Gender Differences in Risk for Intimate Partner Violence Among South African Adults

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Abstract

Despite a high prevalence of intimate partner violence in South Africa, few epidemiological studies have assessed individual risk factors and differential vulnerability by gender. This study sought to analyze gender differences in risk for intimate partner violence victimization and perpetration according to childhood and adult risk factors in a national sample of South African men and women. Using data from the cross-sectional, nationally representative South Africa Stress and Health Study, we examined data from 1,715 currently married or cohabiting adults on reporting of intimate partner violence. Our analysis included (i) demographic factors; (ii) early life risk factors (including exposure to childhood physical abuse, witnessing parental violence, parental closeness, and early onset DSM-IV disorders); and (iii) adult risk factors (including experiencing the death of a child and episodes of DSM-IV disorders after age 20). Although prevalence rates of intimate partner violence were high among both genders, women were significantly more likely than men to report being victimized (29.3% vs. 20.9%). Rates of perpetrating violence were similar for women and men (25.2% and 26.5%, respectively). Men were more likely to report predictive factors for perpetration, whereas women were more likely to report predictors for victimization. Common risk factors among men and women reporting perpetration included exposure to childhood physical abuse, witnessing parental violence, and adult onset alcohol abuse/dependence. However, risk factors in male perpetrators were more likely to include cohabitation, low income, and early and adult onset mood disorders, whereas risk factors in female perpetrators included low educational attainment and early onset alcohol abuse/ dependence. The single common risk factor for male and female victims of partner violence was witnessing parental violence. Additional risk factors for male victims were low income and lack of closeness to a primary female caregiver, whereas additional risk factors for female victims were low educational attainment, childhood physical abuse, and adult onset alcohol abuse/dependence and intermittent explosive disorder. Intimate partner violence is a significant public health issue in South Africa, strongly linked to intergenerational cycling of violence and risk exposure across the life course. These findings indicate that gender differences in risk and common predictive factors, such as alcohol abuse and exposure to childhood violence, should inform the design of future violence-prevention programs and policies.

Keywords

Introduction

Intimate partner violence (IPV) is a public health problem of global significance, with estimates indicating that the lifetime prevalence of experiencing partner violence is between 15% and 71% among women worldwide (Garcia-Moreno, Jansen, Ellsberg, Heise, & Watts, 2006). This form of violence is characterized by behavior within an intimate relationship that causes physical, psychological, or sexual harm to a partner (Heise & Garcia-Moreno, 2002), and is commonly used to define violence against women by male partners. It has been well-documented that IPV is associated with grave health consequences among women, including an increased risk for morbidity and mortality (Campbell, 2002; Ellsberg, Jansen, Heise, Watts, & Garcia-Moreno, 2008). Although this area of research has received substantial international attention, less effort has been made to investigate the prevalence of violence perpetrated against men in heterosexual relationships, which some studies have found to be equivalent to rates of violence perpetrated against women. The bidirectional nature of violence within partnerships represents an important area of inquiry, as prior investigations have found significant gender differences in violent behaviors and motivations, which may indicate important differentials in IPV risk factors and outcomes for men and women (Archer, 2000; Swan, Gambone, Caldwell, Sullivan, & Snow, 2008). For instance, although perpetration rates may be similar among men and women, the severity of perpetration by women has been found to be much lower. However, there is a dearth of international data examining the different factors that place both genders at risk for perpetration and victimization.

It has been well-documented that South Africa has an extremely high prevalence of IPV. Although estimates vary, studies have consistently shown high rates of violence against women and correlations with injury and adverse mental and physical health outcomes, including alcohol abuse and HIV/AIDS (Campbell, 2002; Doolan, Erlich, & Myer, 2007; Dunkle, Jewkes, Brown, Gray, McIntryre, & Harlow, 2004; Gupta, Silverman, Hemenway, Acevedo-Garcia, Stein, & Williams, 2008; Jewkes, 2002; Seedat, Stein, Jackson, Heeringa, Williams, & Myer, 2009; Williams, Williams, Stein, Seedat, Jackson, & Moomal, 2007). For example, the 1998 Demographic and Health Survey found that 13% of women had been abused by an intimate partner during their lifetime and that adult women were more than twice as likely to be assaulted by a current or ex-partner than by anyone else (Department of Health & Macro International, 1998). A cross-sectional study among women in three South African provinces showed a 24.6% lifetime prevalence rate of experiencing IPV (Jewkes, Levin, & Penn-Kekana, 2002) and a study among men in the rural Eastern Cape Province found that 31.8% reported ever using physical violence against a female partner (Dunkle, Jewkes, Nduna, Levin, Jama, Khuzwayo, et al., 2006). Despite varied estimates, these data strongly suggest that partner violence against women is highly prevalent.

However, while previous research has highlighted the scope of violence against women in South Africa and the factors that place women at risk for experiencing such abuse, fewer studies have investigated the prevalence of violence against men or elucidated possible risk factors for male perpetration and victimization. Furthermore, there is a paucity of nationally-representative epidemiological data on the overall prevalence of IPV among South African men and women and gender differentials in risk for violence.

Post-Apartheid South African society has been characterized by extremely high rates of community-level and interpersonal violence, including homicide, sexual and gender-based violence, and child abuse, which are fueled by a constellation of factors such as socioeconomic inequality, gender inequity, and substance abuse (Doolan et al., 2007; Gilbert, 1996; Jewkes & Abrahams, 2002; Seedat, Van Niekerk, Jewkes, Suffla, & Ratele, 2009; Williams, Herman, Kessler, Sonnega, Seedat, Stein, et al., 2004). Studies indicate, for

example, that over half of female homicide victims are killed by their intimate partners and that both perpetrators and victims are most often found with high blood alcohol content at the time of the crime (Seedat, Van Niekerk, et al., 2009).

In South Africa, exposure to violence in childhood is as ubiquitous as it is in adulthood. According to statistics, homicide rates of children younger than five years are more than double the rates in low-income and other middle-income countries, with higher rates among boys than girls, a sex differential that increases as children enter adolescence (Norman, Matzopoulos, Groenewald, & Bradshaw, 2007). Child abuse is also common, with studies indicating that boys are at greater risk for physical violence, whereas girls are more likely to report experiencing sexual abuse (Seedat, Van Niekerk, et al., 2009).

Internationally, studies on the intergenerational learning of violence are conflicting. While a number of studies lend support to to the intergenerational transmission of IPV, a meta-analysis of the association between witnessing or experiencing family violence in childhood and receiving or perpetrating violence in an adult heterosexual cohabiting or marital partnership found only a weak-to-moderate relationship. Furthermore, intergenerational transmission of violence may operate differently for men and women, with data indicating a stronger relationship between growing up in a violent home and victimization for females and perpetration for males (Stith, Rosen, Middleton, Busch, Lundeberg, & Carlton, 2000). Another recent review also suggested a consistent association between male perpetrators' childhood experiences of violence and the occurrence of IPV against women (Gil-Gonzalez, Vives-Cases, Ruiz, Carrasco-Portino, & Alvarez-Dardet, 2007).

In addition to sex differentials in risk for victimization and perpetration of violence, gender has also been linked to differences in violence exposure and incidence of psychiatric disorder (Seedat & Stein, 2000; Wong, Huang, DiGangi, Thompson, & Smith, 2008). However, little research has been dedicated to examining how gender differences in risk for IPV are associated with violence experienced across the life course and mental disorders, particularly those with an early onset. Furthermore, although the high prevalence of violence in South Africa has been well-documented, questions remain as to how the intergenerational and cyclical dynamics of violence in society pose a differential risk for IPV in males and females.

