moulds may cause emetic illness in a variety of animals, usually in association with the consumption of grain foods.[4] Contamination of food by heavy metals such as copper, zinc, tin and cadmium has been described as causing an acute emetic illness,[5] but such contamination was not detected in this outbreak. Outbreaks of rapid-onset upper gastro-intestinal illness among children have been attributed to a mass sociogenic illness.[5] Care must be taken to exclude relevant microbiological and chemical aetiologies before such a diagnosis is accepted. In this case, the isolation of *S. flexneri* from porridge and the finding of high levels of bacterial contamination of fruit juice highlight the need for a thorough investigation of all such outbreaks.

A major concern was the closing ceremony, as approximately 13 000 children were to be involved, both as participants and as members of the audience. EHOs inspected the premises of the manufacturers of the food to be served to these children and were present at venues where catering took place. Arrangements had been made before the closing ceremony to ensure that, should there be any problems, police were on standby to ensure compliance with the orders of the EHOs. Fortunately there were no further outbreaks.

The prevention of outbreaks at future similar events is of primary importance. Prior planning of such events should include close co-operation with EHOs, who should be involved in the tender process, with prior inspection of caterers' premises to ensure that they meet required standards. EHOs should regularly monitor the production, transport, on-site storage and serving of food at such events. Consideration should be given to storage of samples of every batch of food served, so that it would be available for analysis if necessary.

Further lessons may be learnt from the outbreak response that was mounted. A response team should be constituted in advance to react to situations of this nature. This team should be accredited with organisers of the event and have the means to enforce any food safety interventions that are felt to be necessary as well as the authority to collect specimens of implicated food. Hospitals should have protocols in place for dealing with such situations in a manner that facilitates the collection of vital epidemiological data.

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PREVALENCE OF EMOTIONAL, PHYSICAL AND SEXUAL ABUSE OF WOMEN IN THREE SOUTH AFRICAN PROVINCES

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Introduction. There is growing recognition in the ranks of the South African government that violence against women is a serious problem facing us all. Until now data on the epidemiology of violence against women in South Africa have been scanty. This report presents the findings of the first major community-based prevalence study.

Objectives. To describe the prevalence of physical, sexual, financial, and emotional abuse of women.

Methods. A cross-sectional study conducted in the Eastern Cape (EC), Mpumalanga (MP) and the Northern Province (NP). The sample included one randomly selected woman aged 18 - 49 years living in each of 2 232 households. The sample was drawn using stratified, multistage, random methods, and 1 306 questionnaires were completed, giving a 90.3% response rate after adjusting for households without an eligible woman.

Results. The prevalences of ever having been physically abused by a current or ex-partner were 26.8% (EC), 28.4% (MP) and 19.1% (NP). The prevalences of abuse in the last year were 10.9% (EC), 11.9% (MP) and 4.5% (NP). The prevalences of rape were 4.5% (EC), 7.2% (MP) and 4.8% (NP). Considerable emotional and financial abuse was also reported, e.g. the prevalences of a partner having boasted about or brought home girlfriends in the previous year were 5.0% (EC), 10.4% (MP) and 7.0% (NP). The prevalences of physical abuse during a pregnancy were 9.1% (EC), 6.7% (MP) and 4.7% (NP). The proportions of abused women who were injured in the year before the survey were 34.5% (EC), 48.0% (MP) and 60.0% (NP).

Conclusions. This study is the first large-scale, community-based prevalence study to be undertaken in South Africa.

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The main findings are that emotional, financial and physical abuse are common features of relationships and that many women have been raped. Physical violence often continues during pregnancy and constitutes an important cause of reproductive morbidity. Many women are injured by their partners and considerable health sector resources are expended providing treatment for these injuries.

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In his opening address to parliament (25 June 1999),[1] President Mbeki spoke of the 'twilight world of . . . continuous sexual and physical abuse of women and children' found in 'our towns and cities'. In so doing he reflects an increasing recognition in the ranks of the government and many quarters of civil society that battery, rape and other manifestations of sexual violence are very common, have a major impact on health, development, equity and social justice, and are criminal acts. With this awareness has come a new commitment to developing services for abused women and interventions to combat abuse. One manifestation of this was the decision by the Department of Arts, Culture, Science and Technology to fund research on violence against women in the first year of the National Innovation Fund.

