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Risk Factors for Physical Assault and Rape Among Six Native American Tribes

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Prevalence and correlates of adult physical assault and rape in six Native American tribes are presented ($N = 1,368$). Among women, 45% reported being physically assaulted and 14% were raped since age 18 years. For men, figures were 36% and 2%, respectively. Demographic characteristics, adverse childhood experiences, adulthood alcohol dependence, and cultural and regional variables were assessed. Using logistic regression, predictors of physical assault among women were marital status, an alcoholic parent, childhood maltreatment, and lifetime alcohol dependence. Predictors of sexual assault among women were marital status, childhood maltreatment, and lifetime alcohol dependence. Among men, only childhood maltreatment and lifetime alcohol dependence predicted being physically assaulted. Tribal differences existed in rates of physical assault (both sexes) and rape (women only). The results underscore the problem of violence victimization among Native Americans and point to certain environmental features that increase risk of adulthood physical and sexual assault. Implications for tribe-specific interventions are discussed.

Keywords: *physical assault; rape; risk factors; Native Americans; American Indians*

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The National Violence Against Women Survey (NVAW; Tjaden & Thoennes, 2000) found that 33% of women and 45% of men reported being physically and/or sexually assaulted since age 18 years. As data on violence have become more available, it has become apparent that victimization rates are not consistent across all U.S. populations. Although socioeconomic disparities frequently contribute to racial differences, interpersonal violence has been widely recognized as a major public health concern for Native Americans. The NVAW Survey showed that American Indian and/or Alaska Native men and women reported higher rates of physical assault compared to White individuals (Tjaden & Thoennes, 2000). Of American Indian and/or Alaska Native women, 34% experienced being raped in their lifetime compared to 18% of White women. Similarly, crime victim data from 1992 to 2002 indicated that the annual average rates of aggravated and simple assaults among Native Americans were more than double those for the rest of the U.S. population (Perry, 2004). Native Americans were twice as likely to experience a rape or sexual assault compared to all other races. A recent study comparing two Native American communities with data from the National Comorbidity Survey found that men and women were more likely to have experienced physical attacks compared to the overall population (Manson, Beals, Klein, Croy, & the AI-SUPERPRFP Team, 2005).

Studies focusing solely on Native American samples have also documented high rates of victimization, including high rates of intimate partner violence. A study conducted with a southwestern tribe found that 42% of women and 36% of men experienced lifetime physical assault, including physical sexual abuse (Robin, Chester, Rasmussen, Jaranson, & Goldman, 1997). A sample of men and women from the same study reported high rates (75%) of lifetime physical intimate partner violence (Robin, Chester, & Rasmussen, 1998). Malcoe, Duran, and Montgomery (2004) conducted a study with 312 Native American women attending a clinic in southwest Oklahoma. Of these women, more than one half reported experiencing physical or sexual intimate partner violence in their lifetime, and 39% experienced severe physical partner violence. High rates of physical intimate violence have also been documented among San Carlos Apache Indians (Hamby, 1998).

Although these studies present a consistent picture of the problem of violence among Native American communities, many of them include methodological shortcomings. The national surveys consisted of small samples of Native Americans aggregated across tribes and used telephone and mail surveys to collect data from remote communities that lacked

addresses and had low telephone ownership. Studies with larger Native American samples were limited to one or two tribal communities. The current investigation presents a unique data set of violence victimization among six geographically diverse Native American tribes. The data were collected as part of the Ten Tribes Study, a collaboration of Native American Nations and Confederations, the University of Arizona, and the National Institute on Alcohol Abuse and Alcoholism (NIAAA). The study was designed to determine prevalence rates of alcoholism and investigate genetic and environmental vulnerability factors. The goals of the current study were: (a) to determine the prevalence rates of adulthood physical assault and rape among men and women across six tribes, (b) describe victim–perpetrator relationships, and (c) identify the contributions of demographic characteristics, adverse childhood experiences, lifetime alcohol dependence, and cultural and regional factors to risks of adult victimization.

Risk Factors Associated With Victimization

Although violence research with Native Americans is growing, there are limited empirical data on the multiple vulnerabilities experienced by this population. In contrast, studies with U.S. adults have identified several risk factors including, but not limited to, gender, age, race, income, past victimization, mental illness, substance abuse, and environmental characteristics (Kilpatrick & Acierno, 2003). In addition, separate risk factors for physical assault and rape have been documented for the general population (Acierno, Resnick, Kilpatrick, Saunders, & Best, 1999). The following section highlights the main findings with the general population and Native Americans, when available, regarding risk factors for adulthood victimization.

Demographic variables. The NVAW Survey found that women were more likely to experience sexual assault, whereas men were more likely to report physical assault (Tjaden & Thoennes, 1998). Additional characteristics commonly associated with assault among women include being separated or divorced (Bachman & Saltzman, 1995), having household incomes of less than U.S. \$10,000 (Bachman & Saltzman, 1995), residing in urban areas (O'Donnell, Smith, & Madison, 2002), and having an undergraduate degree (O'Donnell et al., 2002). Kilpatrick, Acierno, Resnick, Saunders, and Best (1997), however, did not document a significant association between education and being assaulted. Existing data with Native Americans point to similar demographic correlates. Fairchild, Fairchild, and Stoner (1998) found that age younger than 40 years and living in a household that

received governmental financial assistance were independently associated with current domestic violence among a sample of Navajo women. Another study showed that Native American women with a history of domestic violence were more likely to be separated or divorced and to report more problems with alcohol than women with no history of domestic abuse (Norton & Manson, 1995). For the U.S. and Native American populations, there is little empirical data on risk factors for men.