In response to this knowledge gap, our study sought to investigate gender differences in vulnerability to IPV in order to further understand the mechanisms by which multiple associated factors predict partner violence. Using data from a national sample of South African adults, we examined the prevalence of IPV and analyzed gender differences in risk according to (i) demographic factors; (ii) early life risk factors (including exposure to childhood physical abuse, witnessing parental violence, parental closeness, and early onset DSM-IV disorders); and (iii) adult risk factors (including experiencing the death of a child and episodes of DSM-IV disorders after age 20).

Methods

Sample and Procedure

This study used data from the South Africa Stress and Health Study (SASH) (Williams et al., 2004; Williams, Herman, Stein, Heeringa, Jackson, Moomal, et al., 2008), a nationally-representative psychiatric epidemiological survey of 4,351 adult South Africans (aged ≥ 18 years) living in households and hospital-based hostels, conducted between 2002 and 2004 as part of the World Health Organization's World Mental Health Survey Initiative. The SASH sample was selected using a three-stage clustered area probability sample design. The first stage involved the selection of stratified primary sample areas based on the 2001 South

African Census Enumeration Areas. The second stage involved the sampling of housing units within clusters selected within each Enumeration Area. The third stage involved the random selection of one adult respondent in each sampled housing unit. Sampling for the current study was determined by the following inclusion criteria: report of being currently married or in a cohabiting relationship and response to the survey questions about perpetration of physical violence against an intimate partner and victimization of physical violence by an intimate partner.

Data collection proceeded province by province with a cohort of 40–60 interviewers in each province. All SASH interviewers were trained in field research methods and the administration of the paper-and-pencil version of the Composite International Diagnostic Interview used by the World Mental Health Survey Initiative (Kessler & Ustun, 2004). Surveys were administered in person during pre-scheduled appointments in one of seven languages: English, Afrikaans, Zulu, Xhosa, Northern Sotho, Southern Sotho and Tswana. Field interviewers made up to three attempts to contact each respondent and the overall response rate was 85.5%. All recruitment, consent, and field procedures were approved by the Human Subjects Committees of the University of Michigan and Harvard Medical School. A single project assurance of compliance was obtained from the Medical University of South Africa (MEDUNSA), which was approved by the National Institute of Mental Health.

Measurement

For questions pertaining to IPV, respondents were asked to refer to their current or most recent marriage or cohabiting relationship. Respondents were then asked how often, when they had a disagreement, they pushed, grabbed, shoved, threw something, slapped, or hit their partner or spouse (often, sometimes, rarely, never). They were then asked how often their partner or spouse performed any of those acts (often, sometimes, rarely, never). Violence was defined as occurring often, sometimes, or rarely. Our data collection instrument assessed physical violence based on modified items from the internationally-validated Conflict-Tactics Scale (Straus, 2004; Straus, Hamby, Boney-McKoy, & Sugarman, 1996).

We examined three sets of risk factors: demographic characteristics, early life risk factors, and adult risk factors. Demographic variables included race, age, marital status, educational attainment, income, employment status, and location (rural vs. urban). Racial categories (black, coloured, Indian, white) were used in the analyses as a marker of historical social and economic opportunity in relation to health outcomes. Early life risk factors included exposure to childhood physical abuse, witnessing parental violence, closeness to primary male and female caregivers, and onset of DSM-IV disorders before age 20, including alcohol abuse (with or without dependence), intermittent explosive disorder, anxiety disorders (panic disorder, social phobia, agoraphobia, generalized anxiety disorder, post-traumatic stress disorder) and mood disorders (major depressive disorder, dysthymia). Adult risk factors included number of living and dead children and episodes of DSM-IV disorders after age 20. The presence of DSMIV disorders was assessed using the WHO Composite International Diagnostic Interview Version 3.0 (Kessler & Ustun, 2004).

Responses regarding IPV, experiencing childhood physical abuse, and witnessing parental violence were dichotomized as ever versus never. Closeness to primary caregivers was measured by the responses "very" or "somewhat" versus "not very" or "not at all."

Statistical Analysis

In order to account for the stratified multistage sampling design and adjust for non-response and selection bias, the sample was weighted to approximate the population distribution of South Africa on key demographic variables. A post-stratification weight was also used to make the sample distribution comparable to the population distribution in the 2001 South African census. The weighting and geographic clustering of the data were accounted for in data analyses using the Taylor series linearization method in the SUDAAN statistical package (Research Triangle Institute, 2008), which adjusts standard errors for the stratified design and sample weights.

Gender differences were analyzed using chi squared tests for all categorical values. The association between risk factors and partner violence was analyzed through the use of logistic regression. To progressively develop models that reflect their temporal ordering, the multivariate analyses measured risk factors in blocks. Block 1 adjusted for demographic variables. Block 2 adjusted for significant demographic variables and early life risk factors. Block 3 adjusted for significant demographic and adult risk factors. Unadjusted and adjusted odds ratios and 95% confidence intervals are presented here.

Results

Sample Characteristics

Table 1 provides distributions of demographic and risk factor characteristics. The cohort was comprised of 1,715 adults, the majority of whom were married (78%). Most were female (63%), black African (72%), urban-dwelling (57%), and between 35 and 49 years of age. The mean overall age was 42 (SD=13), with a mean age of 44 among males and 41 among females. Approximately one quarter of respondents had completed primary school and half had attained some level of secondary education. The majority of respondents were unemployed and, while women were more likely to be unemployed than men (71.6% vs. 44.8%), income distribution was relatively similar between genders.

Rates of early exposure to violence were high. Nearly 20% of the sample had been exposed to physical abuse during childhood and approximately 25% had witnessed violence between their parents or primary caregivers. Respondents reported higher degrees of closeness to their female caregivers than their male caregivers. The proportion of men and women reporting these early life risk factors were similar; however, there were statistically significant gender differences in onset of mental disorders before age 20. Women had higher rates of early life anxiety and mood disorders, while men had higher rates of early onset alcohol abuse/dependence. Though not statistically significant, men had higher rates of intermittent explosive disorder.

Similar gender differentials were found in reporting of mental disorders after age 20. Rates of alcohol abuse/dependence were nearly 20% among men, more than four times higher than rates among women. As in childhood, a higher proportion of men met criteria for adult episodes of intermittent explosive disorder, while more women than men met criteria for mood and anxiety disorders. The majority of respondents reported having living children. 17.5% of women compared to 12% of men reported ever experiencing the death of a child.

Prevalence of Intimate Partner Violence

As shown in Table 2, women were significantly more likely than men to report IPV victimization within their most recent marriage or intimate partnership (29.3% vs. 20.9%). 26.5% of men and 25.2% of women reported perpetrating violence against their most recent

spouse or partner. While a similar proportion of men and women reported male-to-female violence, more women than men reported female-to-male violence.

Risk Factors

Tables 3 and 4 present the unadjusted and adjusted odds ratios for risk factors for IPV as reported by men and women. Men who reported perpetrating IPV were more likely to be in a cohabiting relationship, versus being married, than men who did not report perpetration. In childhood, men reporting perpetration were 3.5 times as likely to have experienced physical abuse in the home and 4 times as likely to have witnessed violence between their parents or primary caregivers. Furthermore, these men were 7 times as likely to have experienced intermittent explosive disorder before age 20. In adulthood, men who perpetrated violence were twice as likely to report alcohol abuse/dependence and mood disorders and 5 times as likely to report intermittent explosive disorder after age 20. In the multivariate analysis, cohabitation, low income, childhood physical abuse, witnessing parental violence, early and adult onset mood disorders, and adult episodes of alcohol abuse/dependence remained significant.

Men who reported that their intimate partners were violent towards them were more likely to be younger in age and to earn less income than those who did not report IPV victimization. They were twice as likely to have experienced physical abuse in the home, 3.5 times as likely to have witnessed parental violence, and nearly 3 times as likely to report that they were not close to their primary female caregivers as a child. Low income, parental violence, and lack of closeness to a female caregiver remained significant in the multivariate analysis.

