rural areas. For both men and women we found no significant differences in either 12-month or lifetime IPV prevalence when comparing those living in rural areas to those living in non-rural areas. The results of the study indicate that IPV is as much a public health issue for both rural women and men as for those living in non-rural areas. This is significant because while IPV may be similarly prevalent in rural and non-rural areas, there are likely far fewer resources to prevent or address IPV in rural communities.¹²⁻¹⁸

Overall, in the 16 states that participated in the survey, 26.7% of women and 15.5% of men in rural areas reported some form of physical or sexual IPV during their lifetime. Further, there was significant variation in the prevalence of lifetime IPV in rural areas by state. Within some states, those living in rural areas evidenced significantly higher lifetime IPV prevalence than their non-rural counterparts. Specifically, rural men in Arizona were more likely to report IPV than non-rural men in Arizona, rural women in Hawaii were more likely to report IPV than non-rural women in Hawaii, and rural women in Oregon were more likely to report IPV than non-rural women in Oregon. These results indicate that in some states there may be an even greater need for IPV prevention resources in rural areas than in non-rural areas.

Rural populations may be a particularly vulnerable group to the associated risks of IPV, as rural areas are underserved in terms of physical and mental health services.¹²⁻¹⁶ One contributing factor may be perceptions of rural life by health care providers and policymakers alike. In a survey of legislators and other respondents, rural communities represented traditional American values and a better quality of life for many.²⁰ In addition, Americans generally consider people who live outside the nation's urban areas to be safer from violence, less concerned about material possessions and more concerned about family, spiritual matters, and community.²⁰

The impact of IPV may be particularly damaging in our nation's rural areas due to a relative lack of health resources. Consequently, it is important for rural health care practitioners to be conscious of the public health problem posed by IPV. Assessing exposure to IPV as part of standard clinical practice is recommended by several medical organizations such as the American Medical Association and the American College of Obstetricians and Gynecologists.^{33,34} Assessment of IPV in rural health care settings may be particularly important in rural communities as rural residents typically have fewer opportunities outside of a doctor's office to disclose abuse. Further, without an obvious opportunity, rural residents may be more reluctant to disclose IPV, for reasons previously mentioned (greater community interdependence, greater value placed on privacy). Assessment of IPV in rural clinical settings may be an excellent opportunity for secondary prevention, helping to prevent chronic IPV and the many known health difficulties associated with IPV, such as chronic disease and negative health behaviors.³⁵

The results of this study also point to the need for regular surveillance of IPV conducted at the state level. The finding that rural residents in certain states evidence higher IPV prevalence than their non-rural counterparts is not evident when analyzing data for all states combined. Given that much of the funding for IPV prevention is allocated at the state level, estimates such as these can be helpful to states in pointing to where the highest levels of IPV occur, and helpful in allocating limited prevention resources to those areas most in need. In addition, the lack of regular, ongoing surveillance, using uniform definitions and survey methods across states has hindered efforts to track rural IPV. Without such ongoing IPV surveillance, it is difficult for state and federal public health officials to monitor trends in nonfatal IPV and to guide and evaluate prevention efforts.

Future studies might examine whether rural populations evidence greater susceptibility to the long-term effects of IPV given the lack of preventive health infrastructure. In addition, further studies are needed to identify how IPV experienced in rural areas may be different from how IPV is experienced in non-rural areas. For instance, there is evidence to suggest that rural areas often ascribe to more traditional gender role norms.²¹ More traditional gender role norms are believed to put women, in particular, at greater risk of IPV^{36,37} although this has not been shown directly among rural populations. Future studies may also examine whether attitudes about IPV are considered relatively more normative or acceptable within rural couples and families. Finally, within rural communities there appear to be a number of barriers to

reporting and seeking help for IPV, barriers such as tightly knit social networks and fewer health care resources.¹²⁻²³ However, the relationship between these barriers and seeking help has not been directly tested.

Limitations. Because of the limited number of questions that could be asked, questions regarding emotional abuse were not asked, and 12-month completed physical IPV and unwanted sex were combined into 1 question, making it impossible to estimate their prevalence separately. In addition, no measures of stalking were included in this study even though others have found that IPV victims are often stalked by their partners.^{38,39} Although the manner in which we classified rural status is similar to the classification used in the 2000 Census,⁴⁰ it likely does not capture the full range of the urban-rural continuum as well as other systems of classification. While data from the study are representative of each participating state/territory, and representative cumulatively of the 16 states surveyed, the data do not provide national estimates of rural IPV prevalence. The relatively low response rate in certain states might introduce relatively greater bias in the estimates, although some studies have shown that nonresponse does not necessarily introduce additional bias overall.⁴¹ Finally, because the BRFSS is a telephone survey of residential households, those who do not live in a household residence (prisons, nursing homes, military bases, college dormitories, shelters, the homeless) and households that do not have a landline telephone are not included in the sample.