History of victimization. Vulnerability to being assaulted has also been linked to experiences of childhood abuse, a phenomenon referred to as revictimization. Sexual revictimization occurs when a survivor of childhood sexual abuse or rape is victimized again in adulthood (Messman & Long, 1996). In a meta-analysis, Roodman and Clum (2001) reported that 15% to 79% of female sexual abuse survivors were raped as adults, and the overall effect size for revictimization was moderate. Other types of revictimization have also been documented in the general population, including sexual abuse and physical assault (Desai, Arias, Thompson, & Basile, 2002) and physical abuse and sexual assault. We are aware of two studies that have been conducted with Native Americans. Bohn (2003) found that among 30 midwestern Native American women, all of the women that were abused as children were subsequently abused as adults. An investigation with Navajo Indians showed that childhood physical abuse, but not sexual abuse, was a significant risk factor for being a perpetrator and victim of physical intimate partner violence (Kunitz, Levy, McCloskey, & Gabriel, 1998).

Alcohol use. Alcohol use by victims has also been studied as a determinant for being assaulted. Two separate investigations showed that individuals with alcohol problems were approximately 1.5 times more likely to experience traumatic events than nonusers (Breslau, Davis, Andreski, & Peterson, 1991; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Using longitudinal data, Kilpatrick et al. (1997) found that drug use and combined drug and alcohol use, but not exclusive use of alcohol, significantly increased the odds of new assault in a national sample of women. The one study with Native Americans found that alcohol dependence was an independent risk factor for experiencing and perpetrating physical domestic violence among Navajo Indians (Kunitz et al., 1998). Given the high rates of alcohol dependence documented for Native Americans, including among the current sample (Koss et al., 2003), further research on the relationship between alcohol use and victimization is warranted.

Cultural factors. Specific to research with Native Americans, it is also necessary to identify culturally relevant risk factors. High rates of victimization may be associated with oppressive traumatic events and practices that contributed to losses of cultural affiliation (Perry, 2002). Historically, many Native American children experienced removal from homes and placements in boarding schools (Manson, Beals, Dick, & Duclos, 1989) or with adoptive or foster care families (Shore & Nicholls, 1975), disrupting the family structure and producing negative consequences. In a separate analysis of the Ten Tribes Study data, boarding school placement increased the likelihood of lifetime alcohol dependence among Native American women (Koss et al., 2003). Another predominant cultural risk factor is historical distress, also referred to as "historical trauma" (Whitbeck, Adams, Hoyt, & Chen, 2004). Historical trauma is described as unresolved grief resulting from traumatic changes in the spiritual, social, and economic structures of Native American communities (Duran, Duran, Woodis, & Woodis, 1998). Historical trauma is passed from one generation to another (Oetzel & Duran, 2004). A recent study found an association between historical loss and alcohol abuse (Whitbeck, Chen, Hoyt, & Adams, 2004). However, there are few empirical data on its association with violence victimization. Researchers also believe that European colonization may have taken away the traditional roles of Native American men, causing them to adapt a European model of control over intimate partners (Duran et al., 1998). Strict adherence to other traditional norms and values, such as male dominance and gender roles, however, might contribute to increased violence (Hamby, 2000; MacEachen, 2003).

On the other hand, cultural characteristics might protect Native Americans from perpetrating violence and suffering violence-related consequences. Walters and Simoni (2002) developed an indigenist stress-coping model that incorporates the buffering effects of cultural identity, enculturation, spiritual coping, and traditional health practices on health outcomes. A recent study with 452 Native American parents and/or caretakers found that enculturation or being embedded in Indian traditional culture has a protective effect against alcohol abuse (Whitbeck et al., 2004). Whether as risk or protective factors, cultural experiences might shed light on tribal variations in rates of interpersonal violence (Hamby, 2000).

Method

The current study used data from the Ten Tribes Study. Only seven tribes were assessed before funds were exhausted, and one tribe

declined to participate in the extended violence assessment portion of the interview.

Sample

Participating tribes were volunteers recruited through letters and personal contacts targeting large and geographically diverse tribes. Data collection began after negotiating memorandums of agreement with the individual tribal governments, obtaining clearance from the Office of Management and Budget for research on federal lands, and receiving approval from the Institutional Review Boards (IRBs) of the University of Arizona and the NIAAA, as well as tribal IRBs that existed when the current study was initiated. Face-to-face interviews were conducted from 1998 to 2001. Participants were randomly selected from tribal enrollment lists, voting registers, or health service registries. No single source of members was used because of variability in the completeness of the listings across the tribes. Executives from each tribe identified the most accurate and complete listing for recruitment. Recruitment included a letter of introduction, telephone contact, and a minimum of three home visits. The interviewers were Native Americans from same or different tribes, depending on the preferences of tribal executives, and were trained and supervised by the research team. Participants were compensated \$25.

