Is a history of trauma associated with a reduced likelihood of cervical cancer screening?

MELISSA FARLEY, PHD, JACQUELINE M. GOLDING, PHD, AND JEROME R. MINKOFF, MD
Oakland, Santa Rosa, and San Francisco, California

KEY POINTS FOR CLINICIANS

- Women who had not had recommended cervical cancer screening were more likely to have been sexually abused in childhood.
- Women who were sexually abused in childhood may be at higher risk than other women for HPV and cervical cancer; therefore, screening is particularly important for these women.
- Not having cervical cancer screening may be a marker for childhood sexual abuse. Therefore, health care providers should consider investigating these issues with women who do not adhere to guidelines for routine Pap smears.

■ OBJECTIVE We tested the hypothesis that a history of trauma (especially sexual trauma) was associated with a reduced likelihood of having had medically appropriate cervical cancer screening.

■ STUDY DESIGN A case-control study using mailed self-report questionnaires.

■ POPULATION The questionnaires were completed by an age-stratified random sample of adult women members of a large health maintenance organization. The sample included 364 women who had received medically appropriate cervical cancer screening and 372 who had not.

■ OUTCOMES MEASURED We defined cases as women who, according to their medical record, had not had cervical cancer screening within 2 years before the study. Controls were defined as women who had been screened. We evaluated exposures to trauma that we hypothesized to be associated with the case/control state.

■ RESULTS Women who had been sexually abused in childhood were less likely to have had a Pap smear within the past 2 years (36.0% vs. 50.4%, P = .050). Other traumatic events were associated with Pap testing in bivariate analyses but not when demographic characteristics and clinic location were controlled. Childhood sexual abuse remained associated with reduced odds of Pap screening in logistic regression analyses that controlled for clinic location, demographics, attitudes about Pap screening, and posttraumatic stress disorder symptoms (adjusted OR = 0.56, 95% CI 0.34 to 0.91).

■ CONCLUSIONS These findings suggest that childhood sexual abuse may lead to decreased probability of screening for cervical cancer, potentially contributing to the poorer health seen in other studies of women who have been sexually abused.

■ KEY WORDS Child abuse, sexual; rape; mass screening; vaginal smears. *(J Fam Pract 2002; 51:827–831)*

Unfortunately, 15% to 24% of US women do not receive recommended cervical cancer screening.[1–3] Barriers to Pap screening include low income, low education, minority status;[4] lack of cancer knowledge, attitudes, beliefs, low perceived cancer susceptibility, pain, embarrassment;[5–7] language, and certain cultural beliefs.[7–9] Sexual trauma has received little research attention as a factor contributing to lowered rates of Pap screening. Sexual trauma is reliably associated with subsequent poor health, which may be partially accounted for by poor preventive care.[10–16] Childhood sexual abuse is strongly associated with negative health behaviors such as physical inactivity and smoking.[13,17] Sexual violence is associated with lower rates of breast cancer screening[18] and increased risk of posttraumatic stress disorder

From the Kaiser Foundation Research Institute, Oakland, California, and the Prostitution Research and Education, San Francisco Women's Centers, Inc., San Francisco, California (M.F); Institute for Health & Aging, University of California, San Francisco (J.M.G.); Kaiser Permanente Family Medicine Services, Division of Endocrinology, Santa Rosa, California, and the Department of Family and Community Medicine, University of California, San Francisco (J.R.M.). This project was sponsored by the Direct Community Benefit Investment Program, Kaiser Foundation Hospitals California Division, and the Kaiser Foundation Research Institute. An earlier version of this paper was presented at the 109th annual meeting of the American Psychological Association, San Francisco, August 25, 2001. Please address requests for reprints to Jerome R. Minkoff, MD, at Kaiser Permanente, Family Medicine Services, Division of Endocrinology, 401 Bicentennial Way, Santa Rosa, CA 95403. Email: Jerry.Minkoff@kp.org

(PTSD).[19–21] Avoidant coping styles (an aspect of PTSD) are associated with decreased health promotion behaviors such as screening.[22–25]

Gynecologic procedures may feel threatening to women with a history of sexual assault, and may be experienced as re-traumatizing.[14,26–29] Women who had suffered childhood sexual abuse reported more anxiety, shame, and fear during a gynecologic examination than other women.[28] Springs and Friedrich[16] found a lower frequency of screening for cervical cancer among adult survivors of childhood sexual abuse, but did not assess the impact of other traumatic events in childhood or adulthood on Pap screening. Because previous research on correlates of sexual trauma has been criticized on the grounds that third variables could account for the observed associations,[30] we evaluated associations of any traumatic event with low rates of Pap screening.

We hypothesized that having experienced traumatic events, in particular childhood sexual trauma, would function as barriers to Pap screening. We predicted that women who had not had medically appropriate Pap screening would report a greater number of traumatic events, especially sexual abuse trauma in this ethnically diverse random sample of women. We also expected that sexually traumatized women would express more negative attitudes toward Pap screening, and would be more likely to meet criteria for PTSD, both of which might contribute to lower levels of Pap screening.

