

INTIMATE PARTNER VIOLENCE AND ALCOHOL, DRUG, AND MENTAL DISORDERS AMONG AMERICAN INDIAN WOMEN FROM SOUTHWEST TRIBES IN PRIMARY CARE

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Abstract: The relationship of intimate partner violence (IPV) with mental disorders was investigated among 234 American Indian/Alaska Native female primary care patients. Results indicated that unadjusted prevalence ratios for severe physical or sexual abuse (relative to no IPV) were significant for anxiety, PTSD, mood, and any mental disorder. Adjusted prevalence ratios showed severe physical or sexual IPV to be associated with any mood disorder. Patterns of IPV and mental health have implications for detection and service utilization.

The annual economic victim-related costs of intimate partner violence (IPV) in the U.S. have been estimated at \$67 billion (Miller, Cohen, & Wiersema, 1996). These costs are associated with the severe and negative health and social consequences of violence to victims of IPV. These consequences include worse physical health, (Brokaw et al., 2002; Hathaway et al., 2000; Silverman, Raj, Mucci, & Hathaway, 2001) worse mental health, (Hien & Bukszpan, 1999; Roberts, Williams, Lawrence, & Raphael, 1998; Woods, 2000) and lower employment status (Browne, Salomon, & Bassuk, 1999; Bryne, Resnick, Kilpatrick, Best, & Saunders, 1999). For alcohol, drug, and mental health (ADM) outcomes specifically, IPV is associated with a variety of outcomes including phobias (Roberts et al.), depression (Hathaway et al.; Roberts et al.), dysthymia (Roberts et al.), anxiety (Hathaway et al.; Roberts et al.), substance dependence (Roberts et al.; Silverman et al.), somatization (Roberts et al.), suicidal ideation (Hathaway et al.; Silverman et al.), and PTSD (Hien & Bukszpan; Woods).

While the prevalence and consequences of IPV are well established in the research literature in general, there are certain limitations for American Indian/Alaska Native (AI/AN) populations. First, estimates for AI/ANs are based on limited research; thus, it is important for future research to provide more baseline information on the prevalence of different categories of IPV (e.g., different levels of severity and emotional abuse; Oetzel & Duran, 2004). Second, IPV is underreported in

primary care settings. A dramatic illustration of the difficulty of identifying IPV is evident at the Albuquerque Indian Hospital, the site of this study. In the entire history of hospital ambulatory and outpatient records, only 123 AI women (1.6%) have been identified as victims of domestic violence, and 58 of those women were identified as late as 1996 (Clark, 2001). These statistics strongly suggest that episodes of IPV experienced by AI/AN women are seriously underdetected and underreported in primary care settings. Third, while the ADM consequences of IPV are clear for the general population, there is limited research on AI/AN women. Further, the research tends to examine the impact of IPV in general (emphasizing the most physically violent behaviors)—not the different levels of severity (including emotional abuse)—on ADM disorders.

These limitations are significant for several reasons. First, primary care prevalence information is crucial for estimation of unmet need and for planning public health prevention and clinical services. The highest research priority in the area of AI/AN mental health is the need for estimations of illness (including IPV and ADM disorders), and for a better understanding of service utilization and help-seeking for these problems (Indian Health Service, 1995). In particular, health care providers need to have an understanding of the rates of IPV and ADM disorders to improve their detection and treatment of these problems. Second, data on violence and on mental illness risk and protective factors foster the development of culturally specific etiological hypotheses and treatment and prevention models (Jenkins, 2001). Cultural factors, such as meanings and orientations towards psychological distress, may contribute to the lower minority access to care as much as do economic factors (Wells, Klap, Koike, & Sherbourne, 2001). Finally, to address the racial disparity in disease and social problems, the lack of data on important social problems among communities of color must be addressed (United States Commission on Civil Rights, 2000; Wells et al.). Thus, the purpose of this study is to examine the relationship between the severity level of IPV and five different categories of ADM disorders (any anxiety, PTSD, any substance abuse, any mood, and any disorder) in AI/AN women from Southwest tribes (SW) presenting for primary care.