Six tribes completed the comprehensive questionnaires on violence victimization. As part of the agreement established with the tribes, researchers promised to keep their identities confidential in all publications. Tribes 1, 5, and 6 were from the Southwest. Tribes 3, 4, and 7 were from the Northwest, Northern Plains, and Northeast, respectively. Four Indian Health Service (IHS) Areas were represented in the sample: Bemidji, Phoenix, Portland, and Nashville. Interviews for all of the tribes, except for Tribe 3, were conducted in rural areas. Tribe 3 interviews were conducted in rural, small urban, and large urban areas. All participants were living within or near tribal lands, as identified by federal and state jurisdictions respectively. A total of 1,374 respondents were interviewed. Six interviews were omitted from the analyses due to missing data.

Measures

The current study largely utilized standardized instruments with the exception of the cultural affiliation measure that was developed by the researchers. Prior to implementation, all interview questions were reviewed and deemed culturally appropriate by focus groups of each tribe, within the

constraint that the funders required that the majority of assessment be from reliable and valid established measures.

Physical and sexual violence. The current study defined *violence* as acts of physical assault and rape. Items were taken from the NVAW Survey (Tjaden & Thoennes, 1998) and adapted from a computer-assisted format to face-to-face administration. *Physical assault* was defined as behaviors that occurred since age 18 years, including being threatened and attempted or actually inflicted physical harm during adulthood (Tjaden & Thoennes, 1998). Twelve behaviorally specific acts were assessed separately: “throw something at you that could hurt you,” “push, grab, or shove you,” “pull your hair,” “slap or hit you,” “kick or bite you,” “choke or attempt to drown you,” “hit you with some object,” “beat you up,” “threaten you with a gun,” “threaten you with a knife or other weapon besides a gun,” “use a gun on you,” and “use a knife or other weapon on you besides a gun.” *Rape* was defined as experiences that occurred without the victim’s consent since age 18 years, involving actual or threatened physical force to penetrate the victim’s vagina or anus by penis, tongue, fingers, or object, or the victim’s mouth by penis, including attempts (Tjaden & Thoennes, 1998). Four items were used to assess completed rape. To limit the effects of language, behavioral definitions of sexual terms were provided. For example, respondents were asked, “Has a man or boy ever made you have sex by using force or threatening to harm you or someone close to you? Just so there is no mistake, by sex we mean putting his penis in your vagina.” To better understand the context of the assaults, victims were asked to identify their relationship with the perpetrator using four categories: male and female relatives, other known persons, romantic partners, and strangers.

Correlates of victimization. Demographic correlates included age, marital status, household income, and education level. Each variable had several parameters, adapted from Bachman and Saltzman (1995) for the purpose of study comparisons. The second set of risk factors included nine types of adverse childhood exposures prior to age 18 years. Parental alcoholism was measured using questions from the Alcohol Use Disorders and Associated Disabilities Interview Schedule (AUDADIS; Grant & Hasin, 1992). For example, participants were asked, “In your judgment, has your natural father been an alcoholic or problem drinker at any time in his life?” A behavioral definition of *alcoholic* and *problem drinker* was provided. Respondents were placed in one of three categories: no parental alcoholism, one or both parents with alcoholism, or unknown. Five types of childhood maltreatment were assessed using the Childhood Trauma Questionnaire (CTQ; Bernstein

et al., 1994), a 25-item questionnaire that assesses abuse and neglect before age 18 years. For instance, participants rated the statement "Someone in my family hit or beat me" on a 5-point scale from *never true* to *very often true*. Five summary scores were calculated: physical abuse, physical neglect, sexual abuse, emotional abuse, and emotional neglect. Further details about the scoring of the CTQ data is presented elsewhere (Koss et al., 2003). Three types of out-of-home placement were assessed: boarding school placement, foster care placement, and adoption. Assessment was limited to formal out-of-home placement experiences because of the increased likelihood of negative consequences and loss of cultural affiliation.

The third set of risk factors consisted of *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)* alcohol disorder diagnoses. Lifetime diagnoses of *DSM-IV* (American Psychiatric Association, 1994) alcohol abuse and dependence were obtained from the AUDADIS. Diagnoses of alcohol abuse required meeting one of four symptom criteria. Alcohol dependence required a minimum of three of seven symptoms within a 12-month period. The AUDADIS diagnoses have shown to be reliable (Grant, Harford, Dawson, Chou, & Pickering, 1995) and have been used extensively in alcohol studies in the general population.

