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Prevalence and Patterns of Gender-based Violence and Revictimization among Women Attending Antenatal Clinics in Soweto, South Africa

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Kristin L. Dunkle[1], Rachel K. Jewkes[2], Heather C. Brown[3], Mieko Yoshihama[4], Glenda E. Gray[5], James A. McIntyre[5], and Siobán D. Harlow[1]

[1] Department of Epidemiology, School of Public Health, University of Michigan, Ann Arbor, MI.
[2] Gender and Health Group, Medical Research Council of South Africa, Pretoria, Gauteng, South Africa.
[3] Reproductive Health Research Unit, University of the Witswatersrand, Johannesburg, Gauteng, South Africa.
[4] School of Social Work, University of Michigan, Ann Arbor, MI.
[5] Perinatal HIV Research Unit, University of the Witwatersrand, Johannesburg, Gauteng, South Africa.

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Gender-based violence is a key health risk for women globally and in South Africa. The authors analyzed data from 1,395 interviews with women attending antenatal clinics in Soweto, South Africa, between November 2001 and April 2002 to estimate the prevalence of physical/sexual partner violence (55.5%), adult sexual assault by nonpartners (7.9%), child sexual assault (8.0%), and forced first intercourse (7.3%). Age at first experience of each type of violence was modeled by the Kaplan-Meier method, and Cox hazard models with time-varying covariates were used to explore whether child sexual assault and forced first intercourse were associated with risk of violent revictimization in adulthood. Child sexual assault was associated with increased risk of physical and/or sexual partner violence (risk ratio = 2.43, 95% confidence interval: 1.93, 3.06) and with adult sexual assault by a nonpartner (risk ratio = 2.33, 95% confidence interval: 1.40, 3.89). Forced first intercourse was associated with increased risk of physical and/or sexual partner violence (risk ratio = 2.64, 95% confidence interval: 2.07, 3.38) and nonsignificantly with adult sexual assault by a nonpartner (risk ratio = 2.14, 95% confidence interval: 0.92, 4.98). This study confirms the need for increased attention by the public health community to primary and secondary prevention of gender-based violence, with a specific need to reduce risk among South African adolescents.

child abuse, sexual; domestic violence; prevalence; rape; risk; South Africa; violence; women

Abbreviations: HIV, human immunodeficiency virus; SADHS, South African Demographic and Health Survey; WHO, World Health Organization.

Gender-based violence is widely recognized as an important public health problem, both because of the acute morbidity and mortality associated with assault and because of its longer-term impact on women's health, including chronic pain, gynecologic problems, sexually transmitted diseases, depression, post-traumatic stress disorder, and suicide (1). Gender-based violence is generally understood to include physical, sexual, and psychological abuse from intimate partners, sexual violence by nonpartners, sexual abuse of girls, and acts such as trafficking women for sex (2). Since the 1993 World Bank report on health highlighted gender-based violence as a priority public health concern (3), information on the prevalence of gender-based violence has increased dramatically (4, 5). However, research detailing the multifaceted nature of violence and the extent of joint occurrence between different types of violence remains sparse. Also yet to be adequately addressed are the question of age at onset of different types of violence and whether the experience of violence in childhood might correlate to earlier onset of adult victimization. Gaining a better understanding of the age at onset is important for designing studies that identify risk factors for violence and properly targeting prevention programs.

Correspondence to Dr. Kristin Dunkle, Department of Epidemiology, University of Michigan, 611 Church Street, Ann Arbor, MI 48104-3028 (e-mail: kdunkle@mrc.ac.za).

Experience of violence in childhood, particularly sexual violence, has been identified as a risk factor for experiencing violence in adulthood, a phenomenon known as "revictimization" (6–8). However, most research on revictimization has been carried out in developed countries, with a disproportionate number of studies carried out among American college students (6, 7). These studies have consistently found correlations between child sexual assault and adult sexual (9–16) and physical (15, 17–22) assault, but comparison of results across studies remains difficult because of widely varying definitions of violence (6–8). In particular, comparatively little work has distinguished sexual assaults by male partners from sexual assaults by other men. Research from geographically diverse settings has shown that sexual violence by male partners frequently occurs in conjunction with other abusive behaviors, including physical and emotional abuse (23–25), and thus often functions as part of an overall pattern of control and exploitation within an ongoing sexual relationship (17, 26). This suggests that it may be more appropriate to view physical and sexual violence perpetrated by intimate partners as different manifestations of a single phenomenon, with sexual violence perpetrated by nonpartners considered separately.