METHODS

Study Location and Sampling Design

The study was conducted at the outpatient appointment and urgent care clinics of the Indian Health Service (IHS) hospital in Albuquerque, New Mexico. The hospital is part of a regional IHS unit, which provides health care to five tribes and the urban AI population in the immediate area. The Albuquerque service unit records approximately 97,000 visits per year, 60% of them at the hospital site. Women were approached in the waiting area to determine their eligibility and were considered eligible if they were between 18-45 years of age, received their medical care from IHS

facilities, and were willing to sign the informed consent form. The women were fluent in English (a criterion for inclusion) and were given an incentive of \$20 per hour for their participation. The local IHS Unit Health Board approved this study, as did the Institutional Review Boards of both the University of New Mexico Health Sciences Center and the IHS National Research Office.

The study was designed as a two-stage procedure because of this method's efficacy in epidemiological studies (Miller, 1996). Stage I used the 12-item General Health Questionnaire (GHQ-12; Goldberg & Williams, 1988) as a screener for mental distress. The GHQ-12 assesses the severity of a mental problem over the past few weeks. Each item has a 4-point response scale; in this study, we used the scoring system of 0-0-1-1, as recommended by Goldberg and Williams. Scores ranged from 0-12, with high scores indicating worse health. The GHQ was chosen because of its high estimates of internal validity, its established validity in a number of countries, and its ease of use; and because it is the most common measure of mental well-being (Jackson, 2007). Subjects were stratified according to high (≥ 3) or low (≤ 2) GHQ scores. These numbers were selected to ensure adequate sample size in high and low groups and to provide dichotomous groups (i.e., not people in the middle); this approach follows prior research (Duran et al., 2004). A total of 489 eligible study subjects completed the GHQ, with 246 (50.3%) obtaining high scores and 243 (49.7%) obtaining low scores. Of the 246 women with high GHQ scores, 97% ($n = 238$) were selected for Stage II interviews, as were a random sample of 65% of those with low GHQ scores ($n = 158$). These percentages were chosen in order to have a sample size with adequate power. Of these 396 women selected for Stage II interviews, 162 either could not be located by information taken during Stage I or refused to participate in Stage II. It is known that the population is transient, and many of the women did not come back to care. Presumably, they returned to their home reservations for care, although we have no documentation to that effect. Stage II interviews were completed within four months of initial contact.

Measures

The interviews consisted of the University of Michigan version of the Composite International Diagnostic Interview (CIDI), the Revised Conflict Tactics Scale (CTS2), and demographics. The CIDI, developed jointly by the World Health Organization and the Substance Abuse and Mental Health Services Administration, is a clinical instrument that determines psychiatric (including alcohol and drug) diagnoses through interviews by lay interviewers. The validity of the instrument has been established in cross-cultural settings (Wittchen, 1994; Wittchen, Robins, Cottler, Sartorius, Burke, & Regier, 1991). The CIDI version used allows for case ascertainment based on the Diagnostic Statistical Manual IV (American Psychiatric Association, 2000; Mitchell, Beals, Novins, Spicer, & AI-SUPERPFP Team, 2003; Whitesell et al., 2006). Diagnoses were divided into five general

categories of past-year ADM disorders (any anxiety, PTSD, any substance abuse/dependence, any mood, and any disorder). For this study, we examined PTSD as a separate category from anxiety because of its relationship with IPV in prior research (e.g., DeJonghe, Bogat, Levendosky, & von Eye, 2008; Kaminer, Grimsrud, Myer, Stein, & Williams, 2008).

The CTS2 (Straus, 1979) was used to determine both the presence and dimensions of IPV. The CTS2 has operationalizations of minor and severe levels of conflict, is easily self-administered in populations with varying educational backgrounds, and takes only 10 minutes to complete. The CTS2 has been validated for U.S. minority populations (Kolbo, 1996; Malcoe, Duran, & Ficek, 2002).