The last set of risk factors consisted of cultural and regional characteristics and tribal community. Cultural characteristics were assessed using a questionnaire designed by the research team based on previous studies (Albaugh, 1991; Caetano, 1987). Tribal-specific content for several items was developed based on focus group interviews with each tribe. The 48-item questionnaire, referred to as the Cultural Stakes instrument, assessed different aspects of cultural affiliation. Factor analysis of the data yielded four factors consistent across all tribes: Language Value, Language Knowledge, Proximity to Tribal Lands, and Tribal Identity. The Language Value factor represented the importance of retention of traditional language (i.e., "How fluently can you speak the tribal language?"). The Language Knowledge factor was knowledge of the meaning of specific tribal words (i.e., "What does [tribal word] mean?"). The tribal words were identified by the focus groups as words that would be known if a person knew the tribal language. The Proximity to Tribal Lands factor represented the extent to which the individual and family members lived within or near tribal reservations, boundaries, or allotment area (i.e., "How much of your life have you spent within tribal boundaries or allotment area?"). The Tribal Identity factor was involvement in traditional beliefs and practices (i.e., "How often do you eat traditional foods such as [tribal-specific food]?"). Because the number of total items and content of specific items on the Cultural Stakes instrument varied by tribe,

item scores were converted to a common metric to allow comparisons across factors and tribes (e.g., scores on a 5-point scale were recoded as 0, .25, .50, .75, 1.00). Each factor score was computed as the sum of items divided by number of items. IHS Area were used to assess the effects of geographic region on rates of victimization. IHS Area was dummy coded by comparing each region to Nashville IHS Area, the area with the lowest homicide death rates in 1994-1996 (Indian Health Service [IHS], 1999). Tribal community was tested as a separate predictor to capture additional community effects.

Statistical Analysis

Data were analyzed using SPSS 11.0 for Windows software. Descriptive statistics were calculated on the demographic characteristics and victimization experiences. Using chi-square tests, group differences were determined by gender and tribe. Regression analyses were conducted with adulthood violence variables to approximate temporal relationships between risk factors and subsequent victimization. In separate analyses for men and women, logistic regression analysis was performed to investigate the relationships between risk factors and two types of adulthood victimization (physical assault and rape). Each risk factor was screened for a significant association with each type of assault, using bivariate logistic regression analyses. Subsequent multivariate, backstep logistic regression analyses were conducted with risk factors that were identified as significant correlates ($p < .05$) in the bivariate models. Due to a small sample of male sexual abuse victims, regression analyses were not conducted on sexual assault among men. Because of a significant association, the first set of multivariate regression analyses were controlled for tribal community. The final set of regression models directly examined the impact of tribal community as well as cultural factors and IHS Area on rates of victimization. The control variables included all significant demographic determinants (i.e., household income, marital status) except for tribal community. For all logistic regression analyses, alpha level of .05 was selected a priori.

Results

Sample Characteristics

Of the 1,368 participants, 42% were men and 58% were women.¹ The mean ages of men and women were 41 years (range = 20-78) and 40 years (range = 20-88). Less than one half of the sample (39%) were married.

Table 1
Percentages of Individuals Victimized Since Age 18 Years

Type of Victimization	Female (<i>n</i> = 793)	Male (<i>n</i> = 575)
Total rape	14	2***
Completed	14	1***
Attempted only	1	1
Total physical assault	45	36**
Threw something	28	22**
Pushed, grabbed, shoved	40	29**
Pulled hair	30	20**
Slapped, hit	35	28**
Kicked, bit	19	18**
Choked, tried to drown	14	5**
Hit with object	20	20**
Beat up	26	14**
Threatened with gun	9	12**
Threatened with knife	8	13**
Used gun	3	5**
Used knife	5	10**
Rape and/or physical assault	50	37***

Note: For physical assault estimates for males, sample size is 555.

** $p < .05$. *** $p < .001$.

Forty-two percent had a household income of less than \$15,000. Most of the participants (76%) were high school graduates. Majority of the sample (96%) reported living within tribal lands or boundaries. About one half (54%) reported at least some fluency in speaking their tribal language. Sixty-four percent reported at least some family involvement in cultural, religious, or spiritual activities.

Prevalence of Victimization

Women reported significantly higher rates of physical assault compared to men (45% vs. 36%; Table 1). For women that were assaulted, the most frequent type of physical assault was being slapped or hit (35%). For male victims, the most frequent type was being pushed, grabbed, or shoved (29%). Tribal differences in physical assault were significant for both sexes (Table 2).² Women also reported significantly higher rates of rape than men (14% vs. 2%). The most frequent type of rape was completed rape (women: 14%, men: 1%) compared to attempted rape (women: 1%, men: 1%). Tribal differences in rates of rape were significant among women, but not men.

Table 2
Percentages of Individuals Victimized Since Age 18 Years by Tribe

Type of Victimization	Tribe 1 (n = 298)		Tribe 3 (n = 276)		Tribe 4 (n = 297)		Tribe 5 (n = 99)		Tribe 6 (n = 99)		Tribe 7 (n = 299)	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Total rape	4	0	18	0	15	3	29	5	10	0	18***	2
Completed	4	0	17	0	15	1	25	2	10	0	17***	2
Attempted only	0	0	1	0	1	1	4	2	0	0	1	0
Total physical assault	27	7	52	55	53	39	64	67	65	49	38***	30***
Threw something	17	5	32	30	29	24	55	40	38	33	25***	20
Pushed, grabbed, shoved	20	5	44	41	48	32	61	44	59	42	35***	28
Pulled hair	16	3	35	28	32	22	43	47	49	27	26**	18
Slapped, hit	20	4	37	45	42	30	57	49	58	39	27***	24
Kicked, bit	12	3	22	23	20	18	34	42	20	24	17	17
Choked, tried to drown	7	2	16	9	15	4	18	5	26	3	14	4
Hit with object	13	4	21	27	19	22	43	44	26	30	16**	18
Beat up	16	4	26	20	31	16	45	33	42	18	20***	11
Threatened with gun	4	3	13	21	9	10	11	21	8	15	10	10
Threatened with knife	5	4	8	20	11	12	14	26	11	18	7	12
Used gun	2	1	2	5	2	8	5	7	5	6	5	6
Used knife	4	3	5	17	7	12	11	21	6	15	4	6
Rape and/or physical assault	27	7	54	55	58	40	71	67	67	49	49***	31***