Age cutpoints used to distinguish between child and adult experiences of violence have ranged from 13 years to 18 years of age (6), leading to ambiguity regarding whether violence in teenage years should be considered as exposure or outcome when assessing revictimization. One recent meta-analysis of revictimization literature found no independent effect for the choice of age cutoff on the magnitude of associations between child sexual assault and adult victimization (6). Studies from the United States that examined child, adolescent, and adult sexual violence separately have suggested that adolescent victimization may be more strongly associated with adult revictimization than sexual assault in childhood (8, 11, 12), highlighting the potential importance of violent experiences associated with the onset of sexual activity. Recent studies from developing countries further suggest that sexual violence at first intercourse may increase women's risk of later adverse reproductive health outcomes, including teenage pregnancy (27) and human immunodeficiency virus (HIV) (28).

In this paper, we draw on data from women who attended antenatal clinics in Soweto, South Africa, to explore the following questions: What is the prevalence of different types of gender-based violence in the population and what are the patterns of joint occurrence? What is the age at onset of violence and how does this compare with age at first intercourse? Finally, how does child sexual assault or forced first intercourse affect women's risk for experiencing intimate partner violence or sexual assault by nonpartners later in life?

MATERIALS AND METHODS

Data were drawn from a larger study of gender-based violence and HIV carried out in Soweto, South Africa, between November 2001 and April 2002. Participants were recruited from antenatal clinics in three community health centers and Soweto's single public hospital. All pregnant women presenting for care in these clinics were offered voluntary counseling and testing for HIV during the initial part of their visit. Women aged 16 or more years who elected to have an HIV test were potentially eligible for our study.

Women arrived at the clinics early each weekday morning, and the patient queue was established prior to commencement of voluntary counseling for HIV. The number of women seeking care at each clinic on a given day ranged from zero to over 50. A team of six South African female fieldworkers trained in gender-based violence and HIV/acquired immunodeficiency syndrome awareness visited the clinics in a systematic rotation and screened women who had received HIV pretest counseling for possible participation in the study. When patient volume in a clinic was low (generally 12 patients or less), all patients were screened for eligibility as they completed voluntary counseling for HIV; when patient volume was higher, we used the established clinic queues to systematically sample women for eligibility screening.

Consent documents and questionnaires were developed in English and translated into isiZulu and Sesotho in collaboration with the fieldwork team to ensure appropriate use of local dialect. Informed consent procedures and interviews were conducted in private and completed prior to the participant's receiving results of her HIV test. Interviews used structured questionnaires and covered sociodemographic characteristics, gender-based violence, sexual behavior, relationship with male partner, substance use, and reproductive history. Participants were offered referral information for local support services specializing in violence against women and HIV/acquired immunodeficiency syndrome. All procedures followed World Health Organization (WHO) ethical and safety recommendations for research on domestic violence against women (29). Ethical approval was obtained from the University of the Witswatersrand, Johannesburg, South Africa, and the University of Michigan, Ann Arbor, Michigan.

Our final sampling frame comprised 3,982 pregnant women who attended study clinics during the fieldwork period. Of these women, 1,790 (45.0 percent) were sampled and screened for potential eligibility, and 1,467 (82.0 percent) of those were eligible. Of the 323 ineligible women, 274 declined or delayed HIV testing (84.8 percent), 21 did not have a language in common with the interviewer (6.5 percent), 11 had prior knowledge of HIV-positive status (3.4 percent), 11 had previously received care at another research site (3.4 percent), and six were under the age of 16 years (1.9 percent). Of the potentially eligible women, 1,395 (95.1 percent) agreed to participate.

Intimate partner violence

We assessed male intimate partner violence using a modified version of the WHO violence against women instrument; this measure was developed for and validated in a seven-country prevalence study (30). It contains four questions on emotional violence from male partners, six questions on physical violence, and three questions on sexual violence. To increase local relevance, we added three questions on financial abuse and four questions on emotional

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abuse, all of which had been identified as important in previous South African studies of partner violence (27, 31); details of final questions are provided in tabular material below. This instrument elicited information on the past year and lifetime history of financial, emotional, physical, and sexual abuse by male intimate partners, including the frequency of specific behaviors and the age at first occurrence of physical or sexual assault by an intimate partner.