The origins, causation and consequences of the high levels of violence against women found in South Africa are highly complex, but research is beginning to shed more light on these issues. This research suggests that to a great extent the roots of violence against women lie in the patriarchal nature of our society, where women are viewed as inferior to men, often as their possessions,[2] and in need of being led and controlled.[3] Research among adolescents, in particular, has shown that one of the most common areas in which the control is exerted is over women's sexuality, and therefore women are beaten for refusing a proposal, wanting to end a relationship, or having other partners (and sometimes to make sure they do not even think of having other partners).[3] Several authors have argued that violent practices are deployed by men against women in attempts to maintain particular self images and social evaluations in the face of real or imagined threats, i.e. to prove that they are 'real' men and that their women are under their control.[3,4] Relatedly, Wilson and Ramphele[5] argue that the political, economic and social powerlessness of most South African men living under apartheid resulted in many men taking their frustrations out on their female partners.

The unrelenting nature of abuse suffered by women is undoubtedly explained by the fact that in particular situations the use of certain forms of violence by men to control and punish women is perceived as being socially acceptable to both men and women of all ages ('Soul City' (unpublished), and Wood and Jewkes[6]) While this is a testament to the success of the prevailing patriarchal ideologies, it also needs to be understood in the broader context of a society that is only now emerging from decades of colonialism and apartheid. One result of the years of State-sponsored violence and armed resistance is that certain forms of violence are viewed as acceptable ways of solving conflicts,[7] gaining and exercising ascendancy, and inflicting punishment. As well as the deployment of violence in (heterosexual) sexual relationships, and of course in criminal contexts, assault occurs relatively commonly in a wide range of social relations, including between workers in the workplace,[8] between nurses and patients,[9] same-gender peers,[6] neighbours,[10] and in same-gender sexual relationships such as between male prisoners (K M Wood — unpublished data).

This paper presents the findings of the first major community-based study to be undertaken in South Africa; it focuses on violence against women by current or ex-partners (i.e. husband or boyfriend), and rape. This was undertaken in order to gain as accurate an understanding of prevalence as possible, given that underreporting of gender violence is a well-recognised problem in surveys.[11] The study was designed so that the findings would be directly comparable with those of the South Africa Demographic and Health Survey (SADHS),[10] which (among other indicators) contains data on the abuse of women nationwide.

METHODS

The aim of the study was to add to the growing, but still rather fragmented, body of knowledge in South Africa on violence against women. The objectives of the study were to describe the prevalence of physical, sexual, financial, and emotional abuse of women, to identify factors associated with increased risk of abuse, to identify health problems and health service use associated with abuse and to describe some aspects of the economic and service implications of violence against women. Data are presented solely on the prevalence of abuse and injury. Risk factor data will be published subsequently.

The study design was a cross-sectional survey, and the research was undertaken in the Eastern Cape (EC), Mpumalanga (MP) and the Northern Province (NP). A sample of women, aged 18 - 49 years, was interviewed in each province. The sampling frame in each province consisted of the enumeration areas (EAs) demarcated for the 1995 census. Each province was stratified into urban and rural areas. Clusters (EAs) were sampled, with probability proportional to the number of households (pps). In the urban areas 14 households were randomly selected in each EA, and in rural areas 28. The sampling design used ensured that within each province the sample was approximately self-weighting. The sample of EAs was drawn at random by Central Statistics for the SADHS; a systematic sample of 50% of these EAs was selected for

interview in MP and the NP, and 1 in 6 in the EC (as there was oversampling here in SADHS).

One randomly selected woman aged 18 - 49 years living in each of 2 232 households was selected: 728 in the EC, 748 in MP and 756 in the NP. No substitution was used if a visiting point did not contain a dwelling or a woman of the right age.