***p < .05. **p < .001.

Victim–Perpetrator Relationship

For female victims of physical assault in adulthood, the most common perpetrator was a romantic partner (80%), followed by a female relative (21%), male relative (15%), other known person (11%), and stranger (8%). For male physical assault victims, the most frequently reported perpetrator was a romantic partner (61%), followed by a stranger (37%), other known person and male relative (36%), and female relative (18%). For female victims of sexual assault in lifetime, the most frequently reported perpetrator was a male relative (55%), followed by romantic partner (46%), other known person (29%), stranger (28%), and female relative (4%). For male sexual assault victims, the most common perpetrator was a male relative (45%), followed by a stranger (43%), other known person (40%), female relative (23%), and romantic partner (13%).

Relationships Between Risk Factors and Physical and Sexual Assault

The prevalence rates of adverse childhood exposures and lifetime diagnoses of alcohol disorders for the sample are presented elsewhere (Koss et al., 2003). In the multivariate models for women, lifetime diagnosis of alcohol dependence (odds ratio [OR] = 2.16, 95% Confidence Interval [95% CI] = 1.40-3.32; Table 3) and cohabitating (OR = 2.15, 95% CI = 1.22-3.78) were the strongest predictors of being physically assaulted. Other significant predictors included being separated or divorced, physical and sexual abuse, sexual abuse, and having a parent who was an alcoholic. Using multivariate models, the strongest predictor of sexual assault among women was being separated or divorced (OR = 2.53, 95% CI = 1.37-4.69; Table 4). Emotional abuse, cohabitating, sexual abuse, physical neglect, and lifetime diagnosis of alcohol dependence also met criteria for significance. The remaining correlates of risk did not achieve statistical significance. Among men, results of the multivariate analyses showed that emotional abuse (OR = 2.19, 95% CI = 1.35-3.55; Table 3) was the strongest predictor for adulthood physical victimization. Physical and sexual abuse and lifetime diagnosis of alcohol dependence were also significant correlates.

Cultural and Regional Influences

Men reported significantly higher mean scores on the Tribal Identity factor compared to women. Gender differences for the other three cultural factors

Table 3
Multiple Childhood Exposures and Adjusted Odds
Ratios of Physical Assault

Exposures	Female		Male	
	OR	95% CI	OR	95% CI
Age	—	—	ns	ns
Marital status				
Never married	.91	.61 - 1.37	ns	ns
Cohabiting	2.15	1.22 - 3.78	ns	ns
Separated or divorced	1.92	1.23 - 2.99	ns	ns
Widowed	1.27	.66 - 2.46	ns	ns
Household income	ns	ns	—	—
Lifetime alcohol dependence	2.16	1.40 - 3.32	2.05	1.34 - 3.12
Parental alcoholism	1.67	1.15 - 2.43	—	—
Childhood abuse				
Physical abuse	—	—	—	—
Physical neglect	—	—	—	—
Sexual abuse	1.80	1.15 - 2.84	—	—
Physical and sexual abuse	1.91	1.25 - 2.92	2.12	1.36 - 3.12
Emotional abuse	—	—	2.19	1.35 - 3.55
Emotional neglect	—	—	ns	ns

Note: OR = odds ratio; CI = confidence interval; *ns* = not significant at $p < .05$ and thus, not included in multivariate regression model. Dashes indicate that variable was removed from model using backward, stepwise regression analysis. OR adjusted for age and tribal community.

were not significant. There were significant tribal variations in the mean scores on all four cultural factors ($p < .001$; Table 5). Separate step-wise hierarchical logistic regressions by sex predicted the odds of victimization. The four steps were rationally derived. In Step 1, significant demographic predictors were entered in the model to control the influence of these variables on adulthood assault. In Step 2, cultural factors that were identified as significant predictors were entered in the model. IHS Area was entered in Step 3. Last, to further assess community influences on risk of assault not accounted by earlier cultural and regional determinants, tribal community was entered in Step 4.