Statistical Analyses

Log-Binomial models were used to estimate the prevalence ratios between IPV and each of the ADM categories. The SAS (Version 8.1) procedure GENMOD was used to accomplish this task. Prevalence ratios were estimated both on the univariate level (i.e., individual log-Binomial models were fitted with one of the independent variable or covariates at a time), and on the multivariate level (i.e., log-Binomial models were fitted with both the independent variable and the covariates at the same time). Therefore, both unadjusted and adjusted prevalence ratios were obtained. The “copy method” was used to obtain convergence of all multivariate models (Deddens, Peterson, & Lei, 2003).

A purposeful selection method was used to help select the final “best” models in the multivariate analyses. The following steps outline the specific model fitting procedures:

- 1) Preliminary bivariate analyses between demographics and IPV revealed a potential quadratic trend for age and the dependent variables and potential IPV*family history of alcohol and IPV*age interactions. Thus, these interaction terms were also included when fitting the multivariate models.
- 2) Univariate/unadjusted models for IPV, demographics, age², IPV*age, and IPV*family history of alcohol, respectively were analyzed.
- 3) A multivariate model included IPV and all covariates with *p* values less than .25, and used backward elimination to refine the model until the reduced model only contained variables significant at the .10 level (IPV was included regardless of *p* value).
- 4) Covariates that were significant at a .10 level and not originally selected were added back into the model one at a time.

RESULTS

Demographics and IPV Categorization

All participants were enrolled with a tribe, and over 90% were members of SW tribes. Approximately 61% were married or living in common-law relationships, and most (88%) lived in urban areas. More than one quarter (29%) of participants reporting income information lived below the federal poverty level, and only 33% lived above 185% of the poverty level. Table 1 displays the descriptive statistics for the variables included in this study.

Table 1
Demographics (N = 234)

	Frequency	Percent
IPV		
None	48	20.5
Any lifetime minor or severe psychological	84	35.9
Any lifetime severe	102	43.6
Employment		
Employed	151	64.5
Unemployed	44	18.8
Other	39	16.7
Debt		
None	65	27.8
Some	105	44.9
Very Much	62	26.5
Education		
< HS	25	10.7
HS	68	29.1
> HS	141	60.3
Family History of Alcohol Abuse		
No	71	30.3
Yes	163	69.7
Age	30.02 (M)	7.54 (SD)

Note: Any lifetime minor includes physical, sexual, or injury or severe psychological aggression.

Any lifetime severe includes physical, sexual, or injury

The primary independent variable was IPV exposure. Initially, IPV was coded as a five-category variable: (a) no physical/sexual/injury and no severe psychological; (b) minor physical/sexual/injury; (c) past-year severe physical/sexual/injury, (d) lifetime severe physical/sexual/injury, and (e) severe psychological but no severe physical/sexual/injury). Prevalence rates of each of the five dependent variables across these five categories of IPV were estimated (Table 2).

Table 2
Past-Year Prevalence Rates of Mental Disorders by IPV (N = 234)

IPV	Any Anxiety		PTSD			
	Freq (%)	95% CI	Freq (%)	Freq (%)	Freq (%)	Freq (%)
None	15(31.25)	(17.6,44.9)	2(4.17)			(0,10.0)
Minor	20(47.62)	(31.9,63.4)	4(9.52)			(0.3,18.8)
Past Sev	31(49.21)	(36.5,61.9)	16(25.40)			(14.3,36.4)
Life Sev	21(53.85)	(37.5,70.2)	8(20.51)			(7.3,33.8)
Sev Psy	19(45.24)	(29.5,60.9)	4(9.52)			(0.3,18.8)
Total	106(45.30)	(38.9,51.7)	34(14.53)			(10.0,19.1)

IPV	Any Substance Abuse		Any Mood		Any Disorder	
	Freq (%)	Freq (%)	Freq (%)	95% CI	Freq (%)	95% CI
None	6(12.50)	(2.8, 22.2)	5(10.42)	(1.5, 19.4)	18(37.50)	(23.3,51.7)
Minor	7(16.67)	(4.9,28.4)	9(21.43)	(8.5,34.4)	27(64.29)	(49.2,79.4)
Past Sev	13(20.63)	(10.4,30.9)	13(20.63)	(10.4,30.9)	46(73.02)	(61.7,84.3)
Life Sev	6(15.38)	(3.5,27.2)	12(30.77)	(15.6,45.9)	29(74.36)	(60.0,88.7)
Sev Psy	4(9.52)	(0.3,18.8)	5(11.90)	(1.7,22.1)	24(57.14)	(41.5,72.8)
Total	36(15.38)	(10.7,20.0)	44(18.80)	(13.8,23.8)	144(61.54)	(55.3,67.8)