Women were interviewed using a questionnaire that enquired about social and demographic factors; relationships within the previous year; health sector consultations and health problems; experience of abuse as a child; cultural aspects of gender relations and attitudes towards the use of violence; experiences of emotional, financial and physical abuse in the year before the survey; abuse by a partner at any stage; abuse during pregnancy; use of services after injury, sexual abuse, child abuse, or sexual harassment; social support; and experiences with police and the courts. The questionnaire was based partly on one used in Zimbabwe[12] so that there could be comparability of the data. The questionnaire design was also informed by two focus groups of women organised by the Masisukumeni Women's Crisis Centre in Mangweni, Mpumalanga. The first focus group included 'abused' women, while the second included 'non-abused' women. The questionnaires were also pre-tested at this site. The questionnaires were translated into all South African languages except seTswana, and administered in the first language of the interviewee.

Interviews were conducted in private and three attempts were made to contact each woman. Verbal informed consent was obtained for the interviews so that anonymity could be assured. Confidentiality was assured and the interviewers were trained to secure the safety of the woman during the interview, including non-disclosure of the true focus of the study to any person other than the interviewee and changing the topic if someone else entered the room. Interviewers were also trained in non-directive counselling and gave information sheets with referral addresses and numbers to all women interviewed. Ethical approval for the study was granted by the Medical Research Council's Ethics Committee.

Data were entered onto an EpiInfo database, and then validated through a second entry. The data were analysed using the statistical package, Stata (Statcorp, 1997). The survey analysis procedures in Stata were used as these are able to take account of the stratified multistage design used in the sampling.

RESULTS

Of the 2 232 households selected for interview, 1 447 included eligible women (the others either proved not to be households or did not include an eligible woman). In one instance neighbours reported that there was no one at home because the woman had been murdered 2 weeks before by her husband. In 40 households the woman selected refused to be interviewed or provided insufficient information for the questionnaires to be included in the analysis, and 101 women were uncontactable after three visits. A total of 1 306 questionnaires were completed, giving a 90.3% response rate.

Table I shows the demographic and social characteristics of the women interviewed in each province. It shows that the majority of women interviewed lived in rural areas and were black African, reflecting the social demography of these provinces. The distribution of the women's first languages is broad, as would be expected from the 1996 census. Most of the people interviewed had had at least one husband or boyfriend. Almost half of those in the EC and NP were married, while these figures were slightly lower in MP. Women in MP were significantly more likely to be employed in the formal or informal sectors and their households were more likely to include a car, fridge or radio than those in the EC.

Table II describes the prevalence of threatened or actual physical violence by a current or ex-husband or boyfriend at any stage in the woman's life and in the year before the survey among ever-partnered women. The questions on physical violence enquired about being kicked, bitten, slapped, hit with a fist, choked, strangled, intentionally burnt, assaulted or threatened with a gun, knife or other dangerous weapon or whether respondents had ever had objects thrown at them. Physical violence in the year before the survey was significantly less frequently reported in the NP than in the other two provinces.

Table II also shows the results of a question enquiring about experiences of being forced or persuaded to have sex against the woman's will by threatening, holding her down or hurting her in some way. This we refer to here as 'rape'. Of all the rapes reported, 23.3% (17) were said to have occurred in the year before the survey, as did 50% (36) of the attempted rapes. This gives a rape rate of 13.02 rapes per 1 000 women aged 18 - 49 years in these three provinces in the year before the interview. Twenty-four per cent of women who were raped and 27.8% of women who experienced attempted rape, said they had reported it to the police.

Table III shows the prevalence rate of women reporting one or more acts of emotional or financial abuse by a current or ex-boyfriend or husband during the year before the survey. It also presents the prevalence of reports of individual acts. The practices focused on in the questions were reported as being common abusive practices in research from South Africa and Zimbabwe,[12] as well as in focus groups conducted in preparation for this study.