TABLE 1

Demographic characteristics of women with and without Pap screening

	No Pap (%) n = 372[a]	Pap (%) n = 364[a]	*P*
Ethnicity			.001
African American	10.1	11.6	
Asian American	20.1	8.0	
European American	60.6	71.8	
Other	9.2	8.6	
Age			.076
Mean	43.8 (12.8)	45.5 (12.4)	
(standard deviation)			
Education			.187
Elementary school	2.7	1.4	
High school	39.6	34.8	
College	41.5	43.2	
Post-college	16.9	20.6	
Family income			.002
$20,000/year or less	12.4	5.8	
$20,001–$50,000	41.3	38.2	
More than $50,000	46.2	56.0	
Marital status			.012
Never married	34.3	24.8	
Married	47.0	59.1	
Separated	1.6	0.6	
Divorced	13.8	13.1	
Widowed	3.2	2.5	

[a]Sample sizes vary slightly because of missing data on individual demographic items.

METHODS

Kaiser Permanente (KP), a pre-paid maintenance organization, offers cervical cancer screening at no cost to patients. KP's clinical guidelines recommend Pap screening every 2 years for women over age 20 with average risk for cervical cancer. Self-report questionnaires were mailed to an age-stratified random sample of women 21–64 years old who were KP members at 3 locations. Women who had had a total hysterectomy were excluded. We compared women who had and who had not obtained Pap screening in the previous 2 years. In previous research[18] we found that women who had not obtained mammography had a lower response rate to mailed questionnaires than women who had been screened. We therefore oversampled women who had not had Pap screening. We mailed questionnaires to 1314 women who had obtained Pap screening and 2897 who had not. The final sample included 364 women who had received screening in the past two years (28% response rate) and 372 who had not (13% response rate). Repeated sampling or telephoning of non-respondents was not allowed by KP policy.

Trauma history was measured in 2 ways. The Trauma History Questionnaire[31,32] assesses a range of lifetime traumatic events. The Childhood Trauma Questionnaire[33] assesses childhood physical abuse, physical neglect, sexual abuse, emotional abuse, and emotional neglect. PTSD was assessed with the Posttraumatic Stress Disorder Checklist.[34] We inquired about attitudes toward Pap screening based on previous findings.

Data were analyzed using SAS.[35] Contingency tables were analyzed to estimate the prevalence of traumatic events and their bivariate associations with Pap screening. Chi square analysis was used to evaluate the statistical significance of these associations. Hierarchical logistic regression was used to evaluate associations of traumatic events with screening, independent of clinic location, demographic characteristics, attitudes about screening, and PTSD.

RESULTS

Sample demographics

Women who had been screened for cervical cancer and unscreened women were similar in age

and education (Table 1). Unscreened women were more likely to be Asian American, to have incomes of $20,000 per year or less, and to have never been married.

Prevalence of trauma

Commonly reported events during childhood included natural disaster (reported by 13% of the women), sexual assault other than rape (11%), and news of a death or injury (10%). Childhood sexual abuse or sexual assault was reported by 18.4% of the respondents. The most common traumas in adulthood were receiving news of a death or serious injury (46%), natural disasters (33%), actual or attempted robbery (27%), and serious accidents (14%). Of the respondents, 8.3% reported sexual abuse or sexual assault in adulthood. Their overall rate of childhood and adult sexual assault was 26.7%.

Associations of trauma history with pap screening

We investigated the association of trauma with screening using chi square analyses. Women who had been raped before age 18 (36% vs. 50%, n = 713, $P = .050$) and women who had been subjected to other sexual assaults before age 18 (35% vs. 51%, n = 694, $P = .009$) were less likely to have been screened. Nonsexual childhood abuse and neglect were not related to screening. Women who experienced a natural disaster during childhood (36% vs. 52%, n = 571, $P = .009$) and those who experienced terrorist acts during adulthood (20% vs. 49%, n = 715, $P = .024$) were less likely to have been screened. (Although the association with a terrorist act was significant, exposures were reported by only 3% of unscreened women and 0.9% of screened women.) Women who reported a household break-in during adulthood were slightly more likely to have been screened (53% vs. 47%, n = 656, $P = .032$).

In a hierarchical logistic regression model (Table 2), childhood sexual abuse, but not other traumatic events, was associated with lower odds of screening when clinic location, demographic characteristics, attitudes, and PTSD were controlled. The logistic regression model was repeated using CTQ subscales to assess trauma, with similar results. Unmarried women were less likely than currently married women to have been screened, and Latina, Native American, Asian/Pacific, or multicultural women were less likely than European American women to have been screened. Women who endorsed the statement, "I have no symptoms so I do not need a Pap test" and those who anticipated embarrassment during screening were less likely than others to have been screened; women who believed that testing would ease their mind were more likely to have been screened.