Conclusions

The results presented here indicate that IPV is a significant public health problem in rural areas, affecting a similar portion of the population as in non-rural areas. Certain characteristics of rural life, such as relatively greater community interdependence and relatively fewer health care resources, likely make the experience of IPV unique for rural residents. Consequently, more research is needed to examine how the experience of IPV is different for rural and non-rural residents. The prevalence of rural IPV reported in this study, combined with a lack of health resources available in rural areas, point to the need for public health prevention efforts that specifically address the unique challenges of IPV in rural areas.

References

1. Saltzman LE, Fanslow JL, McMahon PM, Shelley GA. *Intimate Partner Violence Surveillance: Uniform Definitions and Recommended Data Elements, Version 1.0*. Atlanta, Ga: National Center for Injury

- Prevention and Control, Centers for Disease Control and Prevention; 1999.
2. Coker AL, Davis KE, Arias I, et al. Physical and mental health effects of intimate partner violence for men and women. *Am J Prev Med*. 2002;23:260-268.
3. Coker AL, Smith PH, Bethea L, King MR, McKeown RE. Physical health consequences of physical and psychological intimate partner violence. *Arch Fam Med*. 2000;9:451-457.
4. Bonomi AE, Thompson RS, Anderson M, et al. Intimate partner violence and women's physical, mental, and social functioning. *Am J Prev Med*. 2006;30:458-466.
5. United States Department of Agriculture, Economic Research Service. *Rural Population and Migration: Trend 2—Nonmetro Population Growth Slows*. Available at: <http://www.ers.usda.gov/Briefing/Population/NonMetro.htm>. Accessed May 19, 2009.
6. Hamrick K. *Rural America at a Glance, 2003 Edition*. Rural Development Research Report (RDRR97-1), Economic Research Service, September 2003.
7. Bachman R, Saltzman LE. Violence against women: estimates from the redesigned National Crime Victimization Survey, special report. NCJ 154348, United States Department of Justice, Bureau of Justice Statistics, Aug 1995.
8. Murty SA, Peek-Asa C, Zwerling C, Stromquist AM, Burmeister LF, Merchant JA. Physical and emotional partner abuse reported by men and women in a rural community. *Am J Public Health*. 2003;93:1073-1075.
9. Peek-Asa C, Zwerling C, Young T, Stromquist AM, Burmeister LF, Merchant JA. A population based study of reporting patterns and characteristics of men who abuse their female partners. *Inj Prev*. 2005;11:180-185.
10. United States Department of Justice, Bureau of Justice Statistics. *Intimate partner violence in the United States*. Available at: <http://www.ojp.usdoj.gov/bjs/pub/pdf/ipvus.pdf>. Accessed February 10, 2008.
11. Bachman R. A comparison of annual incidence rates and contextual characteristics of intimate-partner violence against women from the National Crime Victimization Survey (NCVS) and the National Violence Against Women Survey (NVAWS). *Violence Against Women*. 2000;6:839-867.
12. Lohmann N, Lohmann RA. *Rural Social Work Practice*. New York: Columbia University Press; 2005.
13. Eberhardt MS, Ingram DD, Makuc DM, et al. *Urban and Rural Health Chartbook. Health, United States, 2001*. Hyattsville, Md: National Center for Health Statistics; 2001.
14. Merwin E, Hinton I, Dembling B, Stern S. Shortages of rural mental health professionals. *Arch Psychiatr Nurs*. 2003;17:42-51.
15. Merwin E, Snyder A, Katz E. Differential access to quality rural healthcare - Professional and policy challenges. *Fam Community Health*. 2006;29:186-194.
16. Elliot B, Johnson M. Domestic violence in a primary care setting: patterns and prevalence. *Arch Fam Med*. 1995;4:113-119.
17. Mueller KJ, MacKinney AC. Care across the continuum: access to health care services in rural America. *J Rural Health*. 2006;22(1):43-49.
18. Patterson PD. Emergency medical services and the federal government's evolving role: what rural and frontier emergency medical services advocates should know. *J Rural Health*. 2006;22(2):97-101.
19. Phillipson C, Allan GA. *Social Networks and Social Exclusion: Sociological and Policy Perspectives*. Aldershot, UK: Ashgate Publishing; 2004.
20. WK Kellogg Foundation. *Perceptions of Rural America: National State Legislator Survey*. November 2002.