Note: Minor = minor physical, sexual, or injury
 Past Sev = past-year severe physical, sexual, or injury
 Life Sev = lifetime severe physical, sexual, or injury
 Sev Psy = lifetime psychological aggression

These estimates and the preliminary analyses suggested that this five-category IPV variable should be collapsed into a three-category variable: (a) no physical/sexual/injury and no severe psychological; (b) severe psychological or minor physical/sexual/injury; and (c) severe physical/sexual/injury. The preliminary analyses suggested that there were not sufficient cell sizes warranted for the IPV prevalence ratio analysis controlling for the covariates. Additionally, the prevalence ratios suggested that severe psychological and minor physical/sexual/injury had similar relationships with the ADM disorders as did past-year and lifetime severe physical/sexual/injury.

Multivariate Models

Table 3 presents both the unadjusted and adjusted prevalence ratio estimates with 95% confidence intervals from the univariate and multivariate prevalence ratio analyses. For any anxiety disorder, lifetime severe IPV and a lot of debt had significant unadjusted prevalence ratios. Women experiencing severe IPV were 60% more likely to have an anxiety disorder than women who had

no experience with IPV. For the multivariate model, a lot of debt was significant, and there was also a significant IPV*family history of alcohol interaction. Women experiencing severe IPV with a family history of alcohol were almost 2.5 times more likely to have an anxiety disorder than women not experiencing IPV and a family history of alcohol. IPV did not have a relationship with anxiety disorder if there was no family history of alcohol.

Table 3
Prevalence Ratios of IPV and Covariates for ADM Disorders

	Any Anxiety PR (95% CI)		PTSD PR (95% CI)		Any Substance PR (95% CI)	
	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
IPV		<i>See IPV*FHALC</i>				<i>See Age*IPV</i>
None	1.00	<i>interaction</i>	1.00	1.00	1.00	<i>interaction</i>
Lifetime minor	1.49(0.92,2.40)		2.29(0.51,10.33)	1.66(0.37,7.44)	1.05(0.41,2.65)	
Lifetime severe	1.63(1.03,2.59)*		5.65(1.39,22.93)*	3.97(0.98,16.14)	1.49(0.64,3.49)	
Age	1.01(0.99,1.03)		1.03(0.99,1.07)		1.00(0.96,1.05)	<i>See Age*IPV</i>
Employment						
Employed	1.00		1.00		1.00	1.00
Unemployed	0.91(0.61,1.35)		0.62(0.23,1.71)	0.56(0.21,1.49)	0.41(0.13,1.30)	0.31(0.10,0.97)
Other	1.14(0.80,1.62)		1.41(0.68,2.92)	1.76(0.93,3.32)	1.24(0.61,2.53)	1.35(0.67,2.70)
Debt						
None	1.00	1.00	1.00	1.00	1.00	
Some	1.38(0.93,2.05)	1.33(0.90,1.96)	2.63(0.93,7.48)	2.56(0.93,7.07)	1.47(0.68,3.16)	
Very Much	1.62(1.08,2.44)*	1.55(1.04,2.32)*	3.15(1.07,9.23)*	3.09(1.10,8.74)*	1.05(0.42,2.62)	
Education						
< HS	1.16(0.79,1.71)		1.41(0.58,3.41)		1.99(0.87,4.56)	1.35(1.03,5.35)
HS	0.73(0.51,1.05)		0.93(0.45,1.94)		1.59(0.82,3.07)	2.05(1.06,3.95)
> HS	1.00		1.00		1.00	1.00
Family Hist of A		<i>See IPV*FHALC</i>				
No	1.00	<i>Interaction</i>	1.00	1.00	1.00	
Yes	1.16(0.84,1.60)		3.27(1.20,8.93)*	2.98(1.11,7.99)*	1.13(0.58,2.22)	
IPV*(FHALC=no)						
None		1.00				
Lifetime minor		1.00(0.53,1.91)				
Lifetime severe		0.89(0.44,1.81)				
IPV*(FHALC=yes)						
None		1.00				
Lifetime minor		2.16(0.95,4.92)				
Lifetime severe		2.43(1.09,5.43)*				
Age ²						
Age*(IPV=None)						
Age*(IPV=Life.minor)						0.84(0.73,0.97)
Age*(IPV=Life.severe)						0.95(0.86,1.06)