Women who reported that they had perpetrated violence against an intimate partner were more likely to be Indian and in a cohabiting relationship than women who did not report perpetration. Among early life risk factors, women reporting perpetration were 3 times as likely to have been exposed to childhood physical abuse and to have witnessed violence between their parents or primary caregivers. They were also more likely to report that they were not close to their primary female caregivers. Moreover, women reporting perpetration were nearly 7 times as likely to have early onset alcohol abuse/dependence. In adulthood, these women were 4 times as likely to have alcohol abuse/dependence and almost twice as likely to have an anxiety disorder. In the multivariate analysis, low educational attainment, childhood physical abuse, parental violence, and early and adult onset alcohol abuse/ dependence emerged as significant. In addition, the adjusted analysis revealed that women reporting perpetration were significantly less likely to have early onset intermittent explosive disorder than women who did not report perpetration.

Women who reported that they had been a victim of IPV were more likely to be Indian, younger in age, in a cohabiting relationship, and to have lower levels of educational and economic attainment than women who did not report victimization. These women were almost 4 times as likely to have experienced childhood physical abuse and to have witnessed violence between their parents or primary caregivers, and twice as likely to report that they were not close to their primary male caregivers as a child. They were also more likely to have an early onset anxiety disorder. Among adult risk factors, women reporting IPV victimization were nearly 5 times as likely to have alcohol abuse/dependence and intermittent explosive disorder and twice as likely to have an anxiety disorder after age 20. In the multivariate analysis, education, childhood physical abuse, parental violence, and adult episodes of alcohol abuse/dependence remained significant. Intermittent explosive disorder after age 20 was also found to be significantly related to IPV victimization among women.

Discussion

A number of key findings warrant discussion. Rates of IPV victimization were significantly higher among women than men (29.3% vs. 20.9%). Although data on IPV gender patterns are limited, this finding is consistent with estimates gathered from a smaller sample of South African adults (Wong et al., 2008) and population-based studies conducted in other southern African countries (Andersson, Ho-Foster, Mitchell, Scheepers, & Goldstein, 2007), which found higher exposures to IPV among women than men. It is worth noting that research on gender symmetry in IPV conducted in the US and other developed countries has found mixed, often contradictory results (Hamberger, 2005; Straus, 2006; Swan et al., 2008). Rates of physical violence reported by female respondents were similar to those previously found among South African women (Jewkes et al., 2002; Jewkes, Penn-Kekana, Levin, Ratsaka, & Schrieber, 2001).

Male respondents reported slightly higher rates of IPV perpetration than female respondents (26.5% vs. 25.2%). Rates of male perpetration roughly aligned with rates of victimization reported by women. However, while 25.2% of women reported behaving violently towards their male partners, only 20.9% of men indicated that they had been the victims of violence. One interpretation for this discrepancy is that men under-reported experiencing IPV due to social desirability bias. Researchers have observed that, although IPV is viewed as a serious social problem in South Africa, male control over women remains prominent and violence against female partners is commonly tolerated (Abrahams & Jewkes, 2005; Jewkes et al., 2002). In this social context, it has been posited that violence perpetrated by women against their male partners is deemed inappropriate or shameful. Similar reporting disparities have been found in national studies conducted in other countries and attributed to cultural response bias (O'Leary, Tintle, Bromet, & Gluzman, 2008).

The majority of research on IPV in South Africa has addressed violence against women, examining prevalence estimates of female victimization and male perpetration. In the current study, rates of IPV victimization among female respondents fell within the range of previous estimates (24.6% – 55%) (Dunkle et al., 2004; Jewkes et al., 2002), although male perpetration rates were slightly lower than previous estimates (31.8% – 42.3%) (Abrahams, Jewkes, Laubscher, & Hoffman, 2006; Dunkle et al., 2006). However, drawing direct comparisons between our results and prior findings is limited due to variations in research methodology, including differences in operational definitions of IPV, sample inclusion criteria, data collection methods, and barriers to disclosure. It is particularly likely that inconsistencies in defining violence and variations in time frames significantly influence discrepancies in prevalence estimates. For instance, had we also collected data on sexual and psychological abuse, it would have allowed for reporting on a wider range of violent behavior and our rates may have been higher.

Furthermore, assessing lifetime prevalence, as opposed to IPV within the current or most recent partnership, and including adults without a history of marriage or cohabitation may also have altered levels of reported violence. Other recent studies have found different gender patterns of violence among the South African population, which may be accounted for by methodological differences. For example, a recent analysis of life stress and mental disorders in the SASH study conducted by Seedat, Stein, et al. (2009) also found significantly higher levels of victimization among women than men (19% vs. 11.2%). However, contrary to our findings, that analysis revealed that women were also more likely than men to perpetrate violence (17% vs. 14.4%). However, that analysis used broader sampling criteria, including both currently and previously married/cohabiting adults. Another recent analysis conducted by Stein et al. (2009) also found that women were more likely to perpetrate than men (17.1% vs. 14.1%), however that sample also included single

as well as married and cohabiting adults. A meta-analytic review of sex differences in physical aggression between heterosexual partners found that single respondents showed significantly higher effect sizes in female perpetration than married or cohabiting respondents (Archer, 2000). The majority of studies included in the review were conducted in the United States, which precludes direct comparison with our findings. However, it is possible that in the South African context women who are not married or cohabiting are more likely to endorse perpetration of violence than women who are currently in a more formal married or cohabiting partnership. In sum, although the methodological differences discussed above impede direct comparison between studies, our findings support previous conclusions that IPV is a widespread phenomenon in South Africa.

Overall, IPV perpetration and victimization correlated more strongly with life experience variables, such as childhood exposure to physical violence and incidence of mental disorders, than demographic factors. This is consistent with previous findings (Jewkes, 2002; Stith, Smith, Penn, Ward, & Tritt, 2004). Among men, low income was significantly positively associated with perpetrating violence, which has been found in prior studies (Jewkes, 2002). However, our results indicated that men with lower income were also at greater risk for victimization, which to our knowledge is a relatively new finding. Researchers have postulated that a man's inability to meet the financial obligations associated with traditional masculinity may increase his probability of exercising power through the perpetration of IPV. It is possible that financial insecurity may also increase male vulnerability to violence. Another possible interpretation is that conflict over finances mediates the relationship between low income among men and an increased probability of the occurrence of violence. Research aimed at uncovering the social and interpersonal factors that mediate poverty and IPV would likely provide more insight into the dynamics of risk for victimization and perpetration.

Among female respondents, low educational attainment was significantly positively associated with IPV victimization. This association has also been observed elsewhere (Jewkes, 2002), which strongly suggests that future violence-prevention programs should aim to increase levels of education and discourage early partnering among girls and female adolescents.

Early exposure to violence was among the strongest predictors of IPV. Witnessing parental violence was associated with perpetration and victimization among all respondents. A quarter of men and women had witnessed violence between their parents or primary caregivers, a prevalence rate that is similar to estimates in previous South African studies (Abrahams & Jewkes, 2005). Exposure to physical abuse in childhood was also a significant risk factor for IPV, associated with perpetration among all respondents and with victimization among women. These results are supported by a substantial body of international research suggesting that there is a positive relationship between childhood maltreatment, witnessing interparental violence, and intimate partner abuse later in life (Abrahams & Jewkes, 2005; Bensley, Van Eenwyk, & Simmons, 2003; Campbell, Greeson, Bybee, & Raja, 2008; Fang & Corso, 2007; Gratz, Paulson, Jakupcak, & Tull, 2009; Jeyaseelan, 2004). Studies have found that men and women with a history of child abuse or witnessing IPV are at greater risk for perpetrating and experiencing IPV as an adult (Bensley et al., 2008; Gratz et al., 2009). Although the mechanisms underlying this relationship are unclear, some researchers have postulated that children exposed to violence in the home learn to view violence as an acceptable means of conflict resolution (Abrahams & Jewkes, 2005) and a normative aspect of intimate relationships (Jewkes et al., 2001). Furthermore, domestic violence in childhood may serve as a model for abuse in adulthood by fomenting feelings of low self-esteem or powerlessness, insecure attachment, or post-traumatic stress, which may in turn prevent individuals from forming healthy relationships (Bensley et al.,

2003). Given the high prevalence of childhood exposure to domestic violence in South Africa, our findings indicate that interventions designed to reduce IPV among adults would also serve to mitigate the impact of IPV on future generations.