Other sexual violence

We chose age 15 years as the cutpoint between child and adult experience of sexual violence to facilitate comparability of our data with the data of the WHO Multi-Country Study (30) and the South African Demographic and Health Survey (SADHS) (32). Questions on sexual violence were adapted for this study from similar questions in the WHO study (30), the SADHS (32), and a population-based study of violence in three South African provinces (31, 33). Sexual assault before the age of 15 years was assessed using one question on unwanted touching and one on unwanted sex (32, 33). Questions also assessed the age at first occurrence and frequency of assaults. Women were also classified as experiencing child sexual assault if they reported sexual intimate partner violence ($n = 7$) or forced first intercourse ($n = 62$) prior to the age of 15 years. Adult sexual assault by nonpartners was assessed using two questions on sexual assault by men other than boyfriends or husbands at age 15 or more years. Again, questions included information on the age at first occurrence and frequency of assaults. These questions are given in tabular material below.

To assess experiences at first intercourse, we asked women to choose the statement that most accurately described their experience of first coitus: “I was willing,” “I was persuaded,” “I was tricked,” “I was forced,” or “I was raped.” Women who reported being forced or raped were considered to have experienced forced first intercourse (prevalence values including women who reported being tricked were also calculated to allow comparison). Women were also considered to have experienced forced first intercourse if they reported forced sex by a male intimate partner, or rape by a nonpartner, before the reported age of first intercourse. In these cases ($n = 42$), the age at first forced sex was considered to represent the age at first intercourse.

TABLE 1. Frequency of selected demographic variables among 1,395 women attending antenatal clinics in Soweto, South Africa, between November 2001 and April 2002*

	No.	%
Age (years)		
16–20	291	20.9
21–25	446	32.0
26–30	352	25.2
31–35	196	14.1
≥36	110	7.9
Weeks of gestation (n = 1,376†)		
<14	194	14.1
14–24	806	58.6
>24	376	27.3
Primaparous (n = 1,393)	592	42.5
HIV‡ serostatus		
HIV positive	458	32.8
HIV negative	908	65.1
Not traceable	29	2.1
Current relationship status		
Married	312	22.4
Living with a man	367	26.3
Steady boyfriend	697	50.0
No male partner/partner deceased	19	1.4
Education		
0–5 years	56	4.0
6–11 years	764	54.8
12 years	474	34.0
Any postsecondary	101	7.2
Currently studying (any level)	135	9.7
Housing quality		
Home has piped water (n = 1,388)	1,281	92.3
Home has indoor toilet (n = 1,394)	301	21.6
Home has electricity (n = 1,393)	1,151	82.6
Home has television (n = 1,379)	1,054	76.4

* Variables with missing data from nonresponse are noted in parentheses.

† Two participants were found to have false pregnancies, and 17 pregnancies were of undetermined gestational age.

‡ HIV, human immunodeficiency virus.

Statistical analysis

Data were double entered into Epi Info version 6.04d public domain software available from the Centers for Disease Control and Prevention, Atlanta, Georgia, and then transferred to SAS version 8.02 software (SAS Institute, Inc., Cary, North Carolina) for analysis. After examining descriptive statistics, we calculated cumulative incidence functions to describe the age at first intercourse, the age at first occurrence of physical or sexual violence by a male partner, and the age at first occurrence of adult sexual assault by a nonpartner. As the prevalence of violence is high in this population, we considered it likely that women who had not yet experienced physical/sexual partner violence or adult sexual assault by a nonpartner might experience these events later in life (34). Thus, women who did not report these outcomes were censored at their age as of the date of the interview. The SAS PROC LIFETEST (SAS Institute, Inc.) (Kaplan-Meier method) was used to estimate the survivor function for each variable, and this function was then inverted to yield the cumulative incidence function.

To evaluate whether child sexual assault or forced first intercourse influenced the risk of later physical/sexual partner violence or adult sexual assault by a nonpartner, we constructed separate Cox hazard models for each of these outcomes, in each case treating child sexual assault and forced first intercourse as time-varying covariates. Chrono-

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TABLE 2. Reported prevalence of male intimate partner violence by type of violence among 1,395 women attending antenatal clinics in Soweto, South Africa, between November 2001 and April 2002