TABLE 2

Hierarchical logistic regression model of sexual trauma and attitudes as predictors of pap screening

Predictor	Adjusted odds ratio (95% CI)
Traumatic events	
Break-in (adult)	1.14 (0.77, 1.70)
Natural disaster (child)	0.78 (0.45, 1.38)
Terrorist act (adult)	0.28 (0.07, 1.07)
Childhood sexual trauma	0.56 (0.34, 0.91) *
Site	
Santa Rosa	0.68 (0.44, 1.04)
San Francisco	1.0 (referent)
Oakland	1.27 (0.80, 2.02)
Education	
Less than college	1.09 (0.71, 1.69)
College	1.0 (referent)
More than college	1.01 (0.65, 1.57)
Ethnicity	
European-American	1.0 (referent)
African American	0.59 (0.33, 1.06)
Other than African American or European American	0.46 (0.29, 0.71) **
Unmarried (compared with married)	0.67 (0.48, 0.94) *
Attitudes toward Pap screening	
"I have no symptoms so I do not need a Pap test"	0.66 (0.51, 0.85) **
"I've had negative experiences with my health care provider"	0.90 (0.73, 1.10)
"Getting a Pap test would ease my mind"	1.54 (1.25, 1.89) ***
"There is danger of infection from a Pap test"	1.09 (0.83, 1.43)
"I do not trust the health care system"	1.06 (0.81, 1.39)
"I would be embarrassed to have a Pap test"	0.67 (0.52, 0.84) ***
"Women who have many sexual partners are more likely to have cervical cancer"	0.88 (0.73, 1.06)
"Pap would cause sexual assault flashbacks, or health care provider looks at me in a sexual way"	1.05 (0.77, 1.45)
PTSD diagnosis	1.62 (0.91, 2.90)
Missing data	0.96 (0.80, 1.13)

*$P < .05$; **$P < .01$; ***$P \leq .001$

DISCUSSION

Childhood sexual abuse is reliably associated with a decreased likelihood of cervical cancer screening. This association persisted despite controlling for demographic characteristics, attitudes about Pap

screening, and PTSD symptoms. These findings are strengthened by the consistency with which childhood sexual abuse is associated with low rates of Pap screening using 2 measures of trauma in 3 clinics. Although cost has been a major barrier to access in previous studies of cervical cancer screening, it is not a barrier for women who are members of a pre-paid health plan. It was therefore possible for us to investigate known and suspected barriers to cervical cancer screening with fewer confounding co-variables.

This study clarifies the role of childhood sexual assault in Pap screening. Sexual assault, but not other traumatic events or other types of childhood abuse, is associated with lower rates of cervical cancer screening. Furthermore, sexual assault during childhood, but not during adulthood, is strongly associated with decreased Pap screening.

The relationship between childhood sexual abuse and Pap screening is particularly disturbing because women who were sexually assaulted as children are more likely to develop cervical dysplasia.[36] Women who were sexually assaulted in childhood also tend to begin sexual activity at a young age and have more sexual partners.[15,16,36] These are among the primary risk factors for human papillomavirus (HPV),[37] an important cause of cervical cancer,[38,39] and for cervical cancer.[7] Women who were sexually abused in childhood are at increased risk of sexually transmitted disease,[15,40] and HPV is the most common sexually transmitted viral disease.[38] Therefore, women at higher risk for cervical cancer may be the same women who are least likely to be screened. Childhood sexual abuse may increase cervical cancer morbidity by reducing the probability of Pap screening, and by increasing the probability of disease. It may also decrease the likelihood that these women visit their physician for other routine health maintenance needs.

The low response rate in this study may have resulted from the questionnaire's being sent to KP members once, without follow-up. Our response rate was comparable to a similar study of HMO members.[16] Use of a mailed questionnaire probably resulted in underestimation of childhood sexual abuse prevalence.[41] The relationship of sexual abuse to preventive health behaviors is comparable to that reported in studies with higher response rates.[13,17]

There is some evidence that the interpersonal climate between patient and clinician affects health outcomes,[42] and we suspect it is a critical factor in increasing women's comfort with Pap screening. One of our respondents commented: "I've always been treated professionally by my gynecologist and yet I still feel the need for the reassuring presence of a nurse during this procedure. I have asked the nurse to hold my hand during the test to calm me down. I find the hand holding or even her hand on my arm comforting."

The most consistent predictor of cancer screening among women aged 40 and over was a health maintenance visit or regular source of care.[43,44] Not having cervical cancer screening may be a marker for childhood sexual abuse. Therefore, health care providers should consider inquiring about a history of sexual abuse with women who do not follow guidelines for routine Pap screening. It is crucial to develop interventions that will lead to routine medical visits for women who have experienced sexual violence. As part of this process, we recommend education for physicians and other health care providers regarding sexual violence against women.

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CORRECTIONS

On page 743 of the September issue, the Clinical Inquiry, "What are effective treatments for panic disorder?" was authored solely by Alicia M. Weissman, MD. The editors regret that a co-author's name mistakenly appeared.