Although exposure to childhood violence was significantly positively associated with IPV among both male and female respondents, our study also found gender differences in certain early life risk factors, with childhood physical abuse associated with victimization among women and lack of closeness to a primary female caregiver associated with victimization among men. These results suggest that intergenerational dynamics of intimacy and violence pose a differential risk for IPV in males and females. Future violence prevention programs should consider these different sources of vulnerability and provide violence interventions for girls and promote positive female role models for boys.

Early onset mental disorders had a weaker correlation with IPV than early exposure to violence. Among those included in the study, early onset mood disorders and alcohol abuse/ dependence were predictive of perpetration among men and women respectively. Few studies have examined the relationship between early onset psychiatric disorders and risk of IPV in adulthood. However, a similar study conducted in the Ukraine also found that early onset alcohol abuse/dependence correlated with an increased risk of perpetration in women (O'Leary et al., 2008). Our results also revealed an association between early onset intermittent explosive disorder and a decreased risk of perpetration among women, which contradicts previous findings. Only 10 of the 1,074 women in the analysis reported early onset intermittent explosive disorder, which may account for this unusual result.

Among adult risk factors, episodes of mental disorders after age 20 were found to be the most significant variables related to IPV, the most consistent being alcohol/abuse dependence. It has been well-documented that alcohol abuse is a significant risk factor for violence; researchers have thus argued that any comprehensive IPV intervention must also address alcohol abuse (Jewkes, 2002; O'Leary et al., 2008). A recent meta-analytic review summarized data from 85 studies on primarily male-to-female intimate partner abuse and calculated effect sizes for perpetration and victimization risk factors (Stith et al., 2004). Alcohol use among men emerged with a moderate effect size for perpetration and female alcohol abuse was found to be a small risk factor for victimization. Male alcohol abuse has been strongly linked with domestic violence in South Africa (Department of Health, 1998; Jewkes et al., 2002). In this study, a large proportion of male respondents reported adult onset alcohol abuse/dependence (18.8%), more than 4 times the rate of female respondents (4.2%). Alcohol abuse/dependence after age 20 was correlated with perpetration among men and perpetration and victimization among women. Given our study's cross-sectional design, it is not possible to determine whether alcohol abuse/dependence is a risk factor for or a result of IPV. However, although it is difficult to establish a causal relationship between these variables, our findings support previous assertions that intervening in alcohol abuse problems should be a crucial component of future violence-prevention programming.

Although more women than men reported adult episodes of mood (10% vs. 7.2%) and anxiety (15.8% vs. 9.2%) disorders, among those, only male reports of mood disorders were significantly predictive of IPV perpetration. Previous studies have found mood disorders, particularly depression, to be among the most highly prevalent mental disorders associated with IPV. However, this finding has primarily been tested among female victims of violence (Campbell, 2002). Furthermore, depression has been most commonly viewed as a sequela of IPV, not a risk factor. A study recently conducted among adult South Africans in Cape Town found that women who had been recently abused were more likely to suffer from depression than men who had been recently abused (Wong et al., 2008). The same study did not measure risks associated with perpetration. These methodological differences limit

comparison between current and previous estimates. In light of these discrepant findings and the unique association that emerged from our study between early and adult onset of mood disorders and increased risk of perpetration among men, further research is needed to better understand the mental health risk outcomes and predictors associated with IPV and their gender differentials.

Several limitations in this analyses warrant mention. Our study did not collect data on the severity, frequency, or context in which IPV took place. This is a potentially salient omission, as some research from the United States indicates that although men and women self-report perpetrating IPV at similar rates, there are significant gender differences in violent behaviors and motivations. Studies have found, for example, that women are more likely than men to commit violence in self-defense and that women's violence is less severe than male violence (Archer, 2000; Swan et al., 2008). These findings suggest that there are important differences in the types of IPV committed by men and women, which may be tied to differentials in risk factors and outcomes. Beyond the limitations pertaining to violence assessment and sample inclusion criteria mentioned earlier, our findings are also limited by a lack of data on the timing of IPV and violence exposures in childhood, information that may help target future IPV preventive interventions. Furthermore, our study did not measure violence exposures in adolescence. Additional limitations include temporal issues brought about by the cross-sectional design, and possible retrospective and social desirability biases, which may have contributed to underreporting of violence. However, measuring exposures during childhood and adulthood helped mitigate the potential for confounding that may have been introduced by ill-defined temporality. In addition, the data collection instrument that was used assessed specific forms of physical violence based on modified items from the internationally-validated Conflict-Tactics Scale in order to decrease such biases (Straus, 2004; Straus et al., 1996). Finally, due to the cross-sectional nature of the study, it is not possible to draw causal inferences from associations. Furthermore, the directional relationship between variables, whether factors such as psychiatric disorders are predictors or results of IPV, cannot be ascertained.

The current findings suggest that violence is a widespread and serious public health problem in South Africa, affecting both women and men in their intimate partnerships. Our results further indicate that there are gender differences in quantity and type of risk for IPV, which should inform the design of future violence-prevention programs and policies. Women were significantly more likely to experience violence by a male partner; thus, greater efforts should be made to reduce female victimization and male perpetration, based on individual associated risk factors. Our findings also indicate, however, that attention should be paid to male victims and that further research is needed to elucidate the potentially bidirectional dynamics of violence within partnerships. Gender-specific interventions that are tailored to the needs of perpetrators and victims are more likely to create behavior change than programs based solely on models of male violence against women. Specifically, interventions should aim to reduce poverty among men and increase educational attainment and discourage early partnering among women. Addressing alcohol abuse/dependence should be a crucial component of any violence-prevention program for both genders, as should screening for other mental disorders. Furthermore, given that exposure to violence in childhood is strongly predictive of IPV in adulthood, the trajectory of violence across the life course should be addressed with targeted, developmentally-timed interventions. Our findings suggest that multiple associated factors are predictive of partner violence. Future investigations should be dedicated to understanding the complex mechanisms underlying these associations, which the scope of our study was unable to address. For example, further research is needed to examine the pathways between childhood exposures and adult behaviors, looking at the interpersonal, social, structural, and environmental factors that establish and reinforce violence as normative. Such knowledge may be instructive for the

design of early interventions. Finally, given discrepancies in existing prevalence estimates, it is important that researchers maintain consistent definitions of IPV and weigh methodological factors when drawing comparisons across studies.