	No.*	Past 12 Months				Lifetime			
		Ever		More than once		Ever		More than once	
		No.	%	No.	%	No.	%	No.	%
Financial abuse: "Has he or any other partner ever…"									
Failed to provide money to run the house or look after the children but had money for other things?	1,395	87	6.2	84	6.0	105	7.5	103	7.4
Taken your earnings or pay packet from you?	1,372	9	0.7	8	0.6	20	1.5	15	1.1
Tried to prevent you from going to work, selling, or making money in any other way?	1,394	69	4.9	67	4.8	83	6.0	77	5.5
Any financial abuse	1,387	154	11.1	149	10.7	190	13.7	179	12.9
Emotional abuse: "Has he or any other partner ever…"									
Forced you or your children to leave the place where you were living?	1,383	71	5.1	61	4.4	104	7.5	86	6.2
Insulted you or made you feel bad about yourself?	1,395	255	18.3	231	16.6	447	32.0	417	29.9
Belittled or humiliated you in front of other people?	1,394	134	9.6	119	8.5	253	18.1	218	15.6
Tried to prevent you from seeing family or friends?	1,394	134	9.6	126	9.0	202	14.5	192	13.8
Tried to prevent you from speaking with other men?	1,389	461	33.2	454	32.7	595	42.8	586	42.2
Boasted about or brought home girlfriends?	1,390	81	5.8	61	4.4	176	12.7	134	9.6
Done things to scare or intimidate you on purpose, for example, by the way he looked at you, by yelling and smashing things?	1,394	117	8.4	105	7.5	200	14.3	176	12.6
Threatened to hurt you?	1,389	310	22.3	258	18.6	509	36.6	464	33.4
Any emotional abuse	1,391	709	51.0	664	47.7	939	67.5	897	64.5
Physical abuse: "Has he or any other partner ever…"									
Pushed you or shoved you?	1,390	148	10.6	123	8.8	318	22.9	274	19.7
Slapped you or threw something at you which could hurt you?	1,394	301	21.6	213	15.3	625	44.8	471	33.8
Hit you with his fist or something else that could hurt you?	1,394	109	7.8	100	7.2	264	18.9	239	17.1
Kicked you, dragged you, or beat you up?	1,394	85	6.1	71	5.1	217	15.6	193	13.8
Strangled you or burnt you on purpose?	1,392	39	2.8	26	1.9	95	6.8	75	5.4
Threatened to use or actually used a gun, knife, or other weapon against you?	1,386	60	4.3	44	3.2	128	9.2	91	6.6
Any physical abuse	1,380	352	25.5	253	18.3	695	50.4	534	38.7
Sexual abuse									
Has he or any other partner ever physically forced you to have sex when you didn't want to?	1,392	97	7.0	79	5.7	222	15.9	163	11.7
Have you ever had sex when you did not want to with your current boyfriend or husband, or any other partner, because you were afraid of what he might do?	1,394	102	7.3	87	6.2	188	13.5	157	11.3
Has your current boyfriend or husband, or any other partner, ever forced you to do something sexual that you found degrading or humiliating?	1,389	19	1.4	12	0.9	52	3.7	49	3.5
Any sexual abuse	1,391	135	9.7	107	7.7	280	20.1	205	14.7
Any physical or sexual abuse	1,394	420	30.1	304	21.8	773	55.5	597	42.8

* Indicates the number of respondents with nonmissing data for the category.

logic age at the incidence of the first violent event was used as the time axis for both models; women who had not experienced the violent outcome under consideration were censored at their age at interview. In cases where the age at first intercourse and the age at first physical/sexual partner violence were equal, we assumed first intercourse to have preceded partner violence. In modeling adult sexual assault by nonpartners, however, we set the time-varying predictor variable to take the value of 1 only when the age at sexual assault was greater than the age at first intercourse. This accounted for the possibility that first intercourse and first adult sexual assault by a nonpartner might comprise a single event.

RESULTS

Sociodemographic characteristics of the sample are described in table 1. The women ranged in age from 16 years