Table IV presents the results of questions on abuse in pregnancy among women who had ever been pregnant. Women in the EC were significantly more likely than those in the other two provinces to report that their men had refused to buy things for the baby. They were also significantly more

Table I. Demographic and social characteristics of the women sampled

Variable	Eastern Cape %	Eastern Cape (N)	Mpumalanga %	Mpumalanga (N)	Northern Province %	Northern Province (N)
Mean age (yrs) (mean (SD))	31.26 (8.85)		31.70 (8.53)		31.52 (8.97)	
Race: black African	94.8	(382)	99.1	(424)	100	(474)
Language						
IsiXhosa	91.1	(346)	0.2	(1)	0.2	(1)
IsiZulu	2.1	(8)	28.1	(117)	0.5	(2)
SiSwati	-	-	32.4	(135)	0.2	(1)
IsiNdebele	-	-	13.2	(55)	0.2	(2)
SePedi	-	-	13.2	(55)	47.4	(212)
XiTsonga	-	-	5.5	(23)	26.4	(118)
Tshi Venda	-	-	0.2	(1)	18.1	(81)
SeSotho	1.6	(6)	0.5	(2)	4.5	(20)
SeTswana	-	-	5.8	(24)	0.5	(2)
Afrikaans	4.0	(15)	0.2	(1)	-	-
English	1.3	(5)	0.5	(2)	-	-
Living in a rural area	67.0	(270)	63.3	(271)	93.5	(444)
Education						
< 1 year	9.7	(39)	16.2	(69)	20.1	(95)
Sub A - Std 3	15.7	(63)	17.8	(76)	11.4	(54)
Std 3 - Std 9	56.4	(226)	41.6	(177)	41.4	(196)
Std 10	15.0	(60)	17.8	(76)	17.8	(84)
Beyond matric	3.2	(13)	6.6	(28)	9.3	(44)
Ever had a husband or boyfriend	98.3	(396)	97.9	(419)	97.7	(464)
Marital/relationship status						
Civil or church marriage	16.4	(66)	12.9	(55)	17.3	(82)
Customary marriage (+/- civil or church)	31.3	(126)	25.0	(107)	34.3	(163)
Cohabiting	4.5	(18)	11.5	(49)	4.8	(23)
Widowed/divorced/separated	8.4	(34)	10.3	(44)	11.6	(55)
Current boyfriend	28.5	(115)	29.9	(128)	24.4	(116)
Previous boyfriend	9.2	(37)	8.4	(36)	5.4	(26)
Never partnered	1.7	(7)	2.1	(10)	2.1	(10)
Employed in formal or/and informal sector	32.5	(131)	47.4	(203)	35.2	(167)
Consumer goods ownership						
Car	9.7	(39)	21.7	(93)	16.8	(80)
Fridge	21.3	(86)	45.1	(193)	32.0	(152)
TV	36.5	(147)	52.8	(226)	44.0	(209)
Radio	67.3	(271)	79.0	(338)	81.9	(389)
Social habits						
Drinks alcohol	14.9	(60)	10.5	(45)	8.4	(40)
Smokes tobacco	8.2	(33)	9.6	(41)	6.5	(31)

SD = standard deviation.

likely to report that their partners prevented them from attending antenatal care than those in MP (the difference in the NP was large but just below the 5% significance level). Table V presents the prevalence of reports of injury caused by physical violence. On average, abused women were beaten more than once a year and a high proportion sought medical assistance.

Discussion

This study is the first major community-based study of the epidemiology of violence against women in South Africa, and its findings confirm that violence against women is highly prevalent. The paper does not present summary statistics for the three provinces together, lest this be quoted as 'the' figure for South Africa. The provinces were not randomly selected and only 32% of the country's population live here, so the results cannot be generalised to the entire country. The SADHS,[10] however, shows that the broad picture in the other provinces is very similar. The prevalence of physical violence found in this study is in keeping with the figure cited in other literature,[13-16] which is that 1 in 4 women are abused in their life-time. It is also very similar to the findings of community-