Acknowledgments

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Table 1

Demographic and Risk Factor Characteristics of Married/Cohabiting Men and Women

	Total (*N*=1,715)	Men (*N*=641)	Women (*N*=1,074)	Test Statistic
Demographic variables				
Race				
Black	1231	69.7 (3.3)	71.9 (2.4)	1.2 (.3032)
Coloured	235	12.8 (1.2)	10.4 (1.2)	
White	154	13.4 (3.1)	12.0 (2.0)	
Indian	95	4.1 (0.9)	5.7 (0.8)	
Age				
18–34	575	26.1 (1.5)	34.2 (1.6)	4.2 (.0087)
35–49	676	38.9 (2.4)	39.2 (1.5)	
50–64	365	27.6 (1.8)	21.6 (1.2)	
65+	99	7.3 (1.2)	5.1 (0.7)	
Marital status				
Married	1333	77.6 (2.5)	79.2 (1.5)	0.4 (.5561)
Cohabiting	382	22.4 (2.5)	20.8 (1.5)	
Education				
None	159	9.2 (1.4)	7.7 (1.2)	3.1 (.0216)
Grade 1–7	414	20.3 (2.6)	24.4 (1.4)	
Grade 8–11	605	33.1 (3.1)	38.8 (1.8)	
Grade 12	274	18.3 (2.2)	14.6 (1.3)	
Grade 13+	263	19.1 (1.7)	14.5 (1.9)	
Income				
0	209	10.8 (1.8)	12.3 (1.5)	1.0 (.4258)
1–500	388	20.9 (2.8)	22.4 (1.4)	
1501–16500	424	26.7 (2.4)	21.7 (1.4)	
16501–97500	371	21.7 (2.1)	23.3 (1.8)	
97501+	323	19.9 (1.6)	20.3 (1.5)	
Employment				
Unemployed	1079	44.8 (2.8)	71.6 (2.1)	44.9 (.0000)
Employed	636	55.2 (2.8)	28.4 (2.1)	
Location				
Rural	738	34.5 (2.4)	41.7 (1.9)	7.2 (.0096)
Urban	977	65.5 (2.4)	58.3 (1.9)	
Early life risk factors				
Childhood violence	323	18.4 (1.8)	17.6 (1.4)	0.1 (.7237)
Parental violence	433	24.4 (2.2)	25.0 (1.8)	0.0 (.8466)
Not close to PFC	89	6.0 (1.1)	5.7 (0.9)	0.1 (.8072)
Not close to PMC	162	9.9 (1.6)	9.0 (0.8)	0.3 (.5954)
Disorders before age 20				
Alcohol abuse/dependence	32	4.4 (1.4)	0.8 (0.3)	6.3 (.0147)

	Total (*N*=1,715)	Men (*N*=641)	Women (*N*=1,074)	Test Statistic
IED	20	2.4 (0.9)	1.1 (0.4)	2.2 (.1466)
Anxiety Disorder	125	4.2 (1.1)	9.1 (1.0)	16.1 (.0002)
Mood Disorder	53	1.8 (0.6)	4.1 (0.9)	4.7 (.0348)
Adult risk factors				
Living children	1543	89.8 (1.5)	91.1 (1.0)	0.6 (.4510)
Dead children	263	12.0 (2.3)	17.5 (1.4)	4.1 (.0470)
Disorders since age 20				
Alcohol abuse/dependence	154	18.8 (2.3)	4.2 (0.8)	31.5 (.0000)
IED	39	3.8 (1.3)	2.1 (0.5)	1.5 (.2279)
Anxiety Disorder	237	9.2 (1.3)	15.8 (1.1)	15.3 (.0002)
Mood Disorder	165	7.2 (1.0)	10.0 (1.2)	2.6 (.1120)

Values are percents with standard errors in parentheses

Table 2

Rates of Partner Violence Reported by Married/Cohabiting Men and Women

		Men	**Women**	**Test statistic**
Perpetrator				
No	1262	73.5 (2.6)	74.8 (1.8)	0.2 (.6581)
Yes	453	26.5 (2.6)	25.2 (1.8)	
Victim				
No	1257	79.1 (1.8)	70.7 (1.6)	14.3 (.0004)
Yes	458	20.9 (1.8)	29.3 (1.6)	

Values are percents with standard errors in parentheses

Table 3

Bivariate and Adjusted Odds Ratios (95% CI) for Partner Violence Reported by Men

	Perpetrator		Victim	
	OR	AOR	OR	AOR
Demographic variables				
Race				
Black	1.00	1.00	1.00	1.00
Coloured	0.95 (0.6–1.6)	1.05 (0.6–1.9)	0.91 (0.5–1.8)	1.29 (0.6–2.8)
White	1.00 (0.3–2.9)	2.29 (0.6–9.5)	0.56 (0.3–1.1)	1.00 (0.3–3.1)
Indian	1.36 (0.5–3.7)	1.62 (0.5–5.5)	1.41 (0.7–3.0)	1.67 (0.7–4.1)
Age				
18–34	1.36 (0.6–3.3)	0.79 (0.3–2.4)	3.18 (1.2–8.7)	1.92 (0.5–7.1)
35–49	0.80 (0.3–2.0)	0.48 (0.2–1.2)	2.10 (0.7–6.2)	1.57 (0.5–5.1)
50–64	0.92 (0.3–2.4)	0.51 (0.2–1.4)	1.75 (0.6–5.3)	1.12 (0.3–3.9)
65+	1.00	1.00	1.00[*]	1.00
Marital status				
Married	1.00	1.00	1.00	1.00
Cohabiting	1.75 (1.0–2.9)[*]	1.93 (1.0–3.6)[*]	1.60 (1.0–2.6)	1.14 (0.7–2.0)
Education				
None	2.33 (1.0–5.4)	2.35 (0.7–7.9)	1.85 (0.7–5.1)	1.66 (0.5–5.6)
Grade 1–7	1.85 (0.9–3.6)	1.98 (0.7–5.5)	1.53 (0.8–2.9)	1.16 (0.5–2.5)
Grade 8–11	1.91 (0.9–3.9)	2.55 (0.9–7.5)	1.40 (0.7–2.6)	1.40 (0.7–2.9)
Grade 12	2.74 (1.3–5.8)	2.43 (0.9–6.3)	2.08 (0.9–4.8)	1.76 (0.7–4.4)
Grade 13+	1.00	1.00	1.00	1.00
Income				
0	2.48 (0.8–7.5)	2.61 (0.9–7.8)	3.85 (1.7–8.7)	3.93 (1.4–11)[**]
1–500	2.51 (1.2–5.4)	2.46 (1.1–5.4)[*]	3.93 (2.1–7.5)	3.88 (1.6–9.6)[**]
1501–16500	2.60 (1.2–5.8)	2.80 (1.2–6.4)[*]	2.63 (1.2–5.8)	2.54 (1.0–6.8)
16501–97500	2.11(1.0–4.3)	2.01 (1.0–4.1)	2.81 (1.1–6.9)	2.80 (1.0–8.0)[*]
97501+	1.00	1.00	1.00[***]	1.00
Employment				
Unemployed	1.00 (0.6–1.7)	0.84 (0.5–1.5)	0.78 (0.5–1.3)	0.70 (0.4–1.2)
Employed	1.00	1.00	1.00	1.00
Location				
Rural	1.00	1.00	1.00	1.00
Urban	0.76 (0.4–1.3)	0.85 (0.5–1.6)	0.82 (0.5–1.2)	0.95 (0.5–1.7)
Early life risk factors				
Childhood violence	3.53 (2.3–5.4)[***]	2.19 (1.1–4.3)[*]	2.09 (1.2–3.5)[**]	0.90 (0.5–1.7)
Parental violence	4.20 (2.6–6.9)[***]	3.23 (1.8–5.8)[***]	3.57 (2.1–6.2)[***]	3.64 (1.8–7.3)[***]
Not close to PFC	1.26 (0.6–2.8)	0.80 (0.3–1.9)	2.74 (1.3–6.0)[**]	2.47 (1.0–6.0)[*]
Not close to PMC	1.58 (0.8–3.1)	1.49 (0.7–3.1)	1.44 (0.7–3.0)	1.07 (0.4–2.6)