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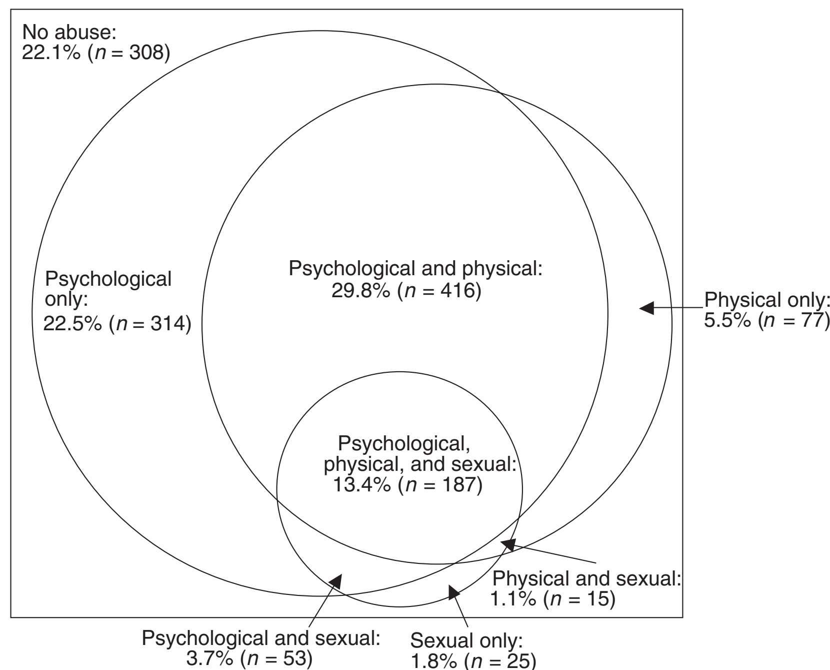

FIGURE 1. Overlaps between different types of male partner violence reported among 1,395 women attending antenatal clinics in Soweto, South Africa, between November 2001 and April 2002. Financial abuse and emotional abuse have been combined into the single category of psychological abuse for purposes of illustration.

to 44 years and from 6 to 41 weeks pregnant. As shown in table 2, 30.1 percent of participants reported being physically or sexually assaulted by a male partner in the last 12 months, with 21.8 percent of the overall sample reporting more than one incident. Likewise, 55.5 percent of participants reported being physically and/or sexually assaulted by a male partner at least once during their lives, with 42.8 percent reporting more than one incident. Figure 1 describes the patterns of joint occurrence between different types of intimate partner violence. Only 22.1 percent of participants reported no lifetime abuse from male partners, while 29.8 percent reported emotional/financial abuse plus physical abuse, and 13.4 percent reported emotional/financial, physical, and sexual abuse. Among women reporting physical/sexual violence from partners, 84.8 percent also reported financial/emotional abuse. Among women reporting sexual violence, 72.1 percent also reported physical violence. Women who reported emotional/financial abuse and physical/sexual abuse were more likely to report more than one occurrence of physical/sexual abuse than those who reported physical/sexual abuse alone (crude odds ratio = 1.99, 95 percent confidence interval: 1.30, 3.04).

As illustrated in table 3, 8.0 percent (n = 111) of participants reported child sexual assault, 7.3 percent (n = 101) reported forced first intercourse at the age of 15 or more years, and 12.4 percent (n = 171) reported that first coitus was forced, regardless of age. Adult sexual assault was reported by 7.9 percent (n = 110) of participants. Only 23.6 percent of those reporting adult sexual assault by a nonpartner reported more than one incident compared with 73.2 percent of women reporting sexual violence from intimate partners.

Age at first intercourse and onset of violence

The reported age at first intercourse ranged from 5 to 29 years. The median was 17 years, and 54.8 percent of participants reported initiation at age 16 years (n = 259), age 17 years (n = 255), or age 18 years (n = 250). Earlier first intercourse was more likely to be forced: 97 percent of women reporting first coitus before the age of 13 years reported nonconsent, as did 26.7 percent of those reporting first coitus at age 13 or 14 years and 8.9 percent of those reporting first coitus at age 15 or more years. The reported age at first occurrence of physical/sexual partner violence ranged from 12 to 39 years, and the reported age at first occurrence of adult sexual assault by a nonpartner ranged from 15 (by definition) to 30 years. Cumulative incidence functions for these experiences (figure 2) highlight the different patterns of age at onset. The first incident of adult sexual assault by nonpartners was concentrated in the late teens, with 82.8 percent of adult sexual assault by nonpartners estimated to occur before the age of 20 years. In contrast, the first physical or sexual assault by a partner occurred at all ages from the late teens through the late thirties (the upper age limit of this study population). The time from first intercourse to first partner

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TABLE 3. Prevalence of sexual assault (by age) and forced sexual initiation among 1,395 women attending antenatal clinics in Soweto, South Africa, between November 2001 and April 2002