Table 3, Continued
Prevalence Ratios of IPV and Covariates for ADM Disorders

	Any Mood PR (95% CI)		Any Disorder PR (95% CI)	
	Unadjusted	Adjusted	Unadjusted	Adjusted
IPV				
None	1.00	1.00	1.00	Interaction
Lifetime Minor	1.49(0.92,2.40)	1.72(0.67,4.44)	1.62(1.08,2.42)*	See IPV*FHALC
Lifetime Severe	1.63(1.03,2.59)*	2.53(1.05,6.09)*	1.96(1.34,1.88)*	
Age	1.01(0.99,1.03)	0.72(0.55,0.95)	1.01(0.99,1.02)	
Employment				
Employed	1.00		1.00	
Unemployed	0.91(0.61,1.35)		0.99(0.76,1.29)	
Other	1.14(0.80,1.62)		0.95(0.71,1.27)	
Debt				
None	1.00		1.00	1.00
Some	1.38(0.93,2.05)		1.38(1.03,1.84)*	1.32(1.01,1.72)*
Very Much	1.62(1.08,2.44)		1.45(1.07,1.97)*	1.46(1.12,1.90)*
Education				
< HS	1.16(0.79,1.71)	1.33(0.66,2.68)	1.27(1.00,1.60)*	
HS	0.73(0.51,1.05)	0.34(0.15,0.77)	0.82(0.63,1.06)	
> HS	1.00	1.00	1.00	
Family Hist of A				
No	1.00		1.00	See IPV*FHALC
Yes	1.16(0.84,1.60)		1.22(0.95,1.55)	Interaction
IPV*(FHALC=no)				
None				1.00
Lifetime Minor				1.20(0.73,1.97)
Lifetime Severe				0.96(0.53,1.73)
IPV*(FHALC=yes)				
None				1.00
Lifetime Minor				2.31(1.12,4.74)*
Lifetime Severe				3.08(1.53,6.20)*
Age ²		1.00(1.00,1.01)		

Note: Any lifetime minor includes physical, sexual, or injury or severe psychological aggression

Any lifetime severe includes physical, sexual, or injury

FHALC = Family history of alcohol

* = $p < .05$

For PTSD, severe IPV, a lot of debt, and family history of alcohol all had significant unadjusted prevalence ratios. Women experiencing severe IPV were over five times more likely to have PTSD than women who had no experience with IPV. A lot of debt and family history of alcohol remained in the multivariate model, but severe IPV was not significant at the .05 level (although the prevalence ratio for severe IPV relative to no IPV was almost four).

For any substance abuse disorder, there were no significant unadjusted prevalence ratios for any of the variables. The multivariate model did include education; women with more than a high school education were less likely to experience a substance abuse disorder than either women with only a high school education or less than a high school education. In addition, there was a significant age² X IPV interaction. Specifically, the quadratic age term was significant for lifetime minor IPV relative to no IPV. However, this finding appears to be an artifact of the sample, as there were certain ages without any data. Thus, we have chosen not to further interpret this finding.

For any mood disorder, severe IPV and a lot of debt had significant unadjusted prevalence ratios. The multivariate model included only severe IPV. Specifically, women experiencing severe IPV were over 2.5 times more likely to have a mood disorder than women who had not experienced IPV.