	Perpetrator		**Victim**	
	OR	**AOR**	**OR**	**AOR**
Disorders before age 20				
Alcohol abuse/dependence	1.61 (0.6–4.2)	0.54 (0.2–1.9)	1.21 (0.3–4.5)	0.54 (0.1–2.3)
IED	7.06 (1.4–35.9)[*]	2.06 (0.2–23)	3.04 (0.6–16.0)	3.74 (0.5–31)
Anxiety Disorder	0.79 (0.3–2.4)	0.77 (0.2–3.7)	1.37 (0.5–3.9)	2.08 (0.5–8.4)
Mood Disorder	0.60 (0.1–2.8)	0.27 (0.1–1.0)[*]	0.82 (0.2–4.0)	0.35 (0.1–1.3)
Adult risk factors				
Living children	0.91 (0.5–1.7)	1.15 (0.5–2.7)	0.73 (0.4–1.5)	0.89 (0.4–2.2)
Dead children	1.37 (0.5–3.5)	1.32 (0.5–3.4)	0.98 (0.5–1.9)	1.06 (0.5–2.1)
Disorders since age 20				
Alcohol abuse/dependence	2.31 (1.5–3.6)[***]	1.88 (1.1–3.2)[*]	1.46 (0.9–2.5)	1.10 (0.6–2.1)
IED	5.46 (2.3–12.9)[***]	3.55 (0.6–21)	1.68 (0.6–5.1)	0.59 (0.1–2.5)
Anxiety Disorder	0.82 (0.4–1.9)	0.50 (0.2–1.6)	0.89 (0.4–1.9)	0.54 (0.2–1.9)
Mood Disorder	2.30 (1.2–4.3)[**]	2.91 (1.5–5.7)[**]	1.73 (0.8–4.0)	2.13 (0.9–5.2)

[*] (p-value ≤ .05),

[**] (p-value ≤ .01),

[***] (p-value ≤ .001)

Table 4

Bivariate and Adjusted Odds Ratios (95% CI) for Partner Violence Reported by Women

	Perpetrator		Victim	
	OR	AOR	OR	AOR
Demographic variables				
Race				
Black	1.00	1.00	1.00	1.00
Coloured	1.04 (0.7–1.6)	1.40 (0.8–2.3)	0.95 (0.6–1.5)	1.23 (0.8–1.9)
White	0.37 (0.2–0.8)	0.56 (0.2–1.3)	0.10 (0.0–0.3)	0.11 (0.0–0.4)***
Indian	1.22 (0.6–2.5)*	1.83 (0.8–4.0)	0.90 (0.4–1.8)***	1.34 (0.6–3.2)
Age				
18–34	2.21 (0.9–5.4)	1.77 (0.7–4.6)	2.32 (1.1–5.0)	1.94 (0.7–5.1)
35–49	1.90 (0.7–5.0)	1.52 (0.6–4.0)	1.82 (0.8–4.2)	1.59 (0.6–4.3)
50–64	1.70 (0.6–4.9)	1.34 (0.5–3.8)	1.42 (0.5–3.9)	1.16 (0.4–3.5)
65+	1.00	1.00	1.00**	1.00
Marital status				
Married	1.00	1.00	1.00	1.00
Cohabiting	1.50 (1.1–2.1)*	1.19 (0.8–1.8)	1.81 (1.2–2.8)**	1.17 (0.7–1.9)
Education				
None	2.46 (1.1–5.5)	2.62 (1.1–6.2)*	2.51 (1.2–5.5)	2.04 (0.8–4.9)
Grade 1–7	1.96 (1.0–3.7)	1.89 (1.0–3.6)*	2.34 (1.2–4.4)	1.90 (1.0–3.7)*
Grade 8–11	2.15 (1.2–3.7)	2.17 (1.3–3.5)**	2.33 (1.3–4.1)	1.78 (1.0–3.3)
Grade 12	1.75 (1.0–3.1)	1.63 (1.0–2.8)	1.41 (0.7–2.7)	1.02 (0.5–2.0)
Grade 13+	1.00	1.00	1.00**	1.00
Income				
0	1.92 (1.0–3.7)	1.43 (0.7–2.9)	2.01 (1.2–3.4)	1.31 (0.7–2.4)
1–500	1.44 (0.8–2.5)	1.07 (0.6–1.9)	1.93 (1.1–3.3)	1.34 (0.8–2.3)
1501–16500	1.16 (0.7–1.9)	0.84 (0.5–1.4)	1.18 (0.7–2.1)	0.85 (0.5–1.5)
16501–97500	1.05 (0.7–1.6)	0.94 (0.6–1.5)	0.91 (0.6–1.5)	0.79 (0.5–1.4)
97501+	1.00	1.00	1.00**	1.00
Employment				
Unemployed	1.08 (0.8–1.5)	0.74 (0.5–1.2)	1.26 (0.9–1.7)	0.90 (0.6–1.3)
Employed	1.00	1.00	1.00	1.00
Location				
Rural	1.00	1.00	1.00	1.00
Urban	0.69 (0.5–1.0)	0.67 (0.4–1.0)	0.84 (0.6–1.1)	1.06 (0.8–1.4)
Early life risk factors				
Childhood violence	3.08 (2.1–4.5)***	1.56 (1.0–2.5)*	3.96 (2.6–6.0)***	2.16 (1.4–3.4)***
Parental violence	3.34 (2.2–5.2)***	2.46 (1.4–4.2)***	3.82 (2.7–5.5)***	2.43 (1.6–3.6)***
Not close to PFC	1.94 (1.0–3.8)*	1.41 (0.6–3.1)	1.34 (0.7–2.5)	1.00 (0.5–2.1)

	Perpetrator		Victim	
	OR	AOR	OR	AOR
Not close to PMC	1.70 (0.9–3.1)	1.03 (0.5–2.1)	2.49 (1.5–4.1)[***]	1.70 (1.0–3.0)
Disorders before age 20				
Alcohol abuse/dependence	6.96 (1.2–40.7)[*]	5.97 (1.0–34)[*]	3.59 (0.7–18.0)	2.49 (0.3–21)
IED	0.32 (0.1–1.6)	0.08 (0.0–0.7)[*]	2.61 (0.6–10.9)	0.80 (0.1–4.8)
Anxiety Disorder	1.36 (0.8–2.2)	0.79 (0.4–1.4)	1.83 (1.1–3.0)[*]	1.03 (0.5–1.9)
Mood Disorder	1.26 (0.6–2.7)	1.20 (0.5–2.8)	1.38 (0.6–3.0)	1.47 (0.7–3.3)
Adult risk factors				
Living children	1.36 (0.7–2.5)	1.50 (0.7–3.1)	0.94 (0.6–1.5)	0.91 (0.5–1.7)
Dead children	0.89 (0.6–1.3)	0.87 (0.5–1.4)	1.03 (0.7–1.4)	1.03 (0.7–1.5)
Disorders since age 20				
Alcohol abuse/dependence	4.35 (2.2–8.7)[***]	3.37 (1.7–6.8)[***]	4.99 (2.4–10.4)[***]	4.06 (1.6–10)[**]
IED	1.44 (0.5–4.1)	1.78 (0.6–5.3)	4.89 (1.9–12.8)[***]	4.03 (1.5–11)[**]
Anxiety Disorder	1.81 (1.3–2.6)[**]	1.46 (0.9–2.3)	2.19 (1.4–3.4)[***]	1.44 (0.8–2.6)
Mood Disorder	1.33 (0.9–2.0)	1.07 (0.6–1.8)	1.34 (0.9–2.0)	0.81 (0.5–1.4)

[*] (p-value ≤ .05),

[**] (p-value ≤ .01),

[***] (p-value ≤ .001)

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Intimate partner violence, health behaviours, and chronic physical illness among South African women

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Abstract

Objectives—An association between intimate partner violence and adverse physical health outcomes and health-risk behaviours among women has been established, most scientific research having been conducted in the USA and other developed countries. There have been few studies in developing countries, including South Africa, which has one of the highest rates of intimate partner violence in the world. We therefore sought to study the association between physical intimate partner violence and physical health outcomes and behaviours among South African women.

Methods—Using data from the cross-sectional, nationally representative South African Stress and Health Study, we assessed exposure to intimate partner violence, health-risk behaviours, health-seeking behaviours and chronic physical illness among a sample of 1 229 married and cohabiting women.