	No.*	Ever		More than once	
		No.	%	No.	%
Child sexual assault					
When you were a child, before you were 15 years of age, did a man ever touch you sexually or force you to touch him sexually when you didn't want to?	1,391	70	5.0	28	40.0
When you were a child, before you were 15 years of age, did anyone ever persuade or force you to have sex when you did not want to?	1,388	69	5.0	23	33.3
Total child sexual assault†	1,388	111	8.0		
Total child sexual assault if "tricked" at first intercourse is included	1,388	117	8.4		
Adult sexual assault by nonpartner					
Since you were 15 years of age, has someone apart from a boyfriend or husband tried to make you have sex when you did not want to, but did not succeed in doing this?	1,391	62	4.5	16	25.8
Since you were 15 years of age, has anyone else apart from a boyfriend or husband ever made you have sex when you did not want to?	1,392	54	3.9	12	22.2
Total adult sexual assault by nonpartner	1,391	110	7.9	29	26.4
Forced first intercourse (all ages)	1,382	171	12.4		
Forced first intercourse (all ages) if "tricked" included	1,382	240	17.4		
Forced first intercourse (age, ≥15 only)	1,382	101	7.3		
Forced first intercourse (age, ≥15 only) if "tricked" included	1,382	164	13.2		

* Indicates the number of respondents with nonmissing data for the category.
† Includes the questions above plus sexual intimate partner violence and forced first intercourse prior to age 15 years.

violence ranged from –4 years to 27 years, with a median time of 5 years. Only 29 women (2.1 percent) reported first physical/sexual partner violence prior to first coitus, while 163 (11.7 percent) reported that first coitus and first physical/sexual partner violence occurred at the same age.

Revictimization

Among participants reporting neither child sexual assault nor forced first intercourse, 52.0 percent reported physical/sexual partner violence, and 5.3 percent reported adult sexual assault by a nonpartner. Among participants who reported child sexual assault, 74.8 percent reported physical/sexual partner violence, and 15.6 percent reported adult sexual assault by a nonpartner. Among participants who reported forced first intercourse, 75.3 percent reported physical/sexual partner violence, and 9.3 percent reported separate, subsequent adult sexual assault by a nonpartner. Both child sexual assault and forced first intercourse were significantly associated with increased risk of later revictimization, as well as earlier age at onset for adult violence (table 4).

DISCUSSION

This paper examined the prevalence and patterns of gender-based violence and revictimization among women attending antenatal clinics in Soweto, South Africa. Over half of these women reported ever experiencing physical and/or sexual violence from male intimate partners, and nearly one third reported such violence in the last 12 months; most women reporting intimate partner violence reported multiple types. The reported age at onset of physical and/or sexual partner violence ranged from 12 to 39 years, with a steady rise in cumulative incidence from the late teens onward. In contrast, the onset of adult sexual assault by a nonpartner (7.9 percent of participants) was highest before age 20 years, with little rise in cumulative incidence thereafter. Eight percent of participants reported a history of child sexual assault, while 7 percent reported forced first intercourse at the age of 15 or more years. The experiences of child sexual assault and forced first intercourse were associated with increased risk and earlier onset of physical/sexual partner violence and adult sexual assault by a nonpartner.

Prevalence of gender-based violence

We chose to treat physical and sexual violence by male intimate partners as a single construct, with sexual assaults by nonpartners considered separately. Classifying violent experience by perpetrator is consistent with ethnographic research on perceptions of violence by South African women, who generally identify sexual violence by husbands and boyfriends to be part of an overall pattern of male control in intimate relationships and as a phenomenon

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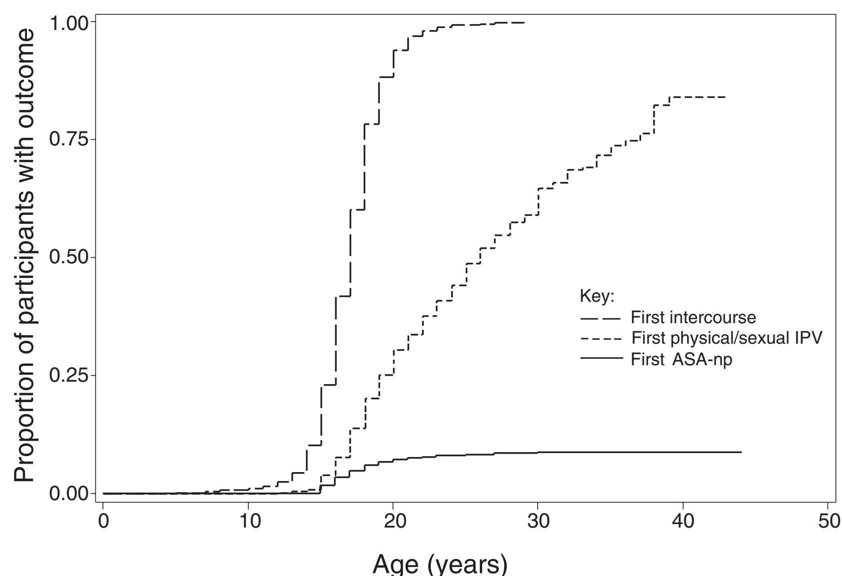