21. Oughton E. Rural gender relations issues and case studies. *Eur Rev Agric Econ.* 2007;34(2):290-293.
22. Little J, Morris C. *Critical Studies in Rural Gender Issues.* Aldershot, UK: Ashgate Publishing; 2005.
23. Midgley J. Gendered economies: transferring private gender roles into the public realm through rural community development. *J Rural Stud.* 2006;22:217-231.
24. U.S. Census Bureau. Current Population Survey, Annual Social and Economic Survey. March Supplement, 2003.
25. Carson E, Chung D, Costello M. Exploring alternative pathways out of poverty: making connections between domestic violence and employment practices. *Aust J Soc Issues.* 2005;40:253-267.
26. Cunradi CB, Caetano R, Clark C, Schafer J. Neighborhood poverty as a predictor of intimate partner violence among white, black, and Hispanic couples in the United States: a multilevel analysis. *Ann Epidemiol.* 2000;10:297-308.
27. Benson ML, Fox GL. When violence hits home: how economics and neighborhood play a role. U.S. Research in Brief, Department of Justice, Office of Justice Programs, National Institute of Justice, September 2004.
28. Wathen CN, MacMillan HL. Interventions for violence against women - Scientific review. *JAMA.* 2003;289:589-600.
29. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System (BRFSS), Modules by Category. Available at: <http://apps.nccd.cdc.gov/BRFSSModules/ModByCat.asp?Yr=2005>. Accessed October 10, 2006.
30. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System (BRFSS), 2005 Summary Data Quality Report. Available at: http://www.cdc.gov/brfss/technical_infodata/quality.htm. Accessed December 5, 2006.
31. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System (BRFSS). Available at: www.cdc.gov/brfss. Accessed October 10, 2006.
32. United States Office of Management and Budget. Standards for Defining Metropolitan and Micropolitan Statistical Areas; Notice, 2000. Available at: <http://www.census.gov/population/www/estimates/00-32997.pdf>. Accessed August 8, 2007.
33. American Medical Association. *Health and Ethics Policy Number 515.965. Family and Intimate Partner Violence.* Chicago, Ill: American Medical Association; 2007:779. Available at: <http://www.ama-assn.org/ad-com/polfind/Hlth-Ethics.doc>. Accessed February 10, 2008.
34. American College of Obstetricians and Gynecologists. *Screening Tools-Domestic Violence.* Washington, DC: American College of Obstetricians and Gynecologists; 2008. Available at: http://www.acog.org/departments/dept_notice.cfm?reco=17&bulletin=585. Accessed February 10, 2008.
35. Breiding MJ, Black MC, Ryan GW. Chronic disease and health risk behaviors associated with intimate partner violence—18 U.S. states/territories. *Ann Epidemiol.* 2008;18:538-544.
36. Moore TM, Stuart GL. A review of the literature on masculinity and partner violence. *Psychol Men Masculinity.* 2005;6:46-61.
37. Lisak D, Hopper J, Song P. Factors in the cycle of violence: gender rigidity and emotional constriction. *J Trauma Stress.* 1996;9:721-743.
38. Basile KC, Arias I, Desai S, Thompson MP. The differential association of intimate partner physical, sexual, psychological, and stalking violence and post traumatic stress symptoms in a nationally representative sample of women. *J Trauma Stress.* 2004;17(5):413-421.
39. Mechanic MB, Uhlmansiefk MH, Weaver TL, Resick PA. The impact of severe stalking experienced by acutely battered women: an examination of violence, psychological symptoms and strategic responding. *Violence Vict.* 2000;15:443-458.
40. U.S. Census Bureau. Census 2000 Urban and Rural Classification. Available at: http://www.census.gov/geo/www/ua/ua_2k.html. Accessed July 18, 2008.
41. Johnson TP, Holbrook AL, Cho YI, Bossarte RM. Nonresponse error in injury-risk surveys. *Am J Prev Med.* 2006;31:427-436.