In multivariate models for women, risk of being physically assaulted was significantly increased with Language Value (OR = 6.60, 95% CI = 1.40-31.09). IHS Area (Phoenix, Oklahoma, Portland) and tribal community also

Table 4
Multiple Childhood Exposures and Adjusted Odds Ratios of Sexual Assault Among Women

Exposures	OR	95% CI
Marital status		
Never married	1.61	.87 - 2.98
Cohabiting	2.42	1.16 - 5.05
Separated or divorced	2.53	1.37 - 4.69
Widowed	2.20	.86 - 5.62
Household income	—	—
Lifetime alcohol dependence	1.67	1.01 - 2.75
Parental alcoholism	—	—
Childhood abuse:		
Physical abuse	—	—
Physical neglect	2.03	1.23 - 3.35
Sexual abuse	2.35	1.41 - 3.93
Physical and sexual abuse	—	—
Emotional abuse	2.49	1.50 - 4.15
Emotional neglect	—	—
Out-of-home placement		
Foster care placement	—	—

Note: OR = odds ratio; CI = confidence interval. Dashes indicate that variable was removed from model using backward, stepwise regression analysis. OR adjusted for age and tribal community.

predicted increased likelihood of physical assault over and above Language Value. Among women, the likelihood of rape decreased with Proximity to Tribal Lands (OR = .012, 95% CI = .03-.66) and increased with Tribal Identity (OR = 27.40, 95% CI = 4.39-171.21). Tribal community, but not IHS Area, significantly increased the risk of experiencing rape over and above the cultural subscales. For men, risk of being physically assaulted decreased with Language Value (OR = .08, 95% CI = .01-.54). IHS Area (Oklahoma) and tribal community significantly increased risk over and above the cultural factors. Regression analyses for rape were not performed among men due to insufficient statistical power.

Discussion

Results showed that interpersonal violence is common among many Native American tribes. Across the six tribes, rates of physical assault

Table 5
Weighted Mean Scores and Standard Deviations of Cultural Factors by Tribe

Cultural Factor	Tribe 1 (<i>n</i> = 298)		Tribe 3 (<i>n</i> = 276)		Tribe 4 (<i>n</i> = 297)		Tribe 5 (<i>n</i> = 99)		Tribe 6 (<i>n</i> = 99)		Tribe 7 (<i>n</i> = 299)	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Language value	75 (14)	80 (13)	40 (6)	41 (9)	55 (8)	57 (9)	77 (12)	76 (13)	53 (13)	55 (12)	65 (12)*	83 (16)*
Language knowledge	82 (13)	93 (9)	49 (16)	50 (17)	88 (13)	83 (16)	89 (12)	89 (11)	66 (20)	62 (20)	92 (14)*	88 (15)*
Proximity to tribal lands	94 (10)	96 (11)	72 (16)	74 (18)	82 (10)	79 (11)	78 (14)	77 (14)	71 (13)	73 (12)	75 (13)*	77 (12)*
Tribal identity	58 (12)	59 (9)	56 (14)	58 (14)	59 (10)	62 (11)	62 (13)	69 (13)	67 (10)	71 (11)	71 (10)*	74 (10)*

Note: Standard deviations are in parentheses. Range for weighted mean scores is 0 to 100; 0 = low; 100 = high.
 **p* < .0001.

(45%) and rape (14%) for Native American women were higher than a non-statistical comparison to the NVAW findings for the general population (31% and 10%, respectively; Tjaden & Thoennes, 2000). For Native American men, rate of physical victimization (36%) was lower, whereas the rate of sexual assault (2%) was similar to those documented for the general population (45% and 1%, respectively).

The lower rate of physical violence among men, averaged across all tribes, was unanticipated. One possible explanation stems from potential ethnic differences in victim–perpetrator relationship. Tjaden and Thoennes (2000) reported that more than one half of the male victims (56%) were physically assaulted by a stranger compared to 37% of men in the current sample. The current lower rates of physical assault might partially reflect fewer opportunities for stranger-perpetrated violence among Native Americans living within tribal lands. It is important to highlight the significant tribal variability in rates of victimization documented in our sample, consisting of rates that were similar, higher, and lower than national estimates. High prevalence rates of physical assault and rape appear to characterize some, but not all, Native American communities.

Of the demographic determinants that were tested, only marital status significantly predicted physical assault and rape among women. Demographic characteristics were not significant determinants for male victims. Women who were in cohabitating relationships, separated, or divorced were at greatest risk of being assaulted in adulthood. These results are consistent with observations that Native Americans who were separated, widowed, or divorced were more likely to be exposed to trauma (Manson et al., 2005). They were also similar to findings documented for separated and divorced women among the general population (Bachman & Saltzman, 1995; O'Donnell et al., 2002). One explanation is that male perpetrators might view women who are separated, divorced, or widowed as more vulnerable targets compared to other women (O'Donnell et al., 2002). These women might be perceived as available targets for aggression due to the absence of male companions that would retaliate against a perpetrator. Some of these women might also have lifestyles that increase their exposure to high-violence environments, such as going out after dark and spending time in settings where alcohol is consumed. Another explanation is that some women are separated or divorced after ending abusive relationships (Schwartz, 1988). The increased vulnerability of Native American women in cohabitating relationships is consistent with research conducted by Brownridge and Halli (2000). The researchers found that a higher proportion of cohabitators reported violence compared to married individuals. Although not yet tested empirically, one

theory is that male cohabitators may have fewer resources (i.e., lower education, income, employment) than their female partners compared to married men. These men might have a tendency to use violence to maintain dominance and control in their relationships. It is also possible that certain characteristics of individuals that are less committed to their relationships might increase the likelihood of disagreements, conflict, and violence (Brownridge & Halli, 2000).