Results—The prevalence of reported violence was 31%. This correlated with several health-risk behaviours (smoking, alcohol consumption, and use of non-medical sedatives, analgesics and cannabis) and health-seeking behaviours (recent visits to a medical doctor or healer). Intimate partner violence was not significantly associated with chronic physical illness, although rates of headache, heart attack and high blood pressure reached near-significance.

Conclusions—Partner violence against women is a significant public health problem in South Africa, associated with health-risk behaviours and increased use of medical services. Public health programmes should incorporate interventions to mitigate the impact of violence on victims and reduce the risk of negative behavioural outcomes. Further investigation of the pathways between violence exposure and health behaviours is needed to inform the design of such programming.

Intimate partner violence (IPV) is a global public health problem that is increasingly cited as a risk factor for adverse physical and behavioural health outcomes among women. Characterised by behaviour within an intimate relationship that causes physical, psychological or sexual harm to a partner,[1] IPV has reached globally epidemic proportions.

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The lifetime prevalence of experiencing IPV is estimated to be between 15% and 71% among women worldwide.[2]

Apart from an increased risk of injury and death, women who experience IPV have an increased probability of developing short- and long-term morbidity and adopting negative health behaviours. For example, in the USA abused women are more likely than non-abused women to report adverse physical health outcomes such as joint disease, asthma, heart disease, back problems, arthritis, sexually transmitted infections, vaginal infections, digestive problems and poor overall health.[3–5] Women with a history of IPV victimisation report increased rates of health risk behaviours, such as HIV risk factors, smoking, and alcohol and drug use.[4,6–8] Estimates of abused women's use of health care services is conflicting; some found a nearly equivalent probability of use[8] and others a decreased probability[4] compared with non-abused women.

A study on domestic violence in nine developing countries[9] also found increased rates of injury and adverse health outcomes among abused women. A 2008 World Health Organization (WHO) multi-country study on IPV and women's physical and mental health found a significant association between lifetime experience of IPV and self-reported poor health and specific health problems.[10] Most countries included in these studies were low and middle income. However, studies in North America dominate the research on the health effects of partner violence, many of which rely on clinical samples. This research needs to be expanded to include population-based samples in developing countries.

In South Africa, which has among the highest rates of IPV in the world, violence has an extremely deleterious effect on women's health. Although prevalence estimates of IPV vary, rates are consistently high. A nationally representative study found a 19% lifetime prevalence of victimisation among female respondents,[11] and a study on physical violence among South African men found that 27.5% reported perpetration in their current or most recent partnership.[12] Earlier studies report similar estimates.[13–17] IPV is a leading cause of morbidity and mortality for South African women. Over half of female homicide victims are killed by their intimate partners.[18] Women with violent partners are at increased risk of HIV infection[14,15] and health risk behaviours such as alcohol consumption.[16]

We sought to address the dearth of scientific data on the health effects of IPV among women in developing countries and to elucidate the health consequences of IPV in a setting with an unprecedented burden of morbidity and mortality due to interpersonal violence. Using data from a nationally representative, cross-sectional study, we investigated the association between exposure to IPV and health-risk behaviours, health-seeking behaviours, and chronic physical illness among a sample of 1 229 married and cohabiting South African women.

Methods

Sample and procedure

We used data from the South African Stress and Health (SASH) study,[19,20] a nationally representative psychiatric epidemiological survey of 4 351 adult South Africans (aged ≥18 years) living in households and hospital-based hostels, conducted between 2002 and 2004 as part of the WHO's World Mental Health Survey Initiative. The SASH sample was selected using a three-stage clustered area probability sample design: the first stage selected stratified primary sample areas based on the 2001 South African Census Enumeration Areas; the second sampled housing units within clusters selected within each Enumeration Area; and the third randomly selected one adult respondent in each sampled housing unit. Inclusion criteria determining sampling for this study were report of being currently married or in a

cohabiting relationship, and response to the survey questions about health-risk behaviours, health-seeking behaviours, and chronic physical illness.

Data collection proceeded province by province with a cohort of 40 – 60 interviewers in each province. All SASH interviewers were trained in field research methods and the administration of the paper-and-pencil version of the Composite International Diagnostic Interview used by the World Mental Health Survey Initiative.[21] Surveys were administered in person during pre-scheduled appointments in one of seven languages: English, Afrikaans, Zulu, Xhosa, Northern Sotho, Southern Sotho and Tswana. Field interviewers made up to three attempts to contact each respondent, and the overall response rate was 85.5%. All recruitment, consent and field procedures were approved by the Human Subjects Committees of the University of Michigan and Harvard Medical School. A single project assurance of compliance was obtained from the Medical University of South Africa (MEDUNSA), which was approved by the National Institute of Mental Health.

Measurement

Respondents were asked to refer to their current or most recent marriage or cohabiting relationship and how often, when they had a disagreement, their partner or spouse pushed, grabbed, shoved, threw something, slapped, or hit them (often, sometimes, rarely, never). Violence was defined as occurring often, sometimes, or rarely.

We examined three sets of risk factors: health-risk behaviours, health-seeking behaviours, and chronic physical illness. Analyses included current, past-year and lifetime measurements. Health-risk behaviours included current and lifetime tobacco use, current regular use (defined as drinking at least 12 drinks per year) and lifetime use of alcohol, past-year and lifetime non-medical use of medications (sedatives, stimulants, analgesics), and current and lifetime use of illicit drugs. Health-seeking behaviours included seeking stability in sexual relationships, taking precautions in sexual intercourse to prevent HIV/AIDS, and recent and lifetime AIDS tests. Remaining measures of health-seeking pertained to service use, specifically visits to a medical doctor, traditional healer or other health care professional in the past 12 months.

Twenty indicators of chronic physical illness were analysed. Respondents were asked whether they had experienced arthritis, back problems, headaches, chronic pain, allergies, stroke or heart attack in the past 12 months, and whether they had ever had heart disease, high blood pressure, asthma, tuberculosis, lung disease, malaria, diabetes, ulcer, thyroid disease, any neurological problem, HIV/AIDS, epilepsy or cancer.

Statistical analysis

Statistical analyses used the Taylor linearisation method, assuming a with-replacement design, from the SUDAAN statistical package, version 10.0.[22] Prevalence of health outcomes and behaviours was calculated and stratified by IPV experience. Logistic regression models included age, race, cohabitation, education, income, employment status and geographical location (rural v. urban) as covariates. Predictors were demographic factors and IPV victimisation, included in all the models without a stepwise regression. Dependent variables included health-risk behaviours, health-seeking behaviours and chronic physical illness, entered one at a time and adjusted for covariates, resulting in one logistic model for each outcome. Statistical significance was established using the Wald chi-square test with $p<0.05$.

Results

Table I presents the results of adjusted logistic models predicting health-risk behaviours, health-seeking behaviours and physical illness. The sample comprised 1 229 women; 31% reported experiencing IPV in their most recent marriage or cohabiting relationship. IPV victimisation significantly positively correlated with several health-risk behaviours. Compared with non-abused women, abused women were 1.7 times more likely to report ever smoking, 1.9 times more likely to report current smoking, nearly twice as likely to report ever drinking, and approximately 2.4 times more likely to report regular drinking and non-medical use of sedatives. IPV nearly doubled the likelihood of lifetime and past-year non-medical use of analgesics. Abused women were 3.8 times more likely than non-abused women to report ever using cannabis and 48 times more likely to report using cannabis in the past 12 months. Although originally included, use of cocaine was dropped as an outcome as its use was not reported by IPV victims.

Among health-seeking behaviours, IPV correlated with any past-year visits to a medical doctor and traditional healer. Compared with non-abused women, women reporting IPV were 1.5 times more likely to have visited a doctor and nearly twice as likely to have visited a traditional healer in the past 12 months. Abused women were slightly more likely than non-abused women to report seeking stability in sexual relationships, taking precautions in sexual intercourse to prevent HIV/AIDS, and recent and lifetime AIDS tests, but these were not statistically significant. IPV was not significantly associated with any chronic physical illnesses, although rates of headache (p=0.069), heart attack (p=0.051) and high blood pressure (p=0.080) reached near-significance.