FIGURE 2. Cumulative incidence functions for age at first intercourse, age at first physical or sexual male intimate partner violence (IPV), and age at first adult sexual assault by a nonpartner (ASA-np) among 1,395 women attending antenatal clinics in Soweto, South Africa, between November 2001 and April 2002.

distinct from rape and sexual violence by other men (26, 35). The extensive overlap between different manifestations of intimate partner violence and the fact that physical and sexual assaults are more likely to be repeated when financial and/or emotional abuse occurs simultaneously confirm that partner assaults are most often part of a broader pattern of controlling behavior.

The prevalences of all types of violence reported in this study are generally comparable with or higher than estimates from prior population-based studies. The SADHS (32) and the Three Province Study (36, 37) reported lifetime estimates of physical violence from intimate partners ranging from 12.5 percent to 26.8 percent, compared with 50.4 percent in this study. We conjecture that the higher lifetime prevalence of intimate partner violence found in our study may reflect higher disclosure facilitated by an interview environment away from the woman's home and the use of a more detailed instrument than previously utilized (38, 39). The SADHS and the Three Province Study estimated prevalences of lifetime rape plus attempted rape ranging from 3 percent to 12 percent, which is comparable to our result of 8 percent.

TABLE 4. Risk ratios from Cox hazard models with time-varying covariates showing risk of violent revictimization for women who experienced child sexual assault or forced first intercourse among participants attending antenatal clinics in Soweto, South Africa, between November 2001 and April 2002, with percentage of women estimated to experience each type of violence by ages 18 and 21 years, using the Kaplan-Meier method

	Physical or sexual violence by partner*,†				Adult sexual assault by a nonpartner†,‡			
	By age 18 years (%)	By age 21 years (%)	RR§	95% CI§	By age 18 years (%)	By age 21 years (%)	RR	95% CI
No early violence¶	17.2	29.8	1.00		1.9	3.0	1.00	
Child sexual assault (age, <15 years)	40.4	59.3	2.43	1.93, 3.06	10.0	11.4	2.33	1.40, 3.89
Forced first intercourse (age, ≥15 years)	32.0	52.6	2.64	2.07, 3.38	2.7	2.7	2.14	0.92, 4.98

* A total of 1,377 participants with no missing data for outcome or predictor variables. Participants with no intimate partner violence were censored at age on date of interview.

† Model adjusted for interviewer effects.

‡ A total of 1,389 participants with no missing data for outcome or predictor variables. Participants with no adult sexual assault by a nonpartner were censored at age on date of interview.

§ RR, relative risk; CI, confidence interval.

¶ Participants reporting neither child sexual assault nor forced first intercourse.

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In the SADHS, 1.6 percent of women nationwide reported having been raped before the age of 15 years (40), compared with 5.0 percent in our study that used an identical question. The overall prevalence of child sexual assault in our study (8.0 percent) is thus higher than population-based data would suggest, although lower than other South African research that used much broader definitions. A study in the Northern Province included unwanted kissing and found that 54.2 percent of 414 school students reported unwanted sexual contact, although only 13.3 percent of these considered themselves to have been abused (41, 42). Researchers and study participants often differ in their understandings of what constitutes report-worthy violence. Despite our use of questions focused on specifically described behaviors, the prevalence of child sexual abuse in this study may reflect selective underreporting by women. Focus groups in the Eastern Cape with adolescent women who had been asked similar questions revealed that, because severe sexual harassment and rape were so common, young women reported to interviewers only those incidents of unwanted sexual touching that they judged to be "serious" (Mzikazi Nduna, Medical Research Council, personal communication, 2003).

First intercourse: age and use of force

No population-based study in South Africa has examined forced first intercourse, but other local studies have reported prevalences ranging from 10.0 percent (43) to 28 percent (44), although the latter value is an overestimate as virgins were dropped from the denominator. Our finding that 12.4 percent of women were forced at first intercourse, with 7.3 percent forced at the age of 15 or more years, is thus consistent with other data, as is our finding that age at first coitus for women is inversely related to the probability of consent (43, 45–49). Future research on age and consent at first intercourse would benefit from use of right-censored, age-dependent methods that can correctly account for the presence of participants who have not experienced coitarche.