For any disorder, severe IPV and a lot of or some debt had significant unadjusted prevalence ratios. For the multivariate model, a lot of or some debt was significant, and there was also a significant IPV*family history of alcohol interaction. Women experiencing severe IPV with a family history of alcohol were over three times more likely to have any disorder than women not experiencing IPV and a family history of alcohol. Additionally, women experiencing minor IPV or severe psychological aggression with a family history of alcohol were over two times more likely to have any disorder than women not experiencing IPV and without a family history of alcohol. IPV did not have a relationship with any disorder if there was not a family history of alcohol.

DISCUSSION

The univariate findings regarding severe IPV and ADM outcomes are largely consistent with research in other settings and populations (Hathaway et al., 2000; Hien & Bukszpan, 1999; Roberts et al., 1998; Silverman et al., 2001; Woods, 2000). Severe IPV has been associated with depression, anxiety, and PTSD in a variety of culturally diverse clinical and community samples.

One contradiction with prior research is the lack of a relationship of severe IPV to substance abuse in the current sample (Roberts et al., 1998; Silverman et al., 2001). To interpret this finding, it is important to put substance use (particularly alcohol) into context. Research on AI/AN drinking indicates that (a) alcohol consumption and abuse levels vary by tribe and over time (Beauvais, 1998; May, 1996; O'Connell et al., 2006; Whitesell et al., 2006), (b) alcohol consumption is higher in urban areas than on reservations (Beauvais; Costello, Farmer, Angold, Burns, & Erkanli, 1997; May), (c) women have high rates of alcohol abstention (Beauvais; Costello et al., 1997; May; O'Connell et al., 2006), and (d) alcohol consumption patterns are bimodal—there are large numbers of both abstainers and heavy binge drinkers in these populations (Beauvais; May; O'Connell et al.;

Whitesell et al.). The latter two points likely impact the relationship between IPV and substance abuse in that, as a cultural trend, there are significant numbers of women who do not use alcohol regardless of their traumatic experiences. Alternatively, substance use may be underreported in this sample, which further limits the likelihood of finding a relationship between IPV and substance abuse. Although the DSM-IV criterion for diagnosis of substance alcohol abuse may be problematic in AI/AN populations (May), it is plausible that the unreliability of recall as a measure of use may equally lead to underestimates of the prevalence of substance abuse. Finally, substance use is both a cause and a consequence of IPV (Anderson, 2002). This study only examined cross-sectional data; thus, the relationship between IPV and substance abuse may be diminished because this study cannot clearly identify the sequential pathway.

The multivariate findings suggest that IPV is only a factor for anxiety or any disorder in women with a family history of alcohol. One explanation is that both IPV and family history of alcohol are associated with anxiety disorders (Preuss, Schuckit, Smith, Barnow, & Danko, 2002; Schuckit et al., 2003). The combination of both factors places a “double impact” on the victim. However, for women without a family history of alcohol, other significant factors (i.e., debt) likely account for the experience of anxiety disorders.

Theoretically, our analyses recognize that, in general, family violence occurs within a broader context of social, economic, historic, and cultural factors. This recognition warrants adjustment for other variables, such as number of children, low educational level, parental substance abuse, poverty, early behavioral problems and marital disruption, that may contribute to negative outcomes (Dube et al., 2001; Horwitz, Widom, McLaughlin, & White, 2001; Kendler et al., 2000; Widom, 1999). Within an AI/AN context, adverse family experiences reach beyond immediate family characteristics and include exposure to misguided educational and child welfare policies, such as forced boarding school attendance and racist practices of child protective service agencies (Cross, Earle, & Simmons, 2000; Madrigal, 2001; Mannes, 1995).

Additionally, the univariate and multivariate findings suggest that minor IPV (severe psychological or minor physical/sexual) generally is not associated with ADM outcomes. Specifically, minor IPV was only associated with any disorder when there was a family history of alcohol. The lack of a relationship is contradictory to some research on other ethnic groups, such as White and Black women (Wagner, Mongan, Hamrick, & Hendrick, 1995). However, the findings are consistent with research showing that severe physical and sexual IPV has a stronger relationship with ADM disorders than psychological aggression. Consistent with this assertion, the findings of this study may reflect the fact that psychological aggression is a precursor to the development of physical aggression (Murphy & Hoover, 1999; Stith, Smith, Penn, Ward, & Tritt, 2004). The prevalence ratios generally reflected an increased pattern from minor IPV to severe IPV.