The phenomenon of revictimization, including sexual revictimization, was substantiated in the current sample of Native Americans. Multiple types of childhood maltreatment, including physical, sexual, and emotional abuse and physical neglect, contributed to increased risks of subsequent assault among men and women. In reviewing the revictimization literature, Messman-Moore and Long (2003) concluded that the underlying mechanisms are complex, consisting of not only victim vulnerabilities but also perpetrator behavior and societal and cultural factors. The perpetrators in the current study largely were known individuals in the home or community. Research on the role of tribal norms and values, including views on women and acceptability of physical and sexual aggression, on rates of interpersonal violence is needed. These factors have largely been overlooked in the violence literature and might serve as important targets for future interventions with Native Americans.

To address the concerns of participating tribes, the effects of out-of-home placement on adulthood victimization were examined. Our findings showed that, when other types of abuse and maltreatment were included in the model, boarding school placement, adoption, and foster care placement were no longer independent predictors of being assaulted in adulthood. It is possible that some individuals were sexually and/or physically abused in foster care and thus, this variable was confounded with other adverse childhood correlates. Overall, the results produce little insight on existing inconsistencies regarding the detrimental effects of boarding school placement among Native American children. Perhaps, out-of-home placement was related to other negative outcomes not assessed in the current study. It is also possible that the low rates of removal from home in our sample, especially of individuals who were adopted, prevented the detection of significant effects.

Lifetime alcohol dependence was a significant predictor of being physically assaulted among men and women, even when controlling for the effects of childhood maltreatment. Alcohol dependence was also a significant risk factor for sexual assault among women. This finding is contrary to a lack of an association documented among samples of the general population

(Kilpatrick et al., 1997). One explanation is the availability of alcohol on rural tribal lands and boundaries. Based on focus group data, we found that men from tribes that permitted alcohol sales in the vicinity of their communities were more likely to report being physically assaulted compared to other men. Women from such tribes were more likely to report being sexually assaulted than other women. Perhaps, tribes that permit alcohol sales are characterized by more tolerant views of violence and aggression and greater devaluation of women. The relationship between alcohol use and assault might also be explained, in part, by characteristic drinking patterns of many Native Americans. It is well known that several tribes primarily engage in patterns of sporadic, heavy drinking in social settings (May & Gossage, 2001). Binge drinkers might be at risk of greater physiological impairment, resulting in increased vulnerabilities to potentially dangerous and violent situations. Reasons for the different findings might also include the use of different methodologies to assess alcohol problems. For instance, Kilpatrick et al. (1997) assessed the broader category of alcohol abuse and excluded from analysis any drug users, whereas the current investigation assessed alcohol dependence and included individuals who may have used other substances in addition to alcohol.

The current findings on cultural factors are perplexing. Men that reported greater value in the retention of tribal language were less likely to be physically assaulted, whereas women that reported greater value in language retention had a greater chance of being physically assaulted. Women with higher tribal identity were at increased risk of being raped. However, women with more experiences living within or near tribal lands were less likely to be raped. Contrary to common belief, it appears that some aspects of cultural affiliation, but not others, might increase the chance of victimization among women. One explanation is that value in tribal language and tribal identity might provide a more accurate assessment of women's involvement with the community compared to physical proximity to tribal lands. It might be that greater involvement with a tightly knit Native American community increases the chance of victimization, given that the bulk of the crimes are committed by romantic partners and family members. However, the current study lacked temporal data; and thus, it is unknown if the women had stronger affiliations with their tribes before or after they were victimized. It is possible that one coping strategy for survivors is to seek empowerment and strengthen one's cultural identity. Given the lack of a standardized instrument of cultural affiliation, these findings remain tentative until further measurement and investigations are conducted.

One of the most intriguing findings of the current study was the significant tribal differences in rates of adulthood physical assault and rape. The

results might be influenced, in part, by tribal variability in the identified correlates documented by Koss et al. (2003). The broad range of physical assault rates across tribes might also reflect regional differences. IHS Area regional differences have been documented for homicide rates, a form of severe interpersonal violence (IHS, 1999). Similar to high rates of homicide, the Phoenix IHS Area had high rates of physical assault among women. In contrast to low or equivalent rates of homicide, the Oklahoma IHS Area had high rates of physical assault and combined physical and sexual victimization among women. It is important to note, however, that the tribes in the current study represented only a sample of those tribes served by the different IHS Areas. More important, the comparison is made between self-reports and official records. The results may point to differences in the completeness with which different regional offices and respective tribes collect crime statistics.

Given that tribal community was a significant predictor for adulthood victimization over and above the cultural factors, additional community risk factors that were not assessed in the current study might have had significant effects. For instance, tribal variability in tribal codes, policies, and services for perpetrators and victims of violence might have influenced the current findings. Differences in perceived levels of confidentiality in the tribal communities and rates of reporting and utilization of community resources might also have existed (Villanueva, 2003). Such factors might have contributed to varying experiences of isolation and helplessness among victims (Wahab & Olson, 2004) and of regret and responsibility among perpetrators, resulting in different levels of vulnerability for repeated perpetration and victimization across the tribes.