Discussion

Consistent with previous research, women with a history of IPV had a significantly higher probability than non-abused women of exhibiting health-risk behaviours, including smoking, alcohol and cannabis use, and non-medical use of sedatives and analgesics. SASH studies found a significant association between domestic violence perpetration and all categories of psychiatric disorders, including substance use disorders.[23] In South Africa, alcohol consumption in particular is significantly associated with IPV.[16] In the USA female victims of IPV report higher rates of alcohol abuse/dependence, smoking and drug abuse than non-victims.[4,6–8] Alcohol and substance abuse is a well-documented risk factor for violence; any comprehensive IPV intervention must therefore address these behaviours.[1] Our findings raise the possibility of the reverse association, that IPV may be a risk factor for substance abuse. Although causality is difficult to establish, research has suggested that IPV precedes alcohol and substance abuse in most cases, supported by evidence that alcohol and substance use are coping mechanisms for violent or stressful situations.[8,24] These findings indicate that the relationship between IPV and risky health behaviours warrants further investigation and that substance abuse intervention should be a key component of violence prevention programmes.

Among health-seeking behaviours, abused women were more likely than non-abused women to report past-year visits to a medical doctor or traditional healer, supporting findings that IPV victims use a disproportionate share of health care services.[5,24] Although we could not assess the specific reasons for women seeking health care, our findings, supported by prior research in this area,[25] indicate that health care settings may serve as opportune contexts in which to screen and counsel women for IPV. These results introduce the possibility that behaviour may mediate the relationship between IPV and risk of physical illness. Further research is needed to determine whether, independent of violence exposure,

health-risk behaviour may increase the probability of illness and health-seeking behaviour may decrease it.

We did not find a strong correlation between experiencing IPV and chronic physical illness, contrary to previous findings indicating that battered women have significantly higher rates of self-reported chronic health problems. However, several limitations preclude direct comparison of results. Variations in research methodology, including differences in operational definitions of IPV, sample inclusion criteria, data collection methods and barriers to disclosure, may account for the differences between results. It is particularly likely that inconsistencies in defining violence and variations in time frames significantly influence discrepancies in prevalence estimates. For instance, the vast majority of studies reviewed defined IPV as including sexual or psychological abuse in addition to physical violence. Had we also collected data on sexual and psychological abuse, it would have allowed for reporting on a wider range of violent behaviour, which may have increased the association with physical illness. Furthermore, assessing lifetime prevalence as many prior studies have done, as opposed to IPV within the current or most recent partnership, and including adults without a history of marriage or cohabitation can also alter levels of reported illness. Finally, most studies on this topic have been conducted in the USA and countries other than South Africa, and many have sampled clinical populations, which tend to have higher rates of illness than population-based samples.

Beyond issues pertaining to violence assessment and sample inclusion criteria, we were also unable to collect data on the dynamics of violence exposure, specifically its timing, frequency, context and severity. Self-report may have affected our rates of physical illness if women were unaware of health problems or misunderstood their diagnoses, or if health problems were undiagnosed. Knowledge of specific health conditions is also a function of access to and quality of medical care. As some of our respondents faced challenges in this regard, as is common in South Africa, it would affect their ability to report on specific health conditions. Furthermore, given the diversity of the sample population, language and/or cultural issues pertaining to terminology used for common physical illnesses may have influenced our results. The survey's brief section on physical health may have contributed to underestimating the true association between IPV and poor health outcomes, as repeated questions tend to reveal higher prevalence rates for abuse, perhaps making disclosure easier for the respondent. Data on the health behaviours of male partners were not included; studies have shown that a significant proportion of men who perpetrate violence also abuse substances, which could be a confounding variable. The study's cross-sectional design did not allow us to infer a causal relationship between IPV and each of the outcome variables. Finally, the study was subject to possible retrospective and social desirability biases, which may have contributed to underreporting of violence. However, the data collection instrument that was used assessed specific forms of physical violence based on modified items from the internationally validated Conflict-Tactics Scale in order to decrease such biases.[26,27]

Conclusion

Partner violence is predictive of health-risk behaviours and increased use of health care services among victimised women, indicating that substance abuse intervention should be a key component of violence intervention programming and that health care settings can serve as opportunities in which to screen and counsel women for IPV. Since our findings on the association between IPV and chronic physical illness are discrepant from the literature, further investigation is needed to elucidate the pathways between different forms of violence and risk of adverse health outcomes. This would be strengthened by population-based longitudinal studies, to gain a better understanding of the mechanisms underlying violence, lifestyle behaviours and physical illness.

Acknowledgments

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Table I

Multivariate odds ratios (with 95% confidence intervals) for health outcomes: Predictor – victim of IPV (model *N*=1 229)

Outcome	OR	LCI	UCI	*p*-value
Health-risk behaviours				
Ever smoker	1.68	1.06	2.68	0.029
Current smoker	1.90	1.09	3.30	0.024
Ever drinker	1.89	1.30	2.75	0.001
Regular drinker	2.37	1.28	4.41	0.007
Non-med sedative	2.43	1.11	5.33	0.027
Non-med sedative, 12*	1.26	0.60	2.64	0.541
Non-med stimulant	2.77	0.74	10.38	0.129
Non-med stimulant, 12	1.44	0.18	11.23	0.725
Non-med analgesic	1.82	1.24	2.66	0.003
Non-med analgesic, 12	1.72	1.11	2.65	0.015
Cannabis use	3.83	1.30	11.27	0.016
Cannabis use, 12	48.13	3.63	638.61	0.004
Other drug use	0.77	0.11	5.51	0.795
Health-seeking behaviours				
Partner stability	0.95	0.64	1.42	0.815
Sexual precautions	0.86	0.61	1.22	0.404
AIDS test	1.18	0.77	1.81	0.433
AIDS test, 12	1.22	0.73	2.05	0.434
Any MD visit, 12	1.50	1.10	2.06	0.011
Any healer visit, 12	1.96	1.17	3.28	0.011
Any health visit, 12	1.36	0.93	1.97	0.108
Physical illness				
Arthritis, 12	0.86	0.54	1.38	0.532
Back problems, 12	1.24	0.88	1.76	0.210
Headaches, 12	1.35	0.98	1.88	0.069
Chronic pain, 12	1.21	0.81	1.80	0.351
Allergies, 12	1.29	0.84	1.98	0.244
Stroke, 12	1.32	0.62	2.79	0.462
Heart attack, 12	1.82	1.00	3.32	0.051
Ever heart disease	1.23	0.69	2.18	0.471
Ever high BP	1.45	0.96	2.20	0.080
Ever asthma	1.03	0.56	1.89	0.927
Ever tuberculosis	0.66	0.26	1.67	0.374
Ever lung disease	0.38	0.10	1.42	0.147
Ever malaria	2.49	0.79	7.86	0.118
Ever diabetes	1.36	0.67	2.75	0.384
Ever ulcer	1.49	0.86	2.57	0.155

Outcome	OR	LCI	UCI	*p*-value
Ever thyroid disease	2.00	0.73	5.48	0.175
Ever neurological problem	1.62	0.51	5.14	0.409
Ever HIV/AIDS	0.37	0.01	9.98	0.546
Ever epilepsy	0.94	0.13	6.80	0.947
Ever cancer	1.25	0.22	7.10	0.795

[*] '12' refers to the past 12 months. The remaining variables refer to lifetime measurements.

Covariates: age, race, cohabiting, education, income, employment status, location.

OR = odds ratio; LCI = lower confidence interval; UCI = upper confidence interval;

MD = medical doctor; BP = blood pressure.