Implications

This study suggests the importance of improving identification of IPV in the primary care setting. Unfortunately, the identification rate of IPV in patients is poor in both mainstream and AI/AN populations. For example, one study found that physicians' files documented only 1% of possible cases in a population with an IPV prevalence of 30% (including physical and emotional violence; Martins, Holzappel, & Baker, 1992).

Lack of routine screening for IPV in primary care settings can result in the unintended consequence of continued IPV. Because of the confidentiality inherent in medical care, victims may feel more comfortable reporting their IPV experience here than in other settings. Unfortunately, there is often a breakdown in transmission of assistance (Little & Kaufman Kantor, 2002). Many health care providers are uncomfortable addressing IPV and do not feel that health care settings, including emergency rooms, are appropriate for such intervention (Ramsay Richardson, Carter, Davidson, & Feder, 2002). However, one study found that 43 to 85% of women (especially those who are IPV victims) believe that screening in health care settings is appropriate (Rosenberg & Fenley, 1991). Further, primary care identification and intervention efforts could reduce IPV incidence by 75% (Rosenberg & Fenley).

Ideally, health care providers would have a policy of routine screening to detect cases of IPV. Clark examined the screening rates of IHS facilities and found that facilities with policies and procedures related to domestic violence were more likely to screen than facilities without such policies (Clark, 2001). Having a domestic violence committee also increased the likelihood of screening. Additionally, health care providers need training on how to screen and talk about IPV with patients since, from the patient perspective, shame, fear of criminal justice involvement, and fear of more violence may prevent honest disclosure (Chester, Robin, Koll, Lopez, & Golden, 1994; Duran Duran, & Brave Heart, 1998).

Finally, we would be remiss if we did not acknowledge that programs servicing AI/AN populations are woefully underfunded. Annual per capita expenditures for AI/AN health care programs fall below the level for every other federal medical program and standard; the difference has been characterized by the United States Commission on Civil Rights (2004) as a "revolting disparity." On a systems level, our study documents unmet mental health service needs and supports the Commission's contention that there are multiple barriers to care that must first be overcome by an increase in funding. Without addressing these barriers, there is limited hope to increasing the identification and treatment of mental health outcomes associated with IPV.

Limitations and Conclusions

There are several limitations of this study. The first is that the CIDI, which is widely used for psychiatric studies, may be less accurate than structured diagnostic interviews conducted by culturally competent, licensed mental health professionals. This observation may be particularly true with regard to the applicability of the DSM-IV alcohol abuse and dependence criteria to the unique (high quantity, sporadic, binge frequency) drinking style of many AI/AN groups (May & Gossage, 2001). Second, data were collected at a single site from women 18-45 in primarily SW tribes, which limits the general applicability of these findings to other AI/AN populations. Third, this study used a cross-sectional design, which limits our ability to draw causal relations. Future research will have to determine the causal pathway for IPV and ADM disorders. Fourth, the sample of participants with PTSD was small; thus, firm conclusions about the relationship between IPV and PTSD cannot be drawn from these data. Finally, this study only examines women as victims of IPV. There is a growing literature examining the more complex nuances of violence among intimate partners (Frieze, 2005; Graham-Kevan & Archer, 2005; Richardson, 2005). Research suggesting that gender is a risk factor for IPV is limited because, generally, this research does not consider women as perpetrators and men as victims. Accordingly, there is limited research about AI/AN women as perpetrators of violence.

Despite these caveats, the findings illustrate that IPV is a common occurrence for AI/AN women presenting in primary care settings and has significant associations with ADM disorders. The study suggests the importance of developing procedures for identifying, reporting, and/or treating IPV and ADM disorders in primary care settings. The challenge will be training health care providers on these procedures, as IPV and ADM are historically underidentified and underreported.

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