Table II. Prevalence of physical abuse by current or ex-partner, and rape

Variable	Eastern Cape		Mpumalanga		Northern Province	
	% (*N*)	95% CI	% (*N*)	95% CI	% (*N*)	95% CI
Ever physically abused by current or ex-partner*	26.8 (106)	21.2 - 32.3	28.4 (119)	23.2 - 33.6	19.1 (89)	13.8 - 24.4
Physical abuse by current or ex-partner in year before survey*	10.9 (43)	6.7 - 15.1	11.9 (50)	8.5 - 15.4	4.5 (20)	3.0 - 6.1
Threats of physical violence by current or ex-partner in year before survey*	6.3 (25)	4.2 - 8.5	8.6 (36)	5.7 - 11.5	4.5 (20)	2.8 - 6.2
Ever raped	4.5 (18)	2.3 - 6.6	7.2 (31)	4.8 - 9.7	4.8 (23)	2.5 - 7.2
Ever experienced attempted rape	2.2 (9)	0.7 - 3.8	4.7 (20)	2.3 - 7.1	1.5 (7)	0.2 - 2.8

* Denominator is women who have ever had a partner.

Table III. Incidence of emotional and financial abuse by current or ex-partner in year preceding survey among women who have ever had a partner

Variable	Eastern Cape (*N* = 396)		Mpumalanga (*N* = 419)		Northern Province (*N* = 464)	
	%	95% CI	%	95% CI	%	95% CI
Experience of emotional or financial abuse by current or ex-partner in previous year	51.4	45.1 - 57.7	50.0	43.1 - 56.9	39.6	34.9 - 44.1
Intentional humiliation	4.5	2.1 - 6.9	1.8	0.6 - 3.1	3.9	2.1 - 5.8
Boasted about girlfriends or brought them home	5.0	2.7 - 7.4	10.4	5.7 - 15.1	7.0	4.7 - 9.2
Prevented from seeing family and friends	4.5	2.5 - 6.5	9.4	6.5 - 12.3	6.7	4.5 - 9.0
Prevented from working	5.9	3.8 - 8.0	8.1	5.3 - 10.8	3.7	2.1 - 5.3
Prevented from speaking to other men	13.7	9.8 - 17.6	17.2	13.3 - 21.1	12.3	9.3 - 15.3
Evicted from home*	5.3	2.7 - 7.9	9.0	5.7 - 12.3	3.6	1.9 - 5.2
Partner has not provided money to run the home or look after children but has money for other things†	10.2	6.8 - 13.7	15.7	11.5 - 19.9	10.1	7.2 - 13.0

* Denominator is women living with husband or partner, total *N* = 974.
† Denominator is women with children, total *N* = 1 094.

based studies in the USA (30%)[17] and the UK (25%),[18] and slightly lower than those from other African countries, for example Kenya (42%)[19] and Zimbabwe (32%).[20]

It is likely that there has been underreporting of the prevalence of abuse in this study. This is a common problem in surveys. The main reasons for this are that women are ashamed, see it as a private matter, do not wish to speak badly about their husbands, are afraid to admit that they are abused, or view their experiences as 'normal'.[21] The relatively high proportion of women reporting injury and the high proportion of these women seeking medical treatment suggests either that partners were often very brutal, or that there was underreporting of less severe forms of physical violence, such as slapping. The latter explanation is certainly most likely in the NP as the proportion of women injured there is the highest of the three regions studied, whereas the incidence of physical violence is the lowest.

The fieldworkers in this study were trained to probe in order to try to elicit accounts of less serious types of violence if women did not report abuse, but they may not have been successful in this, probably because it is viewed as 'normal' in many relationships. Comparison of the findings of this study with the 1998 SADHS[10] further highlights how vulnerable surveys can be to underreporting and how difficult it can be to get a measure of this. The level of abuse in the previous year reported in this study of the EC was twice that found in the 1998 SADHS, one-third more than the finding for MP and 15% less than that reported in the NP. A higher level of reporting than that in the SADHS was expected in this study as dedicated studies of violence usually find greater levels of