Age at onset of adult violence

The age of onset of intimate partner violence has received scant attention to date (25, 34, 50). We found that the incidence of physical and/or sexual partner violence rose sharply at the age of 15 years and remained relatively constant through the late thirties, with cumulative incidence estimated to be 30.5 percent by age 30 years. A study of 211 Japanese-American women in Los Angeles found that the risk of first partner physical violence was highest from the ages of 18–22 years and declined thereafter (34). Among women reporting physical/sexual partner violence in our study, approximately 60 percent reported onset either before (2.1 percent), concurrent with (11.7 percent), or within 5 years of first coitus (45 percent). A study of 188 women in Nicaragua found that, among married or cohabiting women who had experienced violence, 50 percent reported that it began within 2 years of marriage or cohabitation, while 80 percent reported that it began within 4 years (25). Taken together, these results suggest that the period surrounding sexual debut and the early years of a new relationship may be high-risk times for onset of partner assault. The relatively constant incidence shown in our sample might be explained by the facts that few participants were married and that 62.3 percent were in relationships of less than 4 years' duration. The distribution of relationships is consistent with population-based data from the SADHS (32), suggesting that the age-at-onset findings here are likely to be broadly generalizable to South African women. Further research incorporating cross-cultural comparisons of risk factors associated with onset of partner revictimization violence will help to clarify this issue.

Revictimization

We found that child sexual assault was associated with increased risk of both physical/sexual partner violence and adult sexual assault by nonpartners; this result is consistent with prior research showing associations between child sexual assault and adult violence in developed countries (9–21, 51, 52). Forced first intercourse similarly increased the risk of reporting both forms of violence, although the association was only marginally significant for later events of adult sexual assault by nonpartners. Taken together, these results suggest that forced first intercourse after the age of 15 years has a similar impact on the risk of revictimization as does childhood sexual assault, and these results support the hypothesis that having an early sexual experience that is unwanted, regardless of age, contributes to increased risk of later revictimization. We also found that these early unwanted sexual experiences were associated with younger age at onset of adult violence. This finding is consistent with preliminary results from population-based research in Japan using the same WHO instrument (Mieko Yoshihama, University of Michigan, personal communication, 2003) and suggests the need for proactive secondary prevention efforts with young survivors of violence. It also highlights the utility of survival analysis on retrospectively collected data on age at first violence.

Limitations

This study has some limitations. We have no data available on clinic attendees who were not sampled for screening, and thus we cannot determine how well the women sampled represent the overall clinical population. The cross-sectional design required us to rely on women's ability to recall violent experiences, as well as the age at which they first occurred, and on participants' willingness to disclose this information (53, 54). It is likely that violence, despite the high observed prevalence, is underreported and that data on age at onset are somewhat imprecise. Prior research in South Africa has shown that forced first intercourse is associated with increased risk of pregnancy under the age of 18 years (27), and violence has been noted as a risk factor for pregnancy in several other settings (2). It is therefore possible that survivors of violence are overrepresented in our study population, but there is no reason to believe that the interrelations between different forms of violence and patterns of onset should be different from those of the general population. All of the women in our sample, by virtue of their preg-

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nancy, were known to have experienced unprotected coitus and thus may not be representative of women who are not sexually active or use successful contraception. Likewise, study participants in their thirties may not be representative of South African women of this age. Overall, however, participants are likely to be representative of pregnant South African women, as 92 percent of these women use public facilities for antenatal care (55).

Conclusions and directions for future research

This study confirms that gender-based violence is a key health risk among South African women. The finding that 21.8 percent of women seeking antenatal care experienced multiple assaults by a male partner in the last 12 months strongly suggests that violence during pregnancy is sufficiently common to warrant development of violence-related interventions for antenatal care in South Africa. Our findings also provide evidence that primary and secondary prevention of gender-based violence is urgently needed among South African adolescents. Further research is needed to clarify the mechanisms through which early assaults leave women vulnerable to revictimization and to develop appropriate strategies for secondary prevention. Preventing gender-based violence in South Africa may be particularly urgent given the associations demonstrated elsewhere between experience of gender-based violence and women's HIV serostatus (56). Cross-cultural comparisons of patterns on the age at onset of violence will help to elucidate risk factors for incidence and also help to create much needed prevention and intervention programs.

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