The current study should be interpreted in light of several limitations. First, the prevalence rates might have been underestimated due to reporting bias and that bias might have varied by tribe. Participants might have adapted their responses because of shame and guilt, concerns about confidentiality, and limited anonymity with the face-to-face interviews. Tribes who used their own tribal members as opposed to Native Americans from other tribes reported significantly lower rates of physical and sexual assault. This approach might have had particularly salient effects on the low prevalence rates reported by Tribe 1 participants. In general, the use of in-person interviews was a strength of the current investigation because it allowed participation of Native Americans that might have lacked access to telephone or postal services. Second, because cross-sectional assessment was used, it was beyond the scope of the study to identify cause-effect relationships. To date, few longitudinal studies have been conducted with the Native American

population; however, such designs are necessary to fully examine the impact of risk factors on subsequent assaults in adulthood. To address this limitation, only variables clearly limited to childhood or adulthood were used in the regression analyses. At the time the Ten Tribes Study was implemented, there were few existing measurements for Native American acculturation and specific cultural experiences. Thus, the current study lacked a comprehensive assessment of cultural determinants and did not include an in-depth measurement of historical trauma in the structured interview. The Cultural Stakes instrument, however, was developed based on input from each tribe and used a multidimensional approach for assessing cultural affiliation similar to that used in recent investigations on Native American cultural identity (e.g., Coe et al., 2004).

Identification of risk factors contributes to our ability to forewarn individuals of high-risk situations and implement interventions that might lower the likelihood of experiencing subsequent assaults (O'Donnell et al., 2002). The current findings emphasize the need to target prevention materials and resources and community services, including domestic shelters, to specific groups of Native American women. In particular, efforts should be focused on women that are separated, divorced, or who are in cohabitating relationships. Interventions directed toward men are also critical, including those that focus on gender-role definitions, the negative effects of colonialism, and traditions that discourage male violence.

There are several potential opportunities for altering high-risk circumstances in Native American communities. One strategy is to improve the practice of screening for childhood abuse and domestic violence in hospitals and clinics (Bohn, 2003). To foster routine screening, it is important to establish policies and procedures for handling reports of violence. In a national survey of IHS facilities, Clark (2001) found that violence screening was most likely to occur in settings with established policies and procedures. Our results suggest that intervention programs need to cater to children and adult survivors of childhood abuse, separately. For children, programs might incorporate experiences with positive role models and healthy environments, especially if parental drinking and violence are occurring in the home. For adult survivors of abuse, programs might focus on reducing high-risk behaviors, increasing personal safety, and fostering healthy attitudes and expectations of gender roles and intimate relationships. Given the potential relationship between alcohol and violence among Native Americans, intervention programs might also want to focus on interrupting the assault-alcohol abuse cycle. Programs for assault victims might include strategies to reduce the development and exacerbation of substance abuse, whereas

programs for individuals with substance abuse problems might incorporate strategies to reduce the likelihood of future victimizations (Kilpatrick et al., 1997).

Researchers in the area are currently advocating for public health models involving individual-level and population-level strategies, suggesting that they hold the greatest promise for preventing violence (DeBruyn, Chino, Serna, & Fullerton-Gleason, 2001). Because cultural risk factors were identified and rates of victimization varied across multiple tribes, it is important to adapt this paradigm to include tribal-level strategies when working with the Native American population. This point was recently raised by Henderson, Jacobsen, Beals, and the AI-SUPERPPF Team (2005). Based on their findings of tribal differences in correlates and smoking patterns, they suggested that each tribe's unique characteristics should be incorporated in the design and implementation of culturally appropriate interventions in Native American communities. Although there has been an increase in the development of culturally appropriate victim services, many more programs need to consider unique tribal practices, ceremonies, histories, languages, values, and norms (Wahab & Olson, 2004). In addition, tribal-level strategies should not be restricted to therapeutic services. In light of a recent application of a social ecological framework with Native American communities (Oetzel & Duran, 2004), incorporating tribal-specific approaches at organization, community, and policy levels might help us achieve the breadth of interventions necessary to reduce interpersonal violence among Native American tribes.

Notes

1. Because of page limitations, table of demographic characteristics by tribe is not presented. Table is available from the authors.

2. The low prevalence rates of adulthood victimization documented for Tribe 1 were surprising. One possible explanation was that Tribe 1 was characterized by social unrest and political fighting among tribal members at the time of data collection. Participants might have been distracted by tribal events, resulting in politicization of the research, which by necessity was associated with the standing tribal government. Given the lower rates of interpersonal violence among members of Tribe 1, we tested the multivariate regression models without Tribe 1 data and found the general pattern of associations between demographic characteristics, childhood maltreatment, alcohol dependence, and cultural factors and adulthood victimization to be similar. Among the 21 predictors that were tested, four variables no longer achieved statistical significance, whereas two others reached significance. There was no indication, however, that the reported cases of victimization by Tribe 1 were not valid. Thus, analyses with data from all six tribes provided the best approximation of the risk factors associated with physical assault and rape among Native Americans.

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