Table IV. Abuse during pregnancy

Variable	Eastern Cape (*N* = 403) %	95% CI	Mpumalanga (*N* = 428) %	95% CI	Northern Province (*N* = 475) %	95% CI
Proportion of women who have ever been pregnant	85.9	80.8 - 91.0	91.5	88.7 - 94.2	91.2	89.2 - 93.3
Partner refused to buy things for the baby	25.8	20.0 - 31.6	15.8	12.3 - 19.3	12.9	9.3 - 16.5
Partner prevented her from attending antenatal care	10.0	6.5 - 13.4	3.6	1.6 - 5.6	5.2	3.4 - 6.9
Physical abuse when pregnant	9.1	5.5 - 12.6	6.7	4.1 - 9.3	4.7	2.8 - 6.6
For women reporting abuse						
Mean no. of pregnancies during which physical abuse occurred (SD)	2.07 (1.93)		2.16 (2.41)		1.79 (1.23)	
Violence directed at abdomen (*N*)	14.8 (4)		38.9 (7)		53.8 (7)	
Miscarriage due to abuse (*N*)	14.8 (4)		27.8 (5)		5.3 (1)	
Premature labour due to abuse (*N*)	24.0 (6)		27.8 (5)		11.1 (2)	
Proportion of abused women who were either struck on the abdomen, went into premature labour or miscarried as a result of physical violence (*N*)	29.0 (9)		30.8 (8)		40.0 (8)	

SD = standard deviation.

Table V. Injuries from physical violence by a current or ex-partner occurring in the previous year

Variable	Eastern Cape % (*N*)	Mpumalanga % (*N*)	Northern Province % (*N*)
Abused women who were injured	34.9 (15)	48.0 (24)	60.0 (12)
Mean no. of times injured	2.46 (1.51)	2.09 (1.78)	1.75 (1.21)
Women who sought medical attention	91.7 (14)	62.5 (15)	91.7 (11)
Women disclosing abuser's identity to health worker	71.4 (10)	93.3 (14)	90.9 (10)

disclosure than broader surveys. This is attributed to field work factors. In this study more time was spent training fieldworkers in strategies to encourage disclosure, helping the fieldworkers to support women interviewed, and providing the former with skills to cope with hearing distressing accounts daily. We are not sure why the pattern was different in the NP, but assume that it was in some way related to the fieldwork.

The prevalence of rape reported was very high and was almost identical to that reported in the SADHS[10] for MP, and about 50% higher than reported for the other provinces. The reasons for these interprovincial differences are unclear. None the less the rate was lower than has been estimated previously, particularly as studies of adolescent sexuality indicate that a high proportion of women are 'forced' to have sex the first time (e.g. Buga *et al.*[21] reported 28%), and nearly two-thirds of a sample of adolescents in Cape Town reported having had sex against their will.[22] It is possible that the discrepancy may be partly explained by underreporting of sexual coercion occurring some years before the interview as the proportion of reported events in the year preceding the interview is much higher than would be expected. Reporting bias towards more recent events is common in any type of survey, but more so where the subject matter is painful, or, as in the case of rape, where women are often blamed by society for 'provoking' it in some way. It is also likely that sexual coercion by boyfriends or husbands is underreported, particularly as many women believed that a husband has a right to sex whenever he wants it.[23] Research has repeatedly shown that many people in the community restrict the term 'rape' to mean sexual coercion by a stranger or a gang (which may include a boyfriend).[6,24] The phrasing of the question may also have precluded reporting of coercive sex where lesser degrees of force were used or where the woman 'gave in' to avoid being beaten.

While emotional and financial abuse may not result in the same direct injuries or death as physical abuse, they none the less have important implications for the health of women and

children. Women who experience physical violence usually also experience emotional and financial abuse. Reports of one or more forms of emotional or financial abuse were significantly less common in the NP than in the EC. Partners in MP were significantly more likely to prevent their women from working than those in the NP. The difference may, however, be related to the greater opportunity for female employment in MP.

Internationally, studies have shown that women who are economically independent are less likely to be abused by male partners,[25] but there is also evidence that at the time of transition to greater economic independence women's vulnerability may increase.[25] Preventing women from working is a form of abuse; it also reduces women's ability to resist other abusive acts by isolating them, undermining their self-esteem and preventing economic independence.

Women in MP were significantly more likely to have been evicted from their homes by their male partners in the year preceding the study than those in the NP. This was experienced by 1 in 10 women. Some of the women in focus groups indicated that eviction often resulted from women's attempts to complain about other forms of abusive behaviour, notably spending money on girlfriends instead of on the family. At least 1 in 10 of the women with children reported not being supported financially by her partner, even when he had the money to do so. In this way women and children may bear a disproportionate burden of household poverty, a particular problem in homes that are already financially vulnerable. The findings also indicate that a sizeable proportion of men attempt to isolate their wives or girlfriends socially by preventing them from seeing family and friends, or working and speaking with other men. This also serves to undermine women's coping strategies; it may accentuate mental distress associated with abuse and reduce women's ability to leave abusive relationships.

The most serious health problem associated with abuse of women in South Africa is undoubtedly HIV. Obviously rape is one form of abuse in which there is a high risk of HIV transmission. Other data from this study also highlight other areas of risk. The practice of having multiple sexual partners is widely reported in South Africa and is associated with the rapid spread of the HIV epidemic. This study's findings provide some insights into the extent to which men openly have other partners, bring (other) girlfriends home or boast about them. In the focus groups several women described being asked to sleep in the kitchen while their partners shared their marital bed with girlfriends. Given the pattern of gender relations, it is likely that women would not be in a position to insist on condom use, even if they wanted to, and in relationships characterised by physical violence they may risk further abuse by so doing.

Although children are in general highly valued in South African society, the data on abuse during pregnancy show that many men refuse to buy things that are necessary for the baby, prevent their partners from attending antenatal care and are physically violent towards their partners during pregnancy. A relationship between physical abuse and delay of entry into antenatal care has been reported in other countries.[26] In this study, where physical abuse occurred, women normally experienced it in more than one pregnancy. Violence was commonly directed at the pregnant abdomen and was often reported to cause miscarriage or premature labour. These findings suggest that abuse by a partner during pregnancy is a factor that needs to be given far more attention as an influence on women's patterns of antenatal care attendance and on adverse pregnancy outcomes. There is a growing recognition internationally that violence against women is common during pregnancy and an important cause of problems in pregnancy.[27] In the UK the most recent Confidential Enquiry into Maternal Deaths[28] highlighted violence as a cause of maternal death. The results of this study show that abuse during pregnancy is also a serious problem in South Africa. Its prevalence is comparable to that of many more widely recognised causes of reproductive morbidity. Health professionals should be aware that it may be an underlying cause of adverse pregnancy outcomes.

This study has shown that women who are abused by their partners are often injured and seek medical attention, and that many women disclose the identity of their abusers to health workers. It further suggests that a substantial number of health sector consultations each year are related to abuse and that considerable health sector resources are expended on treating injured women. This study should be seen as the first stage in a process that will require considerable further research, particularly to document the impact of violence against women on the health services. Consultations for injury represent one potential point of contact between statutory services and abused women. In many rural areas health services may be the most accessible statutory service. There are clearly opportunities for identifying women who suffer abuse in these circumstances and for offering information and referring to sources of help. Building capacity within health sector staff to perform such roles should be a service development priority. While this activity would undoubtedly represent another claim on medical and nursing time, it would be an efficient use of health sector resources if it contributed to reducing mortality from violent partners and suicide, improving the health of abused women and reducing violence against women overall.

This paper reports the first large-scale, community-based study of the epidemiology of violence against women in South Africa. The data indicate that violence against women is highly prevalent, impacts in multiple ways on women's health and the health sector, and should be regarded as a public health problem. Although details are not presented here, the range of health implications of violence against women suggests that considerable costs are currently being incurred in the health sector in treating the consequences of abuse. Staff within the

health sector treat the immediate consequences of abuse on a daily basis, but the challenge remains to develop the capacity for an appropriate health sector response. This should at least include further training of district surgeons to examine and assist women who have been raped so that the highest possible quality of medical evidence can be available to the courts, as well as training front-line staff in enquiry about abuse and appropriate support and referral of women who disclose abuse to them. Violence against women is an emerging health problem both in South Africa and internationally, not in the sense that it is new, but because its health impact has only recently been recognised. In keeping with its new status, it should be incorporated as a mainstream part of the curriculum for all health